

## Notes on the littoral *Polychæta* of Torquay.

By

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The following notes are confined to the species of *Polychæta*, which have been found by myself during the last four years, between tide-marks, on the coast comprised within the Borough of Torquay. Torquay is so well known as a hunting ground for the marine zoologist that it is unnecessary to describe the features of the shores. No special study of the *Polychæta* of Torquay appears to have been previously made, although the locality, Torbay, occurs somewhat frequently in the British Museum Catalogue of Worms.

### Syllidæ.

Twenty species of Syllids have been found; of these eight have not apparently been previously recorded from the British area. They are, *Trypanosyllis cæliaca*, Clpd.; *Autolytus ehbiensis*, de St. Joseph; *A. longiferiens*, de St. Joseph; *A. macrophthalma*, Marenzeller; *Grubea clavatu*, Clpd.; *Eurysyllis paradoxa*, Clpd., and *Pionosyllis lamelligera*, de St. Joseph. The Syllids were nearly all obtained by bringing home the roots of *Laminaria* and placing them in glass vessels, when in a few hours the Annelids crawl out and can be picked out with a pipette.

EXOgone GEMMIFERA, Pagenstecher. *McIntosh, Mon. Brit. Ann.*, vol. ii., 1908, p. 151; *de St. Joseph, Ann. Sc. Nat. Zool.*, 1886, p. 209 (as *Pædophylax claviger*).

This species is by no means uncommon at Torquay amongst seaweeds from half-tide mark downwards. When such weeds are placed in a glass jar, Exogone is one of the first species to leave the shelter of the weeds and crawl out on the glass sides; but unless observed within five or six hours from the time the weed is placed in the vessel, it probably will not be noticed, because it very quickly dies and falls down amongst the debris, where, owing to its small size, it is almost impossible to find it.

The appendages very easily fall off, hence it is not unusual to see individuals with only one or two tentacles.

Females with fully developed young ones, in the seventh stage of de St. Joseph, were found in the month of March.

The young are attached, as de St. Joseph states, to the ventral side by a pedicle; but this pedicle is sufficiently long to allow some movement of the young, so that when the mother crawls about, the young ones turn upwards and appear to be carried on the back.

GRUBEA CLAVATA, Clpd., *de St. Joseph, Ann. Sc. Nat. Zool.*, 1886, p. 200.

One example from *Laminaria* root, obtained at an unusually low spring tide, from rocks at Oddicombe Beach in the month of January.

PIONOSYLLIS DIVARICATA. Keferstein = *longocirrata*, de St. Joseph, *McIntosh, Mon. Brit. Ann.*, vol. ii., p. 164.

Three or four were obtained in the months of March and April from Corbyn's Head. They were extremely fragile, making it very difficult to prepare a satisfactory mount.

PIONOSYLLIS LAMELLIGERA, de St. Joseph. *Ann. Sc. Nat. Zool.*, 1886, p. 113.

This species is very common, one or more being found in nearly every root of *Laminaria*. Like *P. divaricata* it is very fragile breaking up into pieces of two or three segments. The Torquay specimens agree with the description given by St. Joseph, but some of them are rather longer, reaching 10 mm. in length and having about 67 segments.

A large proportion of the individuals found were females with ova of a conspicuous pink colour. They often violently vibrate the posterior portion of the body while the front remains fixed. It seems possible that one use of the so-called swimming bristles in the sexual forms of Syllids generally, is to break off a portion, or the bud, from the rest of the body at the proper time.

EUSYLLIS TUBIFEX, Gosse. *McIntosh, Mon. Brit. Ann.*, vol. ii., 1908 p. 173.

Fairly common in glass jars containing weeds covered with Polyzoa and Sertularia, just in the same way as it was first obtained by Gosse at Ilfracombe. Several females containing ova were obtained in the month of April, some of them showing well-developed swimming bristles, but in no case was there any sign of a stolon being formed.

It is curious that a species which is said to be common in the North, and is also found in Devon, should not yet have been reported from the other side of the Channel.

The dorsal cirri rapidly taper to a point, in which respect it appears to differ from *E. Blomstrandii*, which is apparently very near it.

ODONTOSYLLIS GIBBA, Clpd. *McIntosh, Mon. Brit. Annel.*, vol. ii. p. 183.

Several examples of this species were obtained from Corbyn's Head. They agreed in colour with the one from Plymouth figured in *Mon. Brit. Annel.* In one example two red eye-spots in front of the anterior pair of large eyes were distinctly observed. These additional spots apparently have only been previously observed in the *Umbellisyllis fasciata* of M. Sars which, according to McIntosh, is the same species.

ODONTOSYLLIS CTENOSTOMATA, Clpd. *McIntosh, Mon. Brit. Annel.*, vol. ii., p. 182.

The most abundant of all the species of Syllids at Torquay.

The colour is usually yellowish green. In glass vessels it creeps to the edge of the water. Although unripe individuals are so numerous, only one or two, females, were found with swimming bristles.

AMBLYOSYLLIS LINEATA, Grube. *McIntosh, Mon. Brit. Annel.*, vol. ii., p. 225.

Occasionally met with in weeds from the rocks between Oddicombe and Babbicombe beaches. One individual was marked with purple stripes, and appeared to belong to the variety *formosa*.

SYLLIS SPONGICOLA, Grube = *S. hamata*, Clpd. *McIntosh, Mon. Brit. Annel.*, vol. ii., p. 197.

Fairly abundant. The colour is rather a reddish brown than orange. Several females with ova showed no signs of swimming bristles or formation of a bud. Only one individual showed a distinct bud with ocular spots on each segment.

SYLLIS PROLIFERA, Krohn. *McIntosh, Mon. Brit. Annel.*, p. 161 (as *Pionosyllis prolifera*).

One of the most numerous of the Torquay Syllids. It appears to be a very variable species, both as regards the number of the articulations of the cirri and the colouring. Some have markings like those given in *Mon. Brit. Annel.*, fig. 53, others like the variety *variegata* as figured by Marenzeller, while some are uniformly coloured.

The articulations of the longer dorsal cirri, in some cases, are as many as fifty. Several with buds were found; one with a regenerated head, without proboscis or proventriculus, exactly like that described by de St. Joseph. *Ann. Sc. Nat.*, 1886, p. 147.

SYLLIS ALTERNOSSETOSA, de St. Joseph. *Ann. Sc. Nat.*, 1886, p. 150.

The species found at Torquay is undoubtedly the one so fully described by de St. Joseph. Malaquin, in his *Recherches sur les Syllidiens*, considers *S. alternossetosa* as identical with *S. hyalina*, Grube. But this species, as described by McIntosh, *Mon. Brit. Annel.*, vol. ii., p. 167,

differs from it, having all the terminal pieces of the compound bristles bidentate in all the regions of the body.

Giard, on the other hand, as stated on page 202 of *Mon. Brit. Ann.*, vol. ii., considers *S. alternosetosa* as a variety of *S. cornuta*, H. Rathke. The segments in the anterior part of the body are marked with a number of parallel transverse lines, about 20 in number. No buds were seen. Fairly common.

SYLLIS KROHNII, Ehlers. *McIntosh, Mon. Brit. Annelids*, vol. ii., p. 192. *Langerhans, Zeits. für Wiss. Zool.*, 1879, p. 529.

Five examples of this species were found amongst Corallina in a pool in the rocks which jut out from Corbyn's Head. They agreed better with the description and figures given by Langerhans than with those given by McIntosh.

The median tentacle is not shorter than the lateral one, but, as is generally the case with the Syllids, longer. The longer cirri, especially in the anterior part of the body, are also much thicker than the short ones, and somewhat club-shaped. The articulations are well marked. The colouring corresponds to that given in *Mon. Brit. Annel.*; the eyes on each side are very close together, almost touching. The bristles are exactly as described by Langerhans, the bulge just under the point of the stalk of the bristles being more pronounced than is shown in his drawing.

All the appendages are more or less speckled with opaque white spots.

TRYPANOSYLLIS ZEBRA, Grube. *McIntosh, Mon. Brit. Annel.*, vol. ii., p. 169.

This beautiful Syllid can be at once distinguished by the great proportionate breadth of the body and the markings, from which it derives its specific name.

It is fairly numerous, most of the specimens being obtained from Laminaria roots from the rocks between Babbicombe and Oddicombe beaches. No simple bristles were detected in the posterior region. It appears probable that these simple bristles in the Syllids generally only appear at certain periods, like the swimming pairs. Only one individual had a bud attached, but one free stolon was found. The number of spines varies from two to four. There are three different kinds of spines: one variety is pointed; another quite blunt at the point, looking as if it had been cut across at right angles to its length; the third variety is bent at right angles to its length at the point, forming a short hook. The segments are very short in proportion to their breadth, so that the large dorsal cirri almost touch each other.

TRYPANOSYLLIS CÆLIACA, Clpd. *de St. Joseph, Ann. des. Sci. Nat. Zool.*, 1886, p. 184.

This species, which has not been before recorded from this side of the Channel, is easily distinguished from the much larger *T. zebra* by the short tentacles, tentacular, and dorsal cirri. They have only six to ten articulations, and are all very nearly of the same length.

In life the cirri are of a most beautiful golden colour; the anterior eyes are situated on the ventral side of the head.

In most of the feet there is only one strong pointed spine, in others two. The proventriculus is very little longer than it is broad. Four or five specimens only were found; all from Oddicombe rocks.

EURYSYLLIS PARADOXA, Clpd. *de St. Joseph, Ann. Sc. Nat. Zool.*, 1886, p. 191.

Eurysyllis is easily distinguished from other Syllids by its spherical cirri; but the absence of comparatively long cirri, the sluggishness of its movements, and the fact that it is usually covered with mud, probably account for the fact that it has not before been recorded as British; de St. Joseph does not appear to have found it on the shore, but says it was common in the dredges. The Torquay specimens agreed with his description.

Examples were obtained from Oddicombe, Corbyn's Head, and Livermead, but none had buds.

AUTOLYTUS EHBIENSIS, de St. Joseph. *Ann. Sc. Nat.*, 1886, p. 228.

This is a very interesting addition to the British Fauna, on account of the excellent example it affords of the production of buds; de St. Joseph says he never found it without a bud, and I have only found two or three out of fifty or sixty examples without one.

Chains of five or six buds are common. In February, 1907, this species was found in great abundance on the *Fucus*, growing on the little breakwater at Babbacombe. The *Fucus* was covered with *Sertularia pumila*.

Two or three examples of the variety mentioned by de St. Joseph, with only twenty teeth in the proboscis, were also observed.

AUTOLYTUS PICTUS, Ehlers. *McIntosh, Mon. Brit. Annel.*, vol. ii., p. 211.

Rather common; the colour is similar to that of Pl. XLI., fig. 8, *Mon. Brit. Annel.*; but the tentacles are usually yellow instead of a madder-brown colour.

AUTOLYTUS MACROPHALMA, Marenzeller. *de St. Joseph, Ann. Sc. Nat. Zool.*, 1886, p. 226.

Two examples from Babbicombe. The teeth of the proboscis agreed

exactly with the figure given by Marenzeller. *Zur Kenntniss der Adriatischen Anneliden*, 1875.

AUTOLYTUS LONGIFERIENS, de St. Joseph. *Ann. des Sci. Nat. Zool.*, 1886, p. 217.

Five or six of this species, so remarkable for the great length (2 mm.) of the proboscis, were found. Two red eye-spots, not mentioned by St. Joseph, are situated rather a long way in front of the anterior pair of large eyes. In the Torquay examples there are only two small teeth between the large ones, instead of three, as is the case with those from Dinard.

AUTOLYTIDES INERMIS, de St. Joseph. *Ann. des Sci. Nat. Zool.*, 1886, p. 237.

One specimen was found. The proboscis was of full length, and there appears no reason to think that the absence of teeth is due to an accident.

KEY TO THE GENERA OF THE SYLLIDÆ FOUND ON THE FRENCH AND ENGLISH COASTS OF THE CHANNEL, ACCORDING TO THE CLASSIFICATION OF MALAQUIN (*Recherches sur les Syllidiens*).

VENTRAL CIRRUS PRESENT.

Palps united throughout.	{	One pair of tentacular cirri.	}	Tentacles and cirri very small, cylindrical . . . . .	. . . . .	<i>Exogone</i> , CErsted.
		Two pairs of tentacular cirri.		}	Tentacles and cirri swollen at the base and pointed . . . . .	. . . . .
Palps united at the base only. Tentacles and cirri not formed of distinct joints.	{	Proboscis straight.	}		Proboscis without any teeth . . . . .	. . . . .
				Proboscis armed with one tooth in the anterior part . . . . .	. . . . .	{ <i>Pionosyllis</i> , Malmgren (Langh. <i>emend.</i> )
				Proboscis armed with one large tooth and an incomplete crown of small teeth . . . . .	. . . . .	<i>Eusyllis</i> , Malmgren.
				Proboscis armed with teeth pointing backwards . . . . .	. . . . .	<i>Odontosyllis</i> , Clpd.
		Proboscis much curved.		}	Proboscis armed with a crown of small teeth . . . . .	. . . . .
Palps free throughout their length.	Proboscis armed with one large tooth.	}	Tooth situated in anterior part of proboscis . . . . .		. . . . .	<i>Syllis</i> , Savigny.
	Proboscis armed with one large tooth and a crown of small teeth.		}	Cirri of several articulations . . . . .	. . . . .	<i>Trypanosyllis</i> , Clpd.
				Cirri spherical of one articulation . . . . .	. . . . .	<i>Eurysyllis</i> , Ehlers.
VENTRAL CIRRUS ABSENT.						
Palps little developed, united.	{	Dorsal cirri cylindrical or threadlike.	}	Proboscis armed with a crown of teeth . . . . .	. . . . .	<i>Autolytus</i> , Grube.
				Proboscis without teeth . . . . .	. . . . .	<i>Autolytides</i> , Malaquin.
		Dorsal cirrus leaf-like.		Proboscis very long (4 mm.) . . . . .	. . . . .	<i>Myrianida</i> , Milne Edwards.

NOTE.—*Syllis cornuta* is joined at the base of the palps according to McIntosh, and *Autolytus (Sylline) rubropunctatus* has a ventral cirrus.

KEY TO THE SPECIES OF SYLLIDS FOUND ON THE FRENCH AND ENGLISH COASTS OF THE CHANNEL.

EXOgone.	No dorsal cirri on 2nd bristle-bearing segment . . . . .				{ <i>gemmifera</i> , Pagenstecher = <i>Pædophylax claviger</i> , Clpd.
SPHEROSYLLIS.	{	4 eyes. Proventriculus with 12 rows of points. Anal cirri swollen at base . . . . .			<i>hystrix</i> , Clpd.
		6 eyes. Proventriculus with 17 rows of points. Anal cirri not swollen at base . . . . .			* <i>erinaceus</i> , Clpd.
GRUBEA.	{	Dorsal cirri tapering to a sharp point . . . . .			<i>clavata</i> , Clpd.
		Dorsal cirri almost cylindrical, widest in the middle with a blunt point . . . . .			* <i>pusilla</i> , Dajardin.
SYLLIDES.		Dorsal cirri long, yellow . . . . .			<i>longocirrata</i> , (Erst.
PIONOSYLLIS.	{	Dorsal cirri of anterior segments very long (2 mm.) . . . . .			{ <i>divaricata</i> , Keferstejn = <i>longocirrata</i> , de St. Joseph.
		First pair of ventral cirri leaf-like. Dorsal cirri not very long . . . . .			<i>lamelligera</i> , de St. Joseph.
EUSYLLIS.	{	Two large glandular tubes, one on each side of proboscis. }	First pair of ventral cirri leaf-like, different in shape to other ventral cirri . . . . .		<i>lamelligera</i> , Mar. et Bob.
			First pair of ventral cirri not different to others . . . . .		<i>intermedia</i> , de St. Joseph.
		No glandular tubes. }	Terminal pieces of bristles not differing greatly in length and breadth. { Dorsal cirri tapering towards apex . . . . .		<i>tubifex</i> , Gosse.
			Terminal pieces differing. One kind short and stout, the other long and narrow . . . . .	{ Dorsal cirri cylindrical . . . . .	
ODONTOSYLLIS.	{	Teeth of proboscis few and comparatively large. }	Terminal pieces long and narrow. Length about nine times the breadth . . . . .		<i>gibba</i> , Clpd.
			Terminal pieces short and broad. Length three times breadth. { Terminal pieces with a simple hook . . . . .		<i>ctenostomata</i> , Clpd.
		Teeth, numerous and small. }	Terminal pieces with a second tooth . . . . .		<i>fulgurans</i> , Clpd.
AMBLYOSYLLIS.		Terminal pieces bidentate . . . . .			* <i>polyodonta</i> , de St. Joseph.
		13 pairs of feet. Appendages very long . . . . .			<i>lineata</i> , Grube.

\* Not yet recorded from British area.



KEY TO SPECIES—*continued.*

SYLLIS.

Simple bristles only present = sub-genus *Haflosyllis*, Langerhaus . . . . . *spongicola*, Grube = *hamata*, Clpd.

Compound bristles present in anterior and posterior regions. Simple bristles only in median = genus *Syllis* *sensu strictu*, Langerhans . . . . . *gracilis*, Grube.

Compound bristles present in all the feet.	Terminal pieces of all the bristles distinctly bidentate = genus <i>Pionosyllis</i> , McIntosh.	Dorsal cirri with more than 25 articulations. One or more simple bristles with bidentate apex in posterior portion of the body . . . . .	None of the dorsal cirri with more than 25 articulations. A simple bristle not bifid at the apex present in posterior portion of body . . . . .	} <i>prolifera</i> , Krohn.	} <i>hyalina</i> , Grube
	Terminal pieces differing very little in size = sub-genus <i>Typosyllis</i> , Langerhans.	Long and short terminal pieces mixed in all the feet . . . . .	} <i>cornuta</i> , H. Rathke.		
				Dorsal cirri equal, no opaque white spots.	On some of the feet one or two compound bristles with a simple hook a little larger than the other, and a stalk twice as thick as the others . . . . .
Dorsal cirri with 24 or more articulations. Length $1\frac{1}{2}$ inches . . . . .	Tentacles and cirri with opaque white spots. Large and small cirri alternating . . . . .	} <i>Krohni</i> , Ehlers.			
			Dorsal cirri with 10 to 12 articulations. Two lateral bars and a central bar of greyish brown on each segment . . . . .	Dorsal cirri with 9 articulations very stout . . . . .	} <i>Buskii</i> , McIntosh.
Dorsal cirri crenate rather than moniliform. Two spines with distinctly curved tips.	Dorsal cirri with 10 to 12 articulations. Two lateral bars and a central bar of greyish brown on each segment . . . . .	} <i>armillaris</i> , Müller.			
			Dorsal cirri with 9 articulations very stout . . . . .	Dorsal cirri crenate rather than moniliform. Two spines with distinctly curved tips.	} <i>brevicirrata</i> , McIntosh.
Dorsal cirri with 10 to 12 articulations. Two lateral bars and a central bar of greyish brown on each segment . . . . .	Dorsal cirri crenate rather than moniliform. Two spines with distinctly curved tips.	} <i>cucullata</i> , McIntosh.			

KEY TO SPECIES—*continued.*

TRYPANOSYLLIS.	{ Dorsal cirri, alternating long and short, with about 40 and 20 articulations respectively Tentacles and cirri, all nearly the same length, with 9 to 11 articulations	. zebra, Grube. . caliaca, Clpd.	
EURYSYLLIS.	Buccal segment distinctly visible from dorsal size.	. paradoxa, Clpd.	
AUTOLYTIDES.	Proboscis without teeth	. inermis, de St. Joseph.	
AUTOLYTUS.	{ Armature of proboscis 10 equal teeth of moderate size.	{ Dorsal cirri comparatively short. A simple bristle with a bent tip in each foot	{ prolifer, O. F. Müller.
	{ 10 very large teeth, .1 mm. long.	{ Proboscis, 2 mm. broad, 1 mm. long, almost straight	. *megadon, de St. Joseph.
	{ 16 or 20 teeth not quite equal.	{ Appendages of head and first three segments massive. Eyes very large	{ macrophthalma, Marenz.
	{ 16 small teeth equal in size.	{ Median tentacle and first pair of dorsal cirri very massive and opaque	{ *lugens, de St. Joseph.
	{ 24 unequal teeth.	{ Two transverse rows of glands on each segment	. *punctatus, de St. Joseph.
	{ 24 equal teeth.	{ An orange coloured mark on each side of the back in front	. *Edwardsi, de St. Joseph.
	{ 30 small equal teeth with short spurs at the base of the crown.	{ Colour dull grey	. ehbiensis, de St. Joseph.
	{ 30 or 34 equal teeth.	{ Four red or orange spots on each segment	. rubro-punctatus, Grube = ornatus, Mar. et Bob.
	{ 20 teeth, 10 large and 10 small.	{ Front part of the body marked with a regular pattern of brown spots	{ pictus.
	{ 10 large teeth separated by 2 or 3 small ones.	{ Pharynx very long (18 to 20 mm.)	. longiferiens, de St. Joseph.
	{ Number of teeth not known.	{ Dorsal cirri irregularly alternating long and short, the long about three times as long as the short	{ *paradoxus, de St. Joseph.
	MYRIANIDA.	Red spots on the back of segments	. pinnigera, Montagu = maculata, Clpd.

\* Not yet found in British area.