A provisional update to the identification of UK Cirratulidae

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Introduction

Ten years ago, Unicomarine circulated a preliminary key and guide to British cirratulids (Unicomarine, 2006), through the NMBAQC Scheme, with an aim to help standardise the identification and naming of cirratulids in macrofaunal samples and improve data comparability. Since that time, there have been several Scheme exercises involving cirratulids and problems remain. There has also been increased recognition of the need to publish workshop literature and to establish clearer guidelines for data standardisation. In addition, new observations have been made on cirratulids since circulation of the 1996 guide and new literature published.

This workshop document is a stage towards updates to cirratulid identification and recording protocols, due to be published in the future, through the NMBAQC Scheme. All contents are provisional and will be edited following further work and (hopefully) participant feedback, before any publication.

Cirratulid identification

The 1996 guide included an illustrated dichotomous key using anterior portion features for splits and additional information (including posterior portion features) in brackets following each species. This was to allow front-ends to be identified, as a way of ensuring maximum data comparability between samples that might have been preserved/processed differently. I would still suggest that cirratulids can be identified from front-portions but have now included all features (including identification and ecology) in a tabular form.

The contents of the table circulated here are provisional and due for a substantial rewrite before publication. It would be best for those simply processing samples to use only the update notes below, along with the 1996 key and literature references in the table. I would, however, be grateful for comments on the format of the table and suggested changes.

Cirratulid distribution and habitat preference

Notes on distribution and habitat are included in the table and also discussed below. Published distributions for cirratulids are generally inadequate, due to the need to publish taxonomic descriptions before detailed records become available. We have provided information from Unicomarine records, as well as published literature, in the table. There is also a detailed table including distribution records for different regions, using 'Um' to indicate a Unicomarine record for a particular region. Biologists from three other laboratories, with reasonable confidence in cirratulid identification have contributed to the table and their records are included with laboratory codes: Carol Milner and Lee Heaney, Scottish Environment Protection Agency (SEPA), Will Musk, Institute of Estuarine and Coastal Science, Hull (IECS) and Grant Rowe, Emu (Emu). I would be grateful for any volunteers to add to this table; I'll look at any specimens from outside the known (according to this table) distribution range and would be happy to look at other problem specimens also.

Remaining issues

The species tables include updates to nomenclature and taxonomy from recent literature, though it is clear that much remains to be resolved. The following UK cirratulid list has notes on remaining issues and any comments that may help resolve problems would be greatly appreciated. I have had much useful advice from Mary E. Petersen (MEP; mepetersen@maine.edu, Darling Marine Center, Walpole, Maine), who is currently reviewing some of the *Cirratulus* and *Dodecaceria*. Some of the bipalpate genera are under review by James Blake and Stacy Doner (ENSR, Woods Hole, Massachusetts), as well as by Susan Chambers (National Museum of Scotland).

Provisional UK cirratulid list (names in bold appeared in the 1996 guide)

Cirratulus borealis Lamarck, 1818
A northern species that could have been confused with *C. cirratus*. Its distribution is unknown but the type locality is SW Greenland (south of the Arctic Circle). A small specimen (<1 cm) that appears to be this has been taken off W Norway. Any suspected specimens (2 gills on all segments, not just the most anterior ones) would be much appreciated (MEP). Not multibranchiate but unusual in having 2 branchiae right and left) on all or nearly all segments to the end of the body (most cirratulids have 2 per segment on the anterior segments and thereafter few or none).

Cirratulus caudatus Levinsen, 1893
Missed from the Species Directory but recorded from Ireland in older literature. It seems fairly easily recognisable and is found in northern samples; it may be especially common near fish farms. MEP has drawings from Levinsen's syntypes and material from Danish waters. It is bitentaculate and may eventually change its generic position, also differing from other *Cirratulus* in lacking eyespots and having a tessellate cuticle. It can get quite large, and newly collected specimens are said to be a bright red-orange (MEP).

Cirratulus cirratus (O.F. Muller, 1776)
Has been confused with *C. incertus* and perhaps also *C. borealis* but the latter is not common in collections. The main differences from *C. incertus* are eyespot color (black, often running together; red, discrete in *C. incertus*), size and habitat (larger infaunal vs. smaller cryptofaunal), reproduction type (iteroparous, *i.e.*, adults can spawn repeatedly, with pale yellow eggs spawned in a jelly mass on stones vs. peach-colored eggs spawned by epitokes that die after spawning). There is also a difference in the shape of the prostomium: slightly more rounded in *C. cirratus*, more pointed in *C. incertus*. *C. incertus* also reproduces asexually by fragmentation, which *C. cirratus* does not; see figures of asexual regenerates in Petersen (1999). Body colour is often yellowish in *C. cirrata* but has never been seen to be so in *C. incertus*. *C. cirratus* may be less tolerant of lower salinity than *C. incertus,* as it has never been seen in Danish waters, where we (MEP) have never seen *Dodecaceria ater* either. Stephenson (1950a, b) describes the development of C. cirratus larvae and the spawning and epitoke of *C. incertus*, both of which were present in the tanks at Cullercoats (MEP).

Cirratulus incertus McIntosh, 1916
Many records of *C. cirratus* may be this species, especially in area with low salinity (see above).

***Cirratulus* "A"**
Not yet identified. Possibly juvenile.

Cirratulus sp.
There is a yellowish *Cirratulus* with red eyes that needs further work (MEP).

Cirriformia tentaculata (Montagu, 1808)
There is probably only one British Cirriformia. *C. norvegica* (Quatrefages, 1865) is a juvenile *C. tentaculata*, according to Clark (1963) but may be a *Timarete* (MEP); though we've seen a few that could be different and *C. semicincta* (Ehlers, 1905) appears in the ERMS list, possibly a Mediterranean species.

Protocirrineris chrysoderma (Claparède, 1868)
This name remains provisional for the sp found in UK estuaries: fairly short with long capillaries and a dark gut stripe. It does not fit Fauvel's description perfectly. It's listed twice in ERMS, under different genera.

Caulleriella bioculata (Keferstein, 1862)
We could be using this for several spp.; forms with hooks from 3 are found in both mud and gravel; true *C. bioculata* has bilobed pygidium but tails often missing in preserved material.

Caulleriella alata (Southern, 1914)
Easily recognisable from other taxa but possibly a complex (subtle variations seen in colour and pygidium shape). Common in gravel

Caulleriella serrata Eliason, 1962
I've never seen anything like this but it could turn up in deeper water. Not a typical *Caulleriella*. Has anyone seen this?

Caulleriella parva Gillandt, 1979
I don't think I've seen this but it could be a typical species of holdfasts or in shells bored by spionids or *Dodecaceria*; it's yellow with red eyes (MEP). Has anyone seen this?

Caulleriella viridis (Langerhans, 1880)
May include *C. flavoviridis* St.Joseph. Could be included with our *C. bioculata* records but no confirmed distribution outside Madeira. Has anyone seen this?

Caulleriella "A"
Nothing like this in literature I've seen. Known from offshore mud.

Caulleriella "B"
May be similar to Doner/Blake? (in press) sp. Very long pointed prostomium long thin body, hooks from about 10; shallow gravel; western. Has anyone seen it? – all specimens should be kept.

Chaetozone caputesocis (St.Joseph, 1894)
Moved to *Chaetozone* by Petersen (1999); name commonly used but I've seen nothing like the descriptions unless it's a juvenile *Cirratulus* with palps miscounted. Some references may have been *C. gibber* but no eyed cirratulids common on mudflats. This is a small species with very curved chaetae (MEP): Has anyone ever called anything by this name?

Chaetozone christiei Chambers, 2000
This corresponds to '**Type B**' in the 1996 guide (and Christie, 1985). Some we thought like '**Type C**' were identified as *C. christiei* by S. Chambers. This is the commonest *Chaetozone*, in shallow sediments and ubiquitous. Does anyone have definite 'Type C'?

Chaetozone gibber Woodham & Chambers, 1994
Fairly easily recognisable. It's distribution is now known to extend from the south and west coasts to Scotland and around the east coast of Scotland and south to north east England (*i.e.* everywhere except SE England North Sea coast – has anyone found it there?)

Chaetozone jubata Chambers & Woodham, 2003
A recently described deep sea species. Deep samples (>200m) have more undescribed species, not covered here.

Chaetozone setosa Malmgren, 1867
The current (Chambers, 2000) definition may still be a complex. It's found in mud at moderate depths; probably not in the south east.

Chaetozone vivipara (Christie, 1984)
Moved to *Chaetozone* by Petersen (1999). Fairly recognisable. Lives in same habitat as *Tharyx* 'Type A' (estuarine mud) but not found with it. Has anyone ever found them together? Found in Northern Ireland as well as NE England. Does anyone have access to Scottish estuarine mud cirratulids?

Chaetozone zetlandica (McIntosh, 1911)
Effectively moved back to *Chaetozone* (from *Caulleriella*) by Blake (1996). Fairly recognisable (by Chambers' paper). Ubiquitous in shallow mixed sediments and muddy sand.

***Chaetozone* "D"**
Quite distinctive; broad thoracic region; long bent capillary chaetae in front with fairly long segments; very long beaded mid body. Please note that this form often has eyes (not seen in material described for the 1996 guide. Found in northern mud samples in fairly deep water. Under investigation by S. Chambers

Tharyx acutus Webster & Benedict, 1887
No published records for UK but similar to our ***Tharyx* 'Type A'** and could be a provisional name for it; depth range given by Blake (1991) seems unlikely. 'Type A' seems restricted to estuarine mud in the south. Has anyone seen it in Scotland, or with *C. vivipara*? Would participants prefer to continue using letter type names or begin using a published name that could change?

Tharyx killariensis (Southern, 1914)
Swellings listed by Blake (1991) not always apparent; some variation in colour/shape; notopodial hooks not always present (Southern, 1914); could still be a complex. Frequent in a range of subtidal sediments.

Aphelochaeta filiformis (Keferstein, 1862)
Descriptions don't seem to fit any I've seen but *Aphelochaeta* need more attention. Mentioned in Petersen (1999): some material from northern France had the papillate pharynx extruded and otherwise in good agreement with the original description. Has anyone used this name?

Aphelochaeta glandaria Blake, 1996
This American (west coast) species is very similar to some of our 'Type A' and Blake (1996) states he's seen similar worms in northern Europe. Should we provisionally use the name?

Aphelochaeta marioni (St.Joseph, 1894)
The worm commonly called *A. marioni* in UK is almost certainly not this (*e.g.* Blake, 1996); the name may apply to one of the 'Type A' forms. However, the figures given by Hartmann-Schröder are in good agreement with a specimen identified by St. Joseph. He was probably looking at more than one species when he wrote the description, as the chaeta he shows is that of a *Monticellina*, which may have been *M. heterochaeta* (if it has blue oocytes, it probably is). The specimen that I (MEP) received for examination was a true *Aphelochaeta*, without any modified spines, so the original sample probably had more than one species. It's probably less confusing to continue with our present system until we have a definite name for the well-known worm (estuarine with a swollen tail; it can be separated by it's palps being much further forward than in 'Type A').

Aphelochaeta mcintoshi (Southern, 1914)
Similar to some 'Type A' but described as usually having proboscis everted (unusual for a cirratulid). Do you call anything by this name?

Aphelochaeta monilaris (Hartman, 1960)
A west coast American species that is similar to some *A. marioni*. McIntyre's specimens have a short, distinct "thorax" thereafter with segments rapidly becoming larger and rounder. I have not seen a complete specimen, but I suspect the species may have a slightly inflated posterior region (MEP); see Petersen (1999) Fig. 1, far right.

Aphelochaeta "A"
General term for offshore *Aphelochaeta* with palps close to chaetiger 1. There are probably several spp involved, including 'MEP nsp' below.

Aphelochaeta "B"
The taxon described in the 1996 guide as above does not now seem consistent enough to use – refer to *A. 'marioni'*.

Aphelochaeta "C"
This name should now be used for *Aphelochaeta* with eyes.

In the 1996 guide ***'Aphelochaeta' multibranchis*** (Grube, 1863) was used. However that species has spines so is not an *Aphelochaeta*. The sigmoid spines never become long and prominent; they do not develop gradually, with some capillaries slowly becoming wider and wider but appear suddenly without any transitional forms preceding them; on the lectotype, they suddenly appear on chaetiger 10, with 4 short, strongly hooked sigmoid spines appearing between the capillaries, with a capillary outer most at both ends; farther back the neuropodia have up to 6-7 (8?) spines. It is from the Adriatic. I have not seen it in any northern European material (MEP).

*Aphelochaeta "*MEP n.sp.*"*
This is a small cryptofaunal worm with large eggs found in holdfasts, found at least up to Iceland. See (Petersen, 1999 for figure); it is awaiting description.

Monticellina annulosa (Hartman, 1965)
Possibly present in UK but *M. heterochaeta* is the most likely (MEP). There might be more than 1 *Monticellina* in UK waters; some are large and dark red-brown, while others are smaller with a pale body and dark gut.

Monticellina heterochaeta Laubier, 1960
3 Atlantic *Monticellina* were combined under ***M. dorsobranchialis*** (Kirkegaard, 1959) by Blake (1991) but they are likely to be re-split (Blake, 1996). True *M. dorsobranchialis* is probably not found in the UK. M. *heterochaeta* is the most likely British sp (MEP). Should we leave them at genus for now?

Dodecaceria concharum Oersted, 1843
Gibson (1979) used the name *D. fimbriata* (Verrill, 1879) for this species but that species is probably not found in the UK (MEP). *D. caulleryi* Dehorne, 1933 is a junior synonym of *D. concharum*. This species is more tolerant of lower salinity than the following. It reproduces asexually by fragmentation (and eventually by epitokes) and has nuchal organs that are flat patches of cilia (George & Petersen 1991). Those of *D. ater* and the Mediterranean *D. saxicola* (Grube, 1863) are slit-like and easy to see under a good stereo microscope (Fig. 1 in Petersen, 1999). If you can see nuchal slits, you do not have *D. concharum,* where the nuchal organs are not conspicuous and not easy to see. There are also usually signs of asexual reproduction, which would eliminate the parthenogenetic species with the slitlike nuchal organs. Does anyone identify *Dodecaceria* with confidence?

Dodecaceria ater (Quatrfages, 1866)
This species was called *D. concharum* Oersted, 1843 by Gibson (1979). A subtidal marine species. *D. saxicola* (Grube, 1855) may be the senior synonym of *D, ater*, but until we get more information it is easier to keep them separate. It is much more difficult to re-separate species (MEP).

Dodecaceria diceria Hartman, 1951
The species conforming to the description from the North Sea may not be this (MEP).

Literature

This is not an exhaustive list but includes key references. Those given in boldface have been added since the 1996 guide. I have Petersen (1999) as a PDF, which I can email on request.

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Table 1. Distribution of cirratulids in UK waters

Region		Offshore Atlantic	Offshore North Sea	Shetland	E Scotland	NE England	SE England	Channel / SW England	Wales	NW England	W Scotland	N Ireland
Unicomarine Coverage		Poor	Poor	Poor	Poor	Moderate	Good	Moderate	Poor	Moderate	Poor	Moderate
Genus	**species**	(deeper than 200m)	(over 50km from coast)		(south from JohnOGroats)	(north from Bridlington)	(Bridlington to Dover)	(Dover to Welsh border)			(including Orkney and north coast)	
Cirratulus	*cirratus agg.*	-	Emu	-	Um,SEPA	Um	Emu,IECS	Emu	IECS	-	SEPA	Um,Emu
Cirratulus	*caudatus*	Um	Emu	Um	IECS	Emu	-	-	-	-	Um,SEPA	-
Cirratulus	" A"	-	-	-	-	-	-	-	-	-	-	-
Cirriformia	*tentaculata*	-	-	-	Um,SEPA	Um,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu	Um	Um,SEPA	Um,Emu
Protocirrineris	*chrysoderma*	-	-	-	-	-	Um	Um,Emu,IECS	-	-	-	-
Caulleriella	*bioculata*	-	Um,Emu	-	-	-	-	Um,Emu,IECS	Um,Emu	-	-	Um
Caulleriella	*alata*	-	Um,Emu	SEPA	Um,SEPA	-	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,IECS	Um,SEPA	Um,Emu
Caulleriella	*"A"*	Um	Um,Emu	-	-	-	-	-	-	-	-	Um
Caulleriella	*"B"*	-	Emu	-	-	-	-	Um,Emu	-	-	Um	-
Caulleriella	*viridis*	-	-	-	-	-	-	-	IECS?	-	-	-
Chaetozone	*zetlandica*	-	Emu	-	Um,SEPA,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um	Um,SEPA,IECS	Um,Emu
Chaetozone	*gibber*	-	-	-	Um,SEPA	Emu,IECS	-	Um,Emu,IECS	Um,Emu,IECS	-	SEPA	-
Chaetozone	*setosa*	Um	Um,Emu	-	IECS	Um,Emu,IECS	Emu,IECS	Emu,IECS	-	Um,Emu	IECS	Emu
Chaetozone	*christiei*	-	Um,Emu	-	Um,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um	-	Um
Chaetozone	*vivipara*	-	-	-	-	Um,IECS	-	-	-	-	-	Um,Emu
Chaetozone	"D"	Um	Um	-	-	-	-	-	-	-	SEPA,IECS	Um
Tharyx	*killariensis*	-	Um,Emu	SEPA	Um,SEPA,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Um	Um,SEPA,IECS	Um,Emu
Tharyx	*"A"*	-	-	-	SEPA	IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	-	-	Um
Aphelochaeta	*marioni*	-	-	-	Um,SEPA	Um	Um,Emu,IECS	Um,Emu,IECS	Um,IECS	Um	Um,SEPA	Um,Emu
Aphelochaeta	*"A"*	Um	Um,Emu	-	IECS	Um,Emu,IECS	Um,Emu,IECS	Um,Emu,IECS	Emu,IECS	Um	IECS	Um
Aphelochaeta	*"C"*	-	-	-	SEPA	-	-	Um	Um	-	SEPA	Um
Monticellina		Um	-	-	SEPA	-	-	Um,Emu,IECS	Um,Emu,IECS	Um,Emu	SEPA,IECS	Um,Emu
Dodecaceria	*concharum*	-	-	SEPA	SEPA	-	-	Emu	-	-	SEPA	-
Dodecaceria	*ater*	-	Um	-	Um,IECS	-	Um,IECS	Um,IECS	Um	Um	Um	Um

Can anyone add to this?

Table 2. Provisional UK shallow water (<200m) cirratulid list with habitat information

					Listed								
Genus	**Species**	**Authority**	**Original genus**	**Other Synonyms**	**ERMS**	**NEAT**	**SD**	**Description**	**Figure**	**Type locality**	**UK distribution**	**Habitat**	**Depth**
Cirratulus	*borealis*#	Lamarck, 1818	*Cirratulus*			NEAT				S Greenland	?	?	?
Cirratulus	*caudatus*	Levinsen, 1893	*Cirratulus*		ERMS	NEAT		McIntosh, 1923	McIntosh, 1923		northern	mud	shallow - moderate
Cirratulus	*cirratus*	(O.F. Muller, 1776)	*Cirratulus*		ERMS	NEAT	SD	Fauvel, 1927; Hartmann-Schroder, 1996	Fauvel, 1927; Hartmann-Schroder, 1996		northern	mixed substrata	intertidal - shallow
Cirratulus	*incertus*#	McIntosh, 1916	*Cirratulus*		ERMS	NEAT					?	cryptofaunal	intertidal - shallow
Cirratulus	" A"#										northern?	mixed substrata	shallow
Cirratulus	*sp*#										?	?	?
Cirriformia	*tentaculata*	(Montagu, 1808)			ERMS	NEAT	SD	Fauvel, 1927; Hartmann-Schroder, 1996	Fauvel, 1927	Devon?	ubiquitous	mixed substrata	intertidal - shallow
Protocirrineris	*chrysoderma*	(Claparede, 1868)	*Cirratulus*		ERMS*			Fauvel, 1927			southern	mud; estuarine	intertidal - shallow
Caulleriella	*bioculata*	(Keferstein, 1862)	*Heterocirrus*	*Heterocirrus bioculatus*	ERMS	NEAT	SD	Fauvel, 1927	Fauvel, 1927		southern, western	mud; mixed substrata?	shallow
Caulleriella	*alata*	(Southern, 1914)	*Chaetozone*	*Heterocirrus alatus*	ERMS	NEAT	SD	Southern, 1914; Fauvel, 1927	Southern, 1914; Fauvel, 1927	SW Ireland	ubiquitous	gravel	shallow
Caulleriella	*serrata*#	Eliason, 1962	*Caulleriella*	*Aphelochaeta*	ERMS	NEAT		Hartmann-Schroder, 1996		Skagerrak	?	mud	moderate
Caulleriella	*parva*#	Gillandt, 1979	*Caulleriella*	*C. bioculata parva*	ERMS*	NEAT		Hartmann-Schroder, 1996	Hartmann-Schroder, 1996	Germany	?	cryptofaunal	intertidal
Caulleriella	*viridis*	(Langerhans, 1880)	*Cirratulus*		ERMS					Madeira	?	cryptofaunal	intertidal - shallow
Caulleriella	*"A"*										northern, deep	mud	moderate
Caulleriella	*"B"*#											gravel	shallow
Chaetozone	*caputesocis*	(St.Joseph, 1894)	*Heterocirrus*	*Caulleriella*	ERMS	NEAT		Fauvel, 1927; Hartmann-Schroder, 1996	Fauvel, 1927; Hartmann-Schroder, 1996	N France	?	?	?
Chaetozone	*christiei*#	Chambers, 2000	*Chaetozone*					Chambers, 2000; Christie, 1985	Chambers, 2000; Christie, 1985	Northumberland	ubiquitous	sand	intertidal - shallow
Chaetozone	*gibber*	Woodham & Chambers, 1994	*Chaetozone*		ERMS	NEAT	SD	Woodham & Chambers, 1994	Woodham & Chambers, 1994	Kent	south, west, north and northeast	mud	shallow
Chaetozone	*jubata*#	Chambers & Woodham, 2003	*Chaetozone*					Chambers & Woodham, 2003	Chambers & Woodham, 2003	Faroe-Shetland Channel	northwest, deep	fine sand	deep
Chaetozone	*setosa*#	Malmgren, 1867	*Chaetozone*		ERMS	NEAT	SD	Chambers, 2000; Christie, 1985; Fauvel, 1927; Hartmann-Schroder, 1996; Blake, 1996	Chambers, 2000; Christie, 1985; Fauvel, 1927; Hartmann-Schroder, 1996; Blake, 1996	Spitzbergen	south, west, north and northeast	mud	moderate
Chaetozone	*vivipara*#	(Christie, 1984)	*Tharyx*	*Aphelochaeta*	ERMS	NEAT	SD	Christie, 1984	Christie, 1984	Northumberland	northeast England; Northern Ireland	estuarine mud, sand	intertidal - shallow
Chaetozone	*zetlandica*#	(McIntosh, 1911)	*Caulleriella*		ERMS	NEAT	SD	Woodham & Chambers, 1994; Fauvel, 1927	Woodham & Chambers, 1994; Fauvel, 1927	Shetland	ubiquitous	mud, sand	shallow
Chaetozone	"C"	[Christie, 1985]						Christie, 1985	Christie, 1985	(Northumberland)		sand?	Intertidal - shallow
Chaetozone	"D"#										northern, deep	mud	moderate
Tharyx	*killariensis*	(Southern, 1914)		*Caulleriella*	ERMS	NEAT	SD	Southern, 1914; Fauvel, 1927; Hartmann-Schroder, 1996	Southern, 1914; Fauvel, 1927; Hartmann-Schroder, 1996	Ireland	ubiquitous	mud	shallow - moderate
Tharyx	*"A" (cf acutus)*#						SD					coarse sand	intertidal - shallow
Aphelochaeta	*filiformis*	(Keferstein, 1862)	*Cirratulus*		ERMS	NEAT	SD	Fauvel, 1927	Fauvel, 1927	N. France		cryptofaunal	?
Aphelochaeta	cf *glandaria*#	Blake, 1996	*Aphelochaeta*					Blake, 1996	Blake, 1996	California	(ubiquitous)	?	
Aphelochaeta	*marioni*	(St.Joseph, 1894)	*Heterocirrus*	*Tharyx*	ERMS	NEAT	SD	StJoseph, 1894; Fauvel, 1927; Hartmann-Schroder, 1996	StJoseph, 1894; Fauvel, 1927; Hartmann-Schroder, 1996	France	southern?	mixed substrata; estuarine	intertidal - shallow
Aphelochaeta	*mcintoshi*	(Southern, 1914)		*'Cirratulus norvegicus ?'* in McIntosh	ERMS	NEAT	SD	McIntosh, 1911		Norway	?	?	?
Aphelochaeta	cf *monilaris*#	(Hartman, 1960)	*Tharyx*	*Tharyx*				Blake, 1996	Blake, 1996	California	No	?	?
'Aphelochaeta'	*multibranchiis*#	(Grube, 1863)	*Tharyx*	*Tharyx* ; a *Chaetozone* ? - MP	ERMS	NEAT	SD	Fauvel, 1927; Hartmann-Schroder, 1996	Fauvel, 1927; Hartmann-Schroder, 1996	Mediterranean?	?	?	?
Aphelochaeta	*"A"*										ubiquitous	subtidal mixed	shallow
Aphelochaeta	*"* MEP n.sp.*"*#							Petersen, 1991	Petersen, 1999, fig. 4	(Denmark)	?	cryptofaunal: holdfasts	
Monticellina	cf *annulosa*#	(Hartman, 1965)	*Tharyx*										
Monticellina	cf *heterochaeta*#	Laubier, 1960	*Monticellina*		ERMS			Laubier, 1960	Laubier, 1960	Mediterranean France	western?	mud	shallow - moderate
Dodecaceria	*concharum*	Oersted, 1843	*Dodecaceria*	*D. fimbriata* of Gibson	ERMS	NEAT	SD	Gibson, 1977; Hartmann-Schroder, 1996;	Hartmann-Schroder, 1996;		?	cryptofaunal	intertidal - shallow
Dodecaceria	*ater*	(Quatrefages, 1866)		*D. concharum* of Gibson; may = *D. saxicola*	ERMS	NEAT		Gibson, 1977			?	cryptofaunal	shallow
Dodecaceria	cf *diceria*	Hartman, 1951	*Dodecaceria*		ERMS	NEAT				Florida	?	?	moderate

 # represents taxa changed or added since previous guide

Table 3. Provisional cirratulid identification table (UK shallow water <200m)

Genus	Species	Size (mm)	Chaetigers	Prostomium	Peristomium	Mouth	'Thoracic' region	'Abdominal' region	Tail	Pygidium	Colour	Eyes	Capillary Notochaetae	Capillary Neurochaetae	Natatory chaetae	Acicular Notochaetae		Acicular Neurochaetae		Palps	1st Gills	2nd Gills	Gills end
Cirratulus	*borealis#*					excavate anteriorly						many				from mid body	short, unidentate	from mid body	short, unidentate				2 on all segments
Cirratulus	*caudatus*			blunt		excavate anteriorly	expanded	narrower than thorax	bluntly tapering			none	fairly short	fairly short	not seen			from mid body	elongate hooks with straight shafts and curved tips	1pr on ch3			ch12?
Cirratulus	*cirratus*	120x3		blunt		excavate anteriorly	almost uniform width	segments slightly longer than in thorax	bluntly tapering		yellowish in life	black, in rows that run together	fairly short	fairly short	not seen	from mid body	short, unidentate	from mid body	short, unidentate				scattered only, posteriorly
Cirratulus	*incertus#*			blunt		excavate anteriorly					whitish, blackish, greenish	red, discrete				from mid body	short, unidentate	from mid body	short, unidentate				scattered only, posteriorly
Cirratulus	*"A"#*			flattened		excavate anteriorly	uniform width	segments slightly longer than in thorax	bluntly tapering		colourless	2	fairly short	fairly short		from mid body	short, unidentate	from mid body	short, unidentate				
Cirratulus	*sp#*										yellowish in life	red, discrete											scattered only, posteriorly
Cirriformia	*tentaculata*			blunt		excavate anteriorly	uniform width	segments slightly longer than in thorax	bluntly tapering; weakly expanded		grey or yellowish	none as adult; very small in juveniles	fairly short	fairly short	not seen	from mid body	short, unidentate	from mid body	short, unidentate				
Protocirrineris	*chrysoderma*	25 x 0.5	150	bluntly conical			weakly expanded	narrower than thorax	bluntly tapering	papilla; anus ventral	brownish with dark gut	none	fairly long in thorax	fairly long in thorax		none	none	none	none	2-3 prs; ch 4-5	as palps (ch 4-5)		
Caulleriella	*bioculata*	40 x 1	140	pointed		round	almost uniform width	segments slightly longer than in thorax	tapering slightly	bilobed; elongate distally rounded lobes	dark, brownish	2	fairly short	fairly short	not seen	from mid body	curved, bifid	from ch3	curved, bifid				
Caulleriella	*alata*	12	110	pointed		round	almost uniform width	segments slightly longer than in thorax	tapering slightly	simple	purple to pale lilac; or yellowish	2	fairly short	fairly short	rare	1-3, from 21	curved, bifid; wing on posterior margin	curved, bifid; wing on posterior margin	curved, bifid	peristomium	accompany palps		
Caulleriella	*serrata#*																						
Caulleriella	*parva#*										brilliant yellow	2, small, red											
Caulleriella	*viridis*			pointed			almost uniform width	segments slightly longer than in thorax	tapering slightly	simple	green in life	2	fairly short	fairly short	not seen	from mid body	curved, bifid	from 3	curved, bifid	peristomium	alongside palps		
Caulleriella	*"A"*			pointed		round	expanded	long & thin; beaded	segments narrow slightly	bilobed; elongate distally rounded lobes	colourless?	none	fairly short	fairly short	not seen	from mid body	curved, bifid	from 4	curved, bifid				
Caulleriella	*"B"#*			very elongate - pointed	elongate	round	long & thin; almost uniform width	segments slightly longer than in thorax	?	?	pale; yellowish	2	fairly short	fairly short	not seen			from ca. 10	curved, bifid				
Chaetozone	*caputesocis*	17 x 1	95	blunt cone						conical tip		2					unidentate	from 10	unidentate				
Chaetozone	*christiei#*	12x1	110	narrowly pointed	partially divided into 3 annuli	round	widens to mid body	tapers	dorsoventrally flattened	rounded flattened leaf like lobe; anus dorsal	colourless to yellowish	none	short, recurved awl shaped in front & mid body	short, recurved awl shaped in front & mid body	2-3 times longer than capillaries, from c20 to end	alternate with capillaries; clear dorsal and ventral gaps between parapodia; from c50	unidentate	alternate with capillaries; clear dorsal and ventral gaps between parapodia; from c30	unidentate	peristomium	Per, almost alongside palps		less in mid body, absent posteriorly
Chaetozone	*gibber*	20	200	acutely pointed	partially divided into 3 annuli	round	swollen between chs 7-30 to form hump back;	segments becoming narrower and longer	bluntly tapered, dorsoventrally flattened, slightly angular cross section	small ventral lobe	colourless to yellowish	2; often faded	fine and slender on all; awl-shaped between 40-90	slender on all; awl-shaped between 40-90		alternate with capillaries; from 90/100 to end: 1-4	unidentate	alternate with capillaries; from 50/80 to end	unidentate	peristomium	1st ch, immediately post to palps		
Chaetozone	*jubata#*			pointed		round	widens to mid body	tapers	deep constrictions between segments; rounded cross section		colourless to yellowish	none	short, recurved awl shaped in front & mid body	short, recurved awl shaped in front & mid body			unidentate		unidentate				
Chaetozone	*setosa#*	20x1.5	83	narrowly pointed	partially divided into 3 annuli	round	widens to mid body	tapers	deep constrictions between segments; rounded cross section	very small, flat rounded ventral lobe; dorsal anus	colourless to yellowish	none	short, recurved awl shaped in front & mid body	short, recurved awl shaped in front & mid body	4-6 times as long as capillaries, from c20-c70	alternate with capillaries; almost continuous ring; from c50	unidentate	alternate with capillaries; almost continuous ring; from c40	unidentate	peristomium	Per, behind palps	1st ch, dorsal to notopodia	less in mid body, absent posteriorly
Chaetozone	*vivipara#*	8 x 1 mm	44	pointed	3 annuli	round	widens to mid body	very short, tapering	sharply tapering	short, round, ventral lip; dorsal anus	colourless to yellowish	None	short	short, same length as notochaetae		posteriormost chs of small specimens, alternating with capillaries	very fine	posteriormost chs of small specimens, alternating with capillaries	very fine	post edge of peri	ch 1	ch2	to end
Chaetozone	*zetlandica#*	24 x 1	154	acutely pointed	partially divided into 3 annuli	round	widens to mid body	tapers	bluntly tapered, dorsoventrally flattened, oval cross section	small ventral button-like lobe	colourless to yellowish	2; sometimes faded	slender on all; medium awl-shaped on all	medium awl-shaped on all; stout awl shaped in mid body		none	none	posteriorly	unidentate (bifid in juvs)	peristomium	1st ch, immediately post to palps	above notopodial lobes	less in bid body and post.
Chaetozone	*"C"*			Pointed		round	widens to mid body	tapers	slightly flattened dorsoventrally			None	short, recurved awl shaped in front & mid body	short, recurved awl shaped in front & mid body		alternate with capillaries; clear dorsal and ventral gaps between parapodia	unidentate	alternate with capillaries; clear dorsal and ventral gaps between parapodia	unidentate	1st ch	1st ch, alongside palps		
Chaetozone	*"D"#*			pointed		round	expanded	elongate, may be beaded	deep constrictions between segments; rounded cross section		Colourless to yellowish	2; often faded	long, recurved awl shaped in thorax	long, recurved awl shaped in thorax		alternate with capillaries; almost continuous ring	unidentate	alternate with capillaries; almost continuous ring	unidentate				

Table 3. Provisional cirratulid identification table (UK shallow water <200m)

Genus	Species	Size (mm)	Chaetigers	Prostomium	Peristomium	Mouth	'Thoracic' region	'Abdominal' region	Tail	Pygidium	Colour	Eyes	Capillary Notochaetae	Capillary Neurochaetae	Natatory chaetae	Acicular Notochaetae		Acicular Neurochaetae		Palps	1st Gills	2nd Gills	Gills end
Tharyx	*killariensis*	11	84	pointed		round	expanded; ventrolatteral swelling on posterior margin	elongate; may be beaded; rounded cross section	weakle expanded	anus dorsal, ventral lobe	brownish or pale; may have darker gut	none	become longer to rear	shorter than notochaetae; absent in far posterior		from 61; variable; may be absent	1-2 curved, bifid/knob-tipped	from 56; variable	2-3 curved, bifid/knob-tipped	peri	1st imm. post to palps, ant to ch1	above chaetae	
Tharyx	*"A" (cf acutus)#*			pointed		round	expanded; dorsa laterally flattened	narrower than thorax	expanded; dorsoventrally flattened		brownish with dark gut	none; rarely 2	fairly short	fairly short					knob-tipped				
Aphelochaeta	*filiformis*	40 x 1	150	bluntly conical	3 annuli, 2nd heart-shaped	papillate pharynx				triangular	brown/yellow or greenish live	none				none	none	none	none	1-2?; front margin of ch1	ch1		to end
Aphelochaeta	cf *glandaria#*			bluntly conical		round						none				none	none	none	none				
Aphelochaeta	*marioni*	70 x 0.8	206	bluntly conical		round	expanded	narrow, elongate	strongly expanded	5 lobes below	red/brown	none	straight, fine, as long as the width of the body	anteriorly as notochaetae, shorter & wider from 16/20		none	none	none	none	1st ch	just below palps	above ch2 notopodia	gradually reducing towards end
Aphelochaeta	*mcintoshi*	1-2inches	100	small, blunt cone		'proboscis usually protruded'	flattened	not much tapered	rounded	pouting button shaped vent						none	none	none	none	nearly opposite 1st notopodia			more than 20; traces behind
Aphelochaeta	cf *monilaris#*			bluntly conical			expanded	narrow, elongate	strongly expanded			none				none	none	none	none				
'Aphelochaeta'	*multibranchis#*	9 x 0.7	65+	bluntly conical			expanded					2						spines					curled
Aphelochaeta	*"A"*			bluntly conical		round	expanded	narrower than thorax	expanded		dark reddish brrown; may have darker gut	none	fairly long, straight	fairly long, straight		none	none	none	none				
Aphelochaeta	*"MEP n sp "#*	Small																					
Monticellina	cf *annulosa#*			bluntly conical	elongate		weakly expanded	elongate, weakly beaded	weakly expanded			none	dorsally placed; sawtoothed abdominally, especially mid body	dorsally placed; sawtoothed abdominally, especially mid body			none	none	none		ant edge of ch1		in slope of groove
Monticellina	cf *heterochaeta#*			bluntly conical	elongate	round	weakly expanded; dorsal groove	elongate, weakly beaded	weakly expanded		dark reddish brrown; may have darker gut	none	dorsally placed; sawtoothed abdominally, especially mid body	dorsally placed; sawtoothed abdominally, especially mid body			none	none	none		ant edge of ch1		in slope of groove
Dodecaceria	*concharum*			blunt			weakly expanded	short	short										spoon-shaped		thick, fewer than 8 pairs	thick, fewer than 8 pairs	thick, fewer than 8 pairs
Dodecaceria	*ater*			blunt			weakly expanded	short	short		dark reddish brrown								spoon-shaped		thick, fewer than 8 pairs	thick, fewer than 8 pairs	thick, fewer than 8 pairs
Dodecaceria	cf *diceria*			blunt				short	short										spoon-shaped		thick, fewer than 8 pairs	thick, fewer than 8 pairs	thick, fewer than 8 pairs

 # represents taxa changed or added since previous guide