The Beagle, Records of the Museums and Art Galleries of the Northern Territory, 2001 **17**: 43-51

A NEW GENUS AND SPECIES OF SYLLIDAE (ANNELIDA: POLYCHAETA) COMMENSAL WITH OCTOCORALS

CHRISTOPHER J. GLASBY AND CHARLOTTE WATSON

Museum and Art Gallery of the Northern Territory,
GPO Box 4646, Darwin NT 0801, AUSTRALIA
Correspondence: chris.glasby@nt.gov.au

ABSTRACT

A survey of cnidarian material from Darwin Harbour, northern Australia, in the collection of the Museum and Art Gallery of the Northern Territory, yielded two species of commensal syllid polychaetes: *Haplosyllis* cf. *bisetosa* Hartmann-Schröder, 1960, an alcyonacean commensal previously known only from the Red Sea, plus a new species (and genus) of Syllinae, *Alcyonosyllis phili*. The new genus is characterised by having simple hooked chaetae with a subdistal boss and unarticulated dorsal cirri which are arranged in an alternating pattern of large, dorsally displaced cirri and smaller, lateral ones. *Haplosyllis xeniaecola* Hartmann-Schröder, 1993, which is also a commensal of alcyonaceans, is transferred to this new genus. *Alcyonosyllis phili* was found on nephtheid soft corals and gorgonians from the northwestern, northern and eastern coasts of Australia; it also occurs in southern New Guinea. Observations on the number of hosts harbouring *A. phili* and *Haplosyllis* cf. *bisetosa* and the number of worms per host are also provided.

KEYWORDS: Syllidae, Polychaeta, octocoral, alcyonacean, taxonomy, symbiotic, commensal, new genus, new species.

INTRODUCTION

The Syllidae (Polychaeta: Nereidoidea) is a large family with about 70 genera and over 600 species worldwide (Kudenov and Harris 1995); the Australian fauna comprises at least 32 genera and over 77 species (Glasby 2000). Compared to other polychaete groups, Syllidae are relatively commonly associated with other marine invertebrates, either as commensals on the surface of the host or as parasitic endobionts. Over 20 species belong to the former category (Martin and Britayev 1998), including five species of *Haplosyllis*, which are commensal on soft corals.

The discovery of a large, vividly coloured syllid associated with a nephtheid soft coral (Alcyonacea) from Darwin Harbour, Northern Territory, led to a survey of similar alcyonaceans (and other cnidarians) in the collections of the Museum and Art Gallery of the Northern Territory. The syllid resembled some species of *Haplosyllis* in having simple chaetae exclusively, but differed in other important features such as the form and arrangement of the dorsal cirri. It is described here as a new genus and species, *Alcyonosyllis phili* n. gen. n. sp. The survey of alcyonacean material revealed a second, much smaller species of syllid which closely resembled *Haplosyllis bisetosa* Hartmann-Schröder, 1960. Because the type material of *H. bisetosa* is in poor condition (CJG, pers. obs.), we were unable to provide here an unequivocal identification; these specimens will be described in a subsequent paper.

The syllids (and other commensal polychaetes) were removed from the alcyonacean hosts and registered separately from the hosts. The number of worms per host was estimated based on total number of commensals and hosts per sample, because of the possibility of cross-transfer of worms between hosts after the sample was collected. Typically there were 1-6 host alcyonaceans per sample. Observations and drawings were made with a Wild M8 dissecting microscope, and Leitz Laborlux compound microscope with drawing tube. Type material has been deposited at the Los Angeles County Museum of Natural History, Los Angeles, formerly Allan Hancock Foundation (LACM-AHF), Natural History Museum, London (BMNH), Museo Nacional de Ciencias Naturales de Madrid (MNCN) and the Museum and Art Gallery of the Northern Territory, Darwin (NTM). All other material is housed in the NTM. Material for comparative purposes was borrowed from the Forschungsinstitut und Naturmuseum Senckenburg, Frankfurt (SMF).

SYSTEMATICS

Family Syllidae Grube, 1850
Subfamily Syllinae Grube, 1850
Alcyonosyllis n. gen.

Diagnosis. Syllinae with long body and large number of chaetigers. Prostomium with 2 pairs of eyes, 3 antennae; palps free to base. Nuchal organs are an inconspicuous ciliated ridge between prostomium and tentacular segment. Two pairs of tentacular cirri. Antennae, tentacular cirri and dorsal cirri unarticulated. Alternating dorsal cirri of two types: longer and thicker cirri held erect and curling over dorsum, slightly displaced dorsally compared to shorter ones; shorter and thinner cirri laterally directed. Ventral cirri present, extending to level of parapodial lobes. Parapodia uniramous, bearing subacicular unarticulated hooked chaetae with subdistal boss. Pygidium carrying pair of large unarticulated cirri. Pharynx with single anterior mid-dorsal tooth; rim smooth; 10 terminal papillae.

Type species. *Alcyonosyllis phili* n. sp. by original designation.

Included species. *Alcyonosyllis phili* n. sp.; *Alcyonosyllis xeniaecola* (Hartmann-Schröder, 1993) new combination.

Remarks. The new genus belongs to the subfamily Syllinae as currently circumscribed (Garwood 1991; Kudenov and Harris 1995) as it has palps that are free basally, small and inconspicuous nuchal organs, two pairs of tentacular cirri, ventral cirri present, and it reproduces by schizogamy (budding off of sexual individuals, or stolons, from the adult, or stock). The new genus differs most strikingly from most syllines in having unarticulated tentacular and dorsal cirri. A comparison of major features of this new genus with those of other syllids having exclusively simple chaetae is given in Table 1.

Based on the above generic definition *Haplosyllis xeniaecola* Hartmann-Schröder, 1993 should be transferred to *Alcyonosyllis* (see Remarks under species description). Possibly other species currently allocated to *Haplosyllis* could also belong to *Alcyonosyllis*, but this is best assessed during a revision of the genus. *Haplosyllis* currently comprises species with articulated or unarticulated dorsal cirri and very different types of simple chaetae — tomahawk-shaped ones (*sensu* Licher 1999) and those with a subdistal boss (Hartmann-Schröder 1978: table 1). The most widely reported species in the genus, the sponge commensal *Haplosyllis spongicola*, is currently being revised (D. Martin pers. comm.).

Alcyonosyllis differs from *Trypanosyllis (Trypanobia)* in having a subcylindrical rather than a flattened body; it differs from *Bollandia* in having three antennae; it differs from *Bollandia*, *Haplosyllides* and *Trypanosyllis (Trypanobia)* in having large, basally-free palps; it differs from *Geminosyllis*, *Haplosyllis*, *Parahaplosyllis* and *Trypanosyllis (Trypanobia)* in having unarticulated

Table 1. Comparison of features of *Alcyonosyllis* with other syllid taxa characterised by the exclusive presence of simple chaetae. Characterisation of each genus based on type species. Additional data for *Haplosyllides* from San Martin *et al.* (1997). [1]Originally this genus was interpreted as lacking antennae and having three pairs of tentacular cirri (Glasby 1994); however an equally likely possibility is the presence of one pair of antennae and two pairs of tentacular cirri. [2]Tomahawk type chaetae (*sensu* Licher 1999) have a large laterally-projecting subdistal tooth and a smaller distal tooth (which may be bifid).

	Body shape	Antennae (number)	Palps	Tentacular cirri	Pharynx (armature)
Alcyonosyllis n. gen., n. sp.	Subcylindrical	3	Large, free basally	2 pairs, unarticulated	Subdistal dorsal tooth
Bollandia Glasby	Subcylindrical	0 or 2[1]	Absent	2 or 3 pairs[1], unarticulated	Unarmed
Geminosyllis Imajima	Subcylindrical	3	Large, free basally	2 pairs, articulated	Subdistal dorsal tooth and trepan
Haplosyllis Langerhans	Subcylindrical	3	Large, free basally	2 pairs, articulated	Subdistal dorsal tooth
Haplosyllides Augener	Subcylindrical	3	Fused forming a single bilobed structure	2 pairs, unarticulated	Subdistal tooth (absent in large worms)
Parahaplosyllis Hartmann-Schröder	Unknown	3	Small, oval-shaped; free to base	2 pairs, articulated	? Subdistal tooth
Trypanosyllis (Trypanobia) Imajima and Hartman	Flattened	3	Very reduced (not visible dorsally)	?2 pairs, articulated	Trepan only

dorsal and tentacular cirri. It is distinguished from all sylline genera except *Haplosyllis* and *Haplosyllides* in having a subdistal dorsal tooth as the only form of pharyngeal armature. It is unique among the syllines with simple chaetae in the form and alternation pattern of the dorsal cirri and type of chaetae (Table 1).

The new genus is superficially similar to *Parasphaerosyllis* Monro in having alternating large and small dorsal cirri. However, the smaller dorsal cirri of *Parasphaerosyllis* are articulated, the larger cirri have a distinct terminal palpode, and both appear to arise at the same level laterally. Moreover, *Parasphaerosyllis* has both compound bifid chaetae and simple slender bifid chaetae, which are typical of many Syllidae.

Etymology. The compound name of the new genus is formed from the scientific name for soft corals (Alcyonacea) and *Syllis*, the type genus of the polychaete family (and a Latin word for worm), indicating the close ecological association between the worm and certain types of soft coral. The gender is feminine.

Alcyonosyllis phili n. sp.

(Figs 1-5)

Material examined. HOLOTYPE - East Arm Port, Darwin Harbour (12°29.4' S 130°53.9' E), intertidal reef flat, coll. P. Alderslade, 14 November 2000, NTM W17206. PARATYPES - same collection details as for holotype, 3(NTM W17208), 1(NTM W17209). East Arm Port , Darwin Harbour, intertidal reef flat, coll. C. Glasby, 11 January 2001, 1(NTM W17207), 2(LACM-AHF Poly2075), 3(BMNH ZB2001.6910-6912), 3(MNCN 16.01/8712). NON-TYPE MATERIAL - Northern Territory, Darwin Harbour, Stevens Rock, 5(NTM W17242), Angler Reef, Lee Point, 2(NTM W17213), 2(NTM W17214); off Dudley Point, 1(NTM W17215), 2(NTM W17216), 4(NTM W17217), 1(NTM W17218), Channel Rock, 2(NTM W17219). Western Australia, Condillae Island, Institute Group, 14°06.0' S 125°33' E, 1(NTM W6801), 1(NTM W6802), Albert Reef, 15 38.0'S 123°21.0' E 1(NTM W6807). New South Wales, Lord Howe Island, Ned's Beach (31°35.0' S 159°06.0' E), 1 m, (NTM W5015). Localities are given in the Appendix.

Other material examined. *Alcyonosyllis phili* Bootless Bay, Port Moresby, Papua New Guinea, 30.11.1996, photographic record, Neville Coleman. *Haplosyllis xeniaecola* holotype (SMF 4433/1).

Description. Holotype complete, with about 150 chaetigers, 28 mm long, maximum width (excluding parapodia) 1.2 mm. Paratype material ranges from 75 chaetigers, 13 mm long, 0.7 mm wide to 173 chaetigers, 56 mm long and 1.6 mm wide. Measurements and counts include posteriorly attached stolon when present (on holotype and most paratypes).

Description of holotype except where indicated. Body long, robust, similar in width throughout, except for slight tapering at head and tail ends, and slight

Table 1 (cont.). Comparison of features of *Alcyonosyllis* with other syllid taxa characterised by the exclusive presence of simple chaetae. Characterisation of each genus based on type species. Additional data for *Haplosyllides* from San Martin *et al.* (1997). [1]Originally this genus was interpreted as lacking antennae and having three pairs of tentacular cirri (Glasby 1994); however an equally likely possibility is the presence of one pair of antennae and two pairs of tentacular cirri. [2]Tomahawk type chaetae (*sensu* Licher 1999) have a large laterally-projecting subdistal tooth and a smaller distal tooth (which may be bifid).

	Dorsal cirri	**Chaetae**	**Aciculae (number)**
Alcyonosyllis n. gen., n. sp.	Alternating thick and slender types; unarticulated	2 types (distally recurved, no teeth; and distally recurved, minute subdistal tooth)	Include blunt tipped and tapered types (3-5)
Bollandia Glasby	All slender tapered, irregularly wrinkled	2 types (large, distally recurved, no teeth; and flail-tipped)	Tapered (1)
Geminosyllis Imajima	All slender, articulated	2 types (tomahawk[2] and slender bifid types)	Blunt tipped (1-4)
Haplosyllis Langerhans	All slender, articulated (though variable in length)	1 type (tomahawk[2] type)	Tapered anteriorly (2-3); posteriory hooked (1-2)
Haplosyllides Augener	All slender, unarticulated	2 different sizes (both tridentate)	Straight, blunt tipped (1)
Parahaplosyllis Hartmann-Schröder	Short, indistinct articulations	3 types (tomahawk[2], bidentate, and slender spines)	Distally knobbed
Trypanosyllis (Trypanobia) Imajima and Hartman	All slender, articulated	1-3 types (including furcate, falcate types with or without subdistal spur	Distally bent or blunt-tipped (4)

Fig. 1. *Alcyonosyllis phili* n. gen., n. sp. *in situ* on a species of *Dendronephthya*, Bootless Bay, Port Moresby, New Guinea. Photo by Neville Coleman.

Fig. 2. *Alcyonosyllis phili* n. gen, n. sp. *in vitro* on a nephtheid host from Darwin Harbour (NTM W17242). The recently fixed specimen differs from the live appearance in having less pigment intensity and in the large dorsal cirri which are held erect rather than arching over the dorsum. Photo by Neville Coleman.

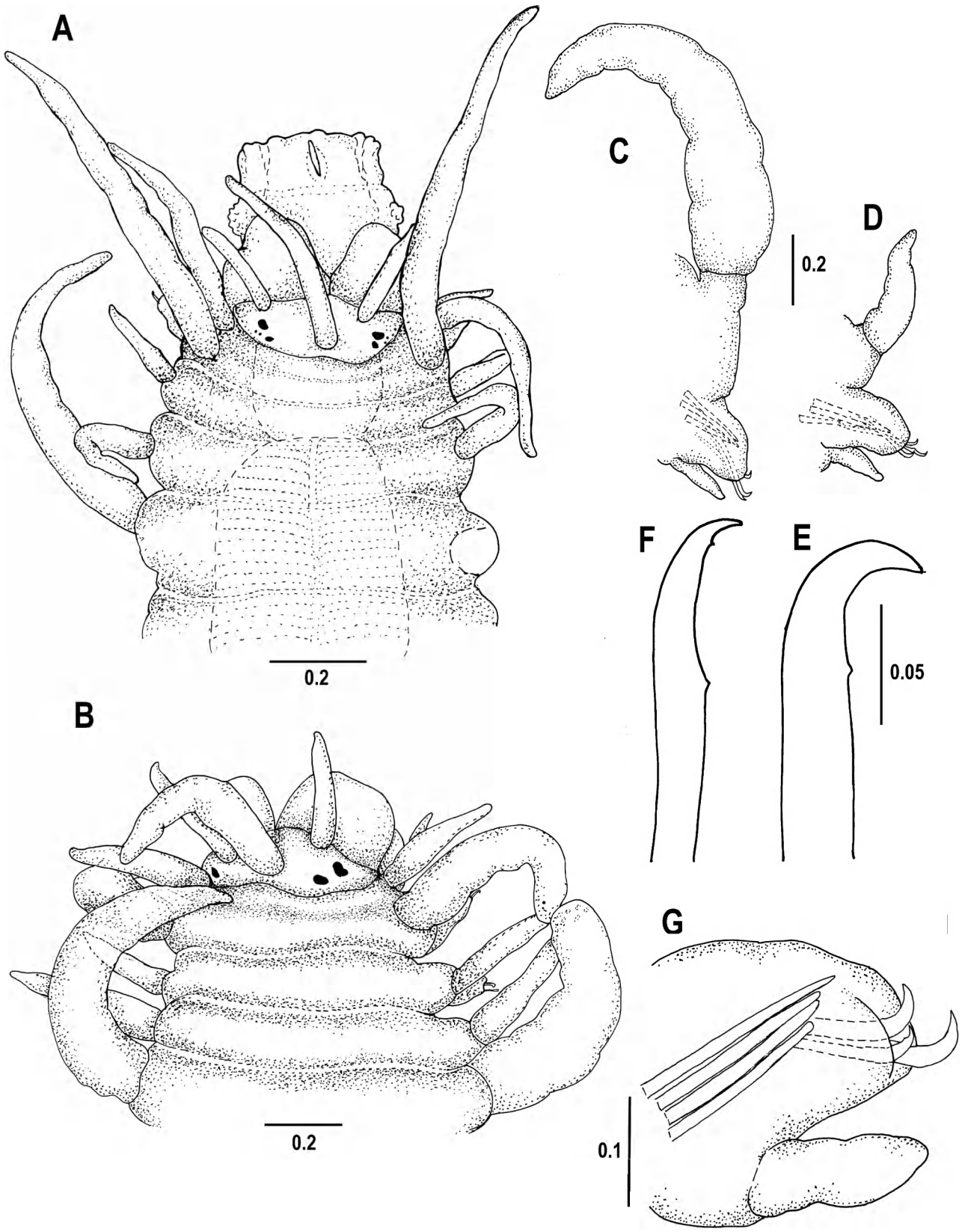

Fig. 3. *Alcyonosyllis phili* n. gen, n. sp. **A**, paratype (NTM W17209), head end, dorsal view with everted pharynx showing mid-dorsal pharyngeal tooth; **B**, paratype (NTM W17208), head end, dorsal view with retracted pharynx; **C**, holotype (NTM W17206), parapodium of chaetiger 25, showing larger-type dorsal cirri; **D-F**, holotype (NTM W17206); **D**, parapodium of chaetiger 12, showing smaller-type dorsal cirri; **E**, thicker simple chaeta of mid-body; **F**, slender simple chaeta of same mid-body chaetiger; **G**, non-type (NTM W5015), parapodium of anterior chaetiger, showing arrangement of aciculae (dorsal cirrus not shown). Scale bars are in mm.

constriction at about chaetiger 105 corresponding to junction between stock and stolon. Cream coloured with transverse brown pigment bands (flanked on either side by thin white stripe) on dorsum of peristomium and chaetigers 2,3,5,7,8,10 and thereafter on all even chaetigers (Figs 1,2). Venter more-or-less uniformly light brown. Pigment pattern generally faded in preserved specimens.

Prostomium sub-quadrangular, about twice as wide as long (Fig. 3A, B). Two pairs dark laterally-positioned eyes, similar in size. Median antenna situated on mid-posterior prostomium, about twice length and thickness of lateral antennae. Palps large, slightly longer than length of prostomium, free to base. Antennae more-or-less smooth. Tentacular segment projecting slightly mid-anteriorly to cover nuchal organs, carries two pairs of cirri; dorsal pair slightly thicker and twice length of ventral pair (dorsal pair slightly smaller than median antenna, ventral pair slightly smaller than lateral antennae).

First, and subsequent, chaetigers bearing dorsal and ventral cirri and sub-conical parapodial lobe; pre-chaetal lip slightly more prominent than post-chaetal lip in anterior body. Dorsal cirri of two distinct forms: dorsally-displaced larger cirri with distinct cirrophore on chaetigers 1,4,6,9,11 and thereafter on odd chaetigers (Fig. 3C); unarticulated, inflated, tapering to a point; held erect and curved over dorsum (Figs 3A-C). Smaller, laterally-directed dorsal cirri arise closer to parapodial lobes than larger cirri on chaetigers 2,3,5,7,8,10 and thereafter on even chaetigers, i.e., same chaetigers having brown bands; 1/3 – 1/4 length of larger ones (Fig. 3D). Dorsal cirri on chaetiger 2 slightly shorter than subsequent smaller cirri. Ventral cirri smooth, approximately equal in length to parapodial lobe (Fig. 3C,D). Each parapodium typically bearing 2 or 3 unarticulated hooked chaetae (rarely 1) ventral to aciculae (Fig. 3C-D,G): thicker chaeta more hooked and with very slight subdistal boss (Fig. 3E); thinner chaeta with more prominent V-shaped subdistal boss and often with minute tooth immediately below hook (Fig. 3F). Aciculae consist of 3-5 straight, blunt-tipped types per parapodium, and 1 or 2 more slender types with attenuated tip, which extend slightly beyond others (Fig. 3G).

Pygidium small, inflated slightly, carrying pair of large unarticulated cirri, similar to enlarged dorsal cirri.

Gut not visible through body wall in living or preserved (unmounted) material. Pharynx retracted in holotype. Retracted pharynx occupying first 4-5 chaetigers; slightly curved hyaline tooth on dorsal surface distally (Fig. 3A); anterior rim chitinised with smooth border. Ten low pharyngeal papillae visible on specimens with fully everted pharynges. Proventricle occupying chaetigers 4-5 to chaetigers 9-10 with about 40 muscle cell rows (Fig. 3A).

Single male or female stolons ranging in size from 37-65 chaetigers occur on most type specimens; they lack head appendages and epitokal chaetae and are not fully mature. Specimens with large stolons have cleft ventral protuberance at point of attachment of stolon representing new tail end.

Variation. A few non-type specimens (e.g. NTM W17217) with fully mature stolons attached to stock. Stolons with 2 pairs of anterolateral eyes and 2 pairs of lateral antennae (Fig. 4); body generally enlarged relative to that of stock, hook chaetae are withdrawn within parapodia, and emergent capillary epitokal

Fig. 4. *Alcyonosyllis phili* n.gen, n. sp. Non-type specimen (NTM W17217), dorsal view, with fully mature stolon attached to stock showing 2 pairs of anterolateral eyes and 2 pairs of lateral antennae.

Fig. 5. *Alcyonosyllis phili* n.gen, n. sp. Non-type specimen (NTM W17217), lateral view, with regenerating tail end on venter at junction of stock and stolon comprising about 20 short segments and small pygidium bearing a pair of anal cirri.

chaetae appear between parapodial lobe and dorsal cirrus. Epitokal chaetae absent on body of stock. Specimen NTM W17217 with regenerating tail end on venter at junction of stock and stolon comprising about 20 short segments, each with aciculae but no external chaetae and small pygidium bearing pair anal cirri (Fig. 5).

Live specimens usually vividly coloured with brown bands and blue to purple pigment spot at base of antennae, dorsal and tentacular cirri and dark tips; pigment pattern fades rapidly after fixation (Figs 1,2). Intensity of pigmentation variable in living material, occasionally almost completely absent (e.g. NTM W17209).

Distribution and habitat. *Alcyonosyllis phili* n. gen. n. sp. occurs on the northwestern, northern and eastern coasts of Australia, and southern Papua New Guinea. The Darwin material was found on an undescribed genus and species of Nephtheidae; and the Papua New Guinea specimen was photographed on a species of *Dendronephthya* (Nephtheidae). Western Australian material occurred on both nephtheids and a gorgonian (*Melithaea* sp.) and the New South Wales material occurred on a different species of *Melithaea*.

Remarks. Five species of *Haplosyllis* have been reported in the literature as having cnidarian hosts: *H. anthogorgicola* Utinomi on the gorgonian *Anthogorgia bocki* (Utinomi 1956; Imajima and Hartman 1964); *H. bisetosa* Hartmann-Schröder on an unidentified alcyonacean (Hartmann-Schröder 1960); *H. chamaelon* Laubier on the gorgonian *Paramuricea clavata* (Laubier 1960; López *et al.* 1996); *H. xeniaecola* Hartmann-Schröder on the alcyonacean *Xenia viridis* (Hartmann-Schröder 1993); and a new species on the gorgonian *Villogorgia bebrycoides* currently being described by Martin *et al.* (D. Martin, pers. comm.). *Haplosyllis anthogorgicola, H. chamaelon* and the new species of Martin *et al.* differ from the new taxon in the form of the simple chaetae: *H. chamaelon* and the new species of Martin *et al.* have a supra-distal secondary tooth; *H. anthogorgicola* has typical *Haplosyllis*-type tomahawk chaetae. All five species, except *H. xeniaecola*, differ from the new taxon in having dorsal cirri that are articulated and of similar thickness throughout.

Based on a comparison of type material, the new taxon resembles most closely *Haplosyllis xeniaecola* from Ternate, Maluku, Indonesia. Indeed, the similarites are such that we consider *H. xeniaecola* should be classified together with *A. phili*, under *Alcyonosyllis*. Both species have dorsal cirri that are unarticulated, with the larger cirri being slightly displaced dorsally. The two species differ in the detail of the dorsal cirri arrangement pattern and in the form of the chaetae: the dorsal cirri of *H. xeniaecola* from the midbody onward have a weak length-alternation pattern (all cirri being more-or-less long, greater than the body width). Further, in *H. xeniaecola* the simple chaetae within a parapodium are of similar thickness (not subequal as in *A. phili*), they do not have a definite subdistal tooth (the smaller chaeta has a subdistal tooth in *A. phili*), and the angle of the recurved tip is shallower in *H. xeniaecola* (see Hartmann-Schröder 1993: figs 2-5). Further, *H. xeniaecola* has a peculiar pigmented (sclerotised?) pharynx, visible through the body wall, which is absent in the new species.

This new species is schizogamous. All specimens, except the smallest, have a single reproductive stolon attached posteriorly to the adult stock. Segments are added to the stolon from the prepygidial proliferative zone of the stock, a process known as scissiparity and common in many syllines (Garwood 1991). While the stolon is still developing, a new tail end and pygidium forms on the ventral surface at the junction between the stock and the stolon. Probably after release of the stolon, the stock will regain its pre-reproductive form, and therefore survive to reproduce again. The initial stages of pygidium formation appears to be similar to that in *Haplosyllis chamaeleon* Laubier, 1960 (D. Martin, pers. comm.), with both species having two small ventrolateral protuberances between the stock and the stolon. However, in *H. chamaeleon* the two protuberances remain separated even after stolon release, whereas in *A. phili*, the two protuberances fuse at a very early stage to produce a single 20-chaetiger tail end before the stolon is released. Observations on the form and fate of the adult syllid after it releases its stolon are rare in the literature, but the differences exhibited by *A. phili* and *H. chamaeleon* indicate that it could be a useful character to distinguish species, and perhaps even genera.

Etymology. The species is named after our colleague and friend Philip Alderslade (Curator of Cnidarians, NTM) who collected the first specimens and helped with octocoral identification.

BIOLOGY OF THE COMMENSAL SYLLIDS

The occurrence of *Alcyonosyllis phili* on at least two different species of alcyonacean (an undescribed genus and *Dendronephthya*) and two different species of gorgonian is noteworthy. All other symbiotic species of *Haplosyllis* associated with cnidarians, including the *Haplosyllis* cf. *bisetosa*, are apparently monoxenous (restricted to a single host) (Martin and Britayev 1998), although data are few and most associations are poorly known. Both *A. phili* and *H.* cf. *bisetosa* appear not to harm the host or induce the formation of secondary shelter-like structures, which have been noted for other cnidarian symbiotic syllids (Glasby 1994; Martin and Britayev 1998). Therefore the relationship in both cases

appears to be commensal. Both *A. phili* and *H.* cf. *bisetosa* may be obligatory commensals because free-living forms are unknown.

About 70 preserved nephtheids from the Darwin region were examined for the presence of polychaete commensals. The most commonly occurring commensal was *Haplosyllis* cf. *bisetosa*, which occurred on most of the nephtheids examined. *Alcyonosyllis phili* occurred on about half of the nephtheid specimens examined, usually the larger ones (Table 2). Both syllid species commonly occur on the same host. This appears to be the first time that two commensal polychaetes from the same family have been reported from the same host species. The only other commensal species found in the survey (a polynoid) occurred in low numbers on two specimens (NTM C4901, NTM C11784).

The number of commensals per host varied from 0 to 28 in *Haplosyllis* cf. *bisetosa* and 0 to 3 in *Alcyonosyllis phili* (Table 2). These figures are not precise because the material examined was not collected for the prime purpose of quantitatively estimating commensal numbers. The alcyonacean hosts were not always relaxed prior to fixation, and resulting muscle contraction and body wall distortion tended to obscure the smaller polychaete commensals.

The purpose of the vivid colour pattern of *A. phili* is perplexing. The striking banded pattern (Figs 1,2) would appear not well suited for camouflage particularly on a host whose colour ranges from light pink to crimson. Indeed, the worms could be easily seen on all hosts, despite their colour, during intertidal field collecting. However, the worms do appear to be able to alter the intensity of their colour pattern to more closely resemble that of the host. For example, one of the paratypes (NTM W17209), found on a light pink nephtheid, was almost devoid of pigment, with the banding pattern only just discernable. Further, a commensal species of ophiuroid and an isopod found on the same host as specimens of *A. phili* (NTM W17242) showed similar brown banding patterns. So it appears as though the

Table 2. Nephtheid material examined for the presence of syllid commensals showing numbers of specimens and NTM registration numbers at various localities in, and around, Darwin Harbour. Localities are given in the Appendix.

Nephtheidae sp.		***Alcyonosyllis phili***			***Haplosyllis* cf. *bisetosa***		
specimen lot	**no.**	**specimen lot**	**no.**	**rate of occurrence**	**specimen lot**	**no.**	**rate of occurrence**
C3474	2		0	0	W17221	10	5.0
C3779	2		0	0	W17222	1	0.5
C3781	1	W17213	2	2.0	W17223	7	7.0
C3811	2		0	0	W17224	15	7.5
C3812	6	W17214	2	0.33	W17225	5	0.83
C3783	5		0	0	W17226	3	0.60
C4613	1		0	0		0	0
C4888	3	W17215	1	0.33		0	0
C4889	4		0	0	W17227	1	0.25
C4891	3	W17216	2	0.66	W17228	2	0.66
C4900	3	W17217	4	1.33		0	0
C4901	2	W17218	1	0.50		0	0
C5710	>5		0	0		0	0
C11108	3	W17219	2	0.66	W17229	6	2.0
C11711	1		0	0	W17230	28	28.0
C11712	4		0	0	W17231	14	3.5
C11784	1		0	0	W17232	15	15.0
C13076	1		0	0	W17233	6	6.0
C13141	1	W17210	1	1		0	0
C13140	1	W17208	3	3		0	0
C13137	1		0	0	W17234	5	5.0
C13138	1	W17211	1	1		0	0
C13144	3		1	0.33	W17235	2	0.66
C13143	1	W17212	1	1		0	0
C13139	1		0	0	W17236	1	1.0
C13142	1	W17206 W17207	2	2	W17237	1	1.0
C13145	2		0	0	W17238	5	2.5
C13146	3		0	0	W17239	2	0.66

colouration of *A. phili* may well have a camouflage function, but clearly this is an area that needs further investigation.

ACKNOWLEDGMENTS

We thank Phil Alderslade for bringing the presence of the syllid polychaete on soft corals to the senior authors' attention and for assistance identifying the cnidarians; Daniel Martin and Guillermo San Martin for stimulating discussions on commensal syllids, and the former for access to unpublished research; Neville Coleman for permission to use his colour slide; Belinda Alvarez de Glasby for scanning and editing the illustrations; and Pat Hutchings and Daniel Martin for helpful reviews.

REFERENCES

Garwood, P.R. 1991. Reproduction and the classification of the family Syllidae (Polychaeta). In: Petersen, M.E. and Kirkegaard, J.B. (eds) *Systematics, biology and morphology of world Polychaeta. Proceedings of the 2nd International Polychaete Conference, Copenhagen, 1986*. Pp. 81-87. Ophelia Supplement **5**. Ophelia Publications: Helsingor.

Glasby, C.J. 1994. A new genus and species of polychaete, *Bollandia antipathicola* (Nereidoidea: Syllidae), from black coral. *Proceedings of the Biological Society of Washington* **107**: 615-621.

Glasby, C.J. 2000. Family Syllidae. In: Beesely, P.L., Ross, G.J.B. and Glasby, C.J. (eds) *Polychaetes & Allies: The southern synthesis. Fauna of Australia. Vol. 4A Polychaeta, Myzostomida, Pogonophora, Echiura, Sipuncula*. Pp 161-167. CSIRO Publishing: Melbourne.

Grube, A.E. 1850. Die familien der Anneliden. *Archiv für Naturgeschichte, Berlin* **16**: 249-364.

Hartmann-Schröder, G. 1960. Polychaeten aus dem Roten Meer. *Kieler Meeresforschungen* **16**: 69-125.

Hartmann-Schröder, G. 1978. Einige Sylliden-Arten (Polychaeta) von Hawaii und aus dem Karibischen Meer. *Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut* **75**: 49-61.

Hartmann-Schröder, G. 1993. *Haplosyllis xeniaecola*, ein neuer polychaet (Syllidae) von den Molukken (Indonesien). *Helgoländer Meeresuntersuchungen* **47**: 305-310.

Imajima, M. and Hartman, O. 1964. The polychaetous annelids of Japan. *Occasional Papers of the Allan Hancock Foundation* **26**: 1-452.

Kudenov, J.D. and Harris, L.H. 1995. Family Syllidae Grube, 1850. In: Blake, J.A., Hilbig, B. and Scott, P.H. (eds) *Taxonomic atlas of the benthic fauna of the Santa Maria Basin and western Santa Barbara Channel. Volume 5. The Annelida. Part 2. Polychaeta: Phyllodocida (Syllidae and scale-bearing families), Amphinomida, and Eunicida*. Pp. 1-97. Santa Barbara Museum of Natural History: Santa Barbara, California.

Laubier, L. 1960. Une nouvelle sous-espèce de syllidien: *Haplosyllis depressa* Augener ssp. nov. *chamaeleon*, ectoparasite sur l'octocoralliaire *Muricea chamaeleon* Von Koch. *Vie et Milieu* **11**: 75-87.

Licher, F. 1999. Revision der gattung *Typosyllis* Langerhans, 1879 (Polychaeta: Syllidae). Morphologie, Taxonomie und Phylogenie. *Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft* **551**: 1-336.

Lopez, E., San Martin, G. and Jimenez, M. 1996. Syllinae (Syllidae, Annelida, Polychaeta) from Chafarinas Islands (Alborán Sea, W Mediterranean). *Miscellania Zoologica* **19**: 105-118.

Martin, D. and Britayev, T.A. 1998. Symbiotic polychaetes: review of known species. *Oceanography and Marine Biology: an Annual Review* **36**: 217-340.

San Martín, G.,D., Ibarzábal, M., Jiménez, M. and López. E. 1997. Redescription of *Haplosyllides floridana* Augener, 1924 (Polychaeta: Syllidae: Syllinae), with notes on morphological variability and comments on the generic status. *Bulletin of Marine Science* **60**: 364-370.

Utinomi, H. 1956. On the so-called "Umi-Utiwa", a peculiar flabellate gorgonacean, with notes on a syllidean polychaete commensal. *Publications of the Seto Marine Biological Laboratory* **5**: 243-250.

Accepted 29 October 2001

Appendix. Localities for host and commensal worms listed in Table 2.

Specimen lot	Locality
C3779, C3781, C3811, C3812, C3783, W17213-4, W17221-6	Angler Reef, Lee Point, Darwin Harbour
C4888, C4889, C4891, C4900-1, W17215-17218, W17227-8	Off Dudley Point, Darwin Harbour
C11108, W17219, W17229	Channel Rock, Darwin Harbour
C11711, W17230	Pump House, Darwin Wharf, Darwin Harbour
C11712, W17231	Stokes Hill Wharf, Darwin Harbour
C13076, W17233	Channel Island, Darwin Harbour
C13137-13146, W17206- 17208, W17210-17212, W17234-17240	East Arm Port, Darwin Harbour
C3474, W17221	Sandy Is No. 2, Cobourg Peninsula
C4613	New Yea r Island, off Cobourg Peninsula
C11784, W17232	Palm Bay, Croker Island, off Cobourg Peninsula
C5710	Orontes Reef, Port Essington