

The National Marine Biological
Analytical Quality Control Scheme
www.nmbaqcs.org

Ring Test Bulletin 46

Year 20 (2013/2014)

Authors: Tony Freeston, Ruth Barnich & Carsten Wolff
Reviewed by: Adam Procter
Approved by: Richard Arnold

Contact: Ruth Barnich
ruth.barnich@unicomarine.com

Thomson Unicomarine Ltd.
Date of Issue: October 2014

thomson
unicomarine

RING TEST 46 DETAILS

Type/Contents:	General
Circulated:	03/02/2014
Completion Date:	04/04/2014
Number of Subscribing Laboratories:	21
Number of Participating Laboratories:	20
Number of Results Received:	24 (multiple data entries per laboratory permitted)

General remarks

An additional terminal character has been added within each LabCode (small case sequential letters) to permit multiple data entries from each laboratory, *i.e.* two participants from laboratory 01 would be coded as Lab2001a & Lab2001b. For details of your LabCode please contact your Scheme representative or Thomson Unicmarine Ltd.

SUMMARY OF DIFFERENCES PER SPECIMEN

(For details see Table 1)

Specimen	Genus	Species	Total differences for 24 returns	
			Genus	Species
RT4601	<i>Lepidonotus</i>	<i>squamatus</i>	0	0
RT4602	<i>Gattyana</i>	<i>cirrhusa</i>	2	4
RT4603	<i>Malmgrenia</i>	<i>andreaopolis</i>	1	11
RT4604	<i>Nymphon</i>	<i>brevirostre</i>	0	3
RT4605	<i>Endeis</i>	<i>spinosa</i>	0	4
RT4606	<i>Anoplodactylus</i>	<i>petiolatus</i>	1	1
RT4607	<i>Mytilus</i>	<i>edulis</i>	0	0
RT4608	<i>Abra</i>	<i>tenuis</i>	0	0
RT4609	<i>Nucella</i>	<i>lapillus</i>	3	3
RT4610	<i>Modiolus</i>	<i>modiolus</i>	2	4
RT4611	<i>Musculus</i>	<i>subpictus</i>	0	1
RT4612	<i>Crenella</i>	<i>decussata</i>	0	0
RT4613	<i>Magelona</i>	<i>johnstoni</i>	0	2
RT4614	<i>Owenia</i>	<i>borealis</i> (*)	-	-
RT4615	<i>Lysianassa</i>	<i>ceratina</i>	0	0
RT4616	<i>Socarnes</i>	<i>erythrophthalmus</i>	2	2
RT4617	<i>Perrierella</i>	<i>audouiniana</i>	0	0
RT4618	<i>Lembos</i>	<i>websteri</i>	3	4
RT4619	<i>Aora</i>	<i>gracilis</i>	0	8
RT4620	<i>Polygordius</i>	sp.	1	1
RT4621	<i>Antedon</i>	<i>bifida</i>	0	2
RT4622	<i>Spirobranchus</i>	<i>lamarcki</i>	0	1
RT4623	<i>Eclysippe</i>	<i>vanelli</i>	7	7
RT4624	<i>Acrocrida</i>	<i>brachiata</i>	5	5
RT4625	<i>Ophiura</i>	<i>ophiura</i>	0	0
Total differences			27	63
Average diff. / data return			1.1	2.6

*: results not rated for the purpose of this ring test

Table 1. Identifications made by participating laboratories for RT 46 (arranged by specimen). Names are given only where different from AQC identification.

	RT4601 <i>Lepidonotus squamatus</i>	RT4602 <i>Gattyana cirrhosa</i>	RT4603 <i>Malmgrenia andreapolis</i>	RT4604 <i>Nymphon brevistrore</i>	RT4605 <i>Endeis spinosa</i>	RT4606 <i>Anoplodactylus petiolatus</i>
LB2002	--	-	- lunulata	--	--	--
LB2004	--	--	--	--	--	--
LB2005	--	--	- arenicolae	--	--	--
LB2007	--	--	--	--	--	--
LB2008a	--	--	--	--	--	--
LB2008b	--	--	--	--	--	--
LB2019	--	--	- darbouxii	--	- charybdaea	--
LB2026a	--	--	- arenicolae	--	--	--
LB2026b	--	- nutti	- arenicolae	- brevistarse	--	--
LB2027	--	--	- arenicolae	--	--	--
LB2029	--	--	- arenicolae	--	--	--
LB2031	--	--	--	--	--	--
LB2032a	--	--	--	--	- charybdaea	--
LB2032b	--	--	--	--	- charybdaea	--
LB2032c	--	--	--	--	- charybdaea	--
LB2033	--	Harmothoe impar	- arenicolae	--	--	--
LB2034	--	- nutti	--	--	--	--
LB2053	--	--	- darbouxii	- gracile	--	--
LB2054	--	--	--	--	--	--
LB2058	--	--	- marphysae	--	--	--
LB2060	--	--	--	--	--	--
LB2061	--	--	--	--	--	--
LB2062	--	--	--	--	--	--
LB2068	--	Lepidonotus squamatus	Harmothoe viridis	- brevistarse	--	Nymphon laterospinum

Identifications in brackets not counted as differences, see comments.

Table 1. Identifications made by participating laboratories for RT 46 (arranged by specimen). Names are given only where different from AQC identification (continued).

	RT4607 <i>Mytilus edulis</i>	RT4608 <i>Abra tenuis</i>	RT4609 <i>Nucella lapillus</i>	RT4610 <i>Modiolus modiolus</i>	RT4611 <i>Musculus subpictus</i>
LB2002	--	--	--	Modiolula phaseolina	- costulatus
LB2004	--	--	--	--	--
LB2005	--	--	--	--	--
LB2007	--	--	--	--	--
LB2008a	--	--	--	--	--
LB2008b	--	--	--	--	--
LB2019	--	--	--	--	--
LB2026a	--	--	--	--	--
LB2026b	--	--	--	--	--
LB2027	--	--	--	--	[Modiolarca tumida]
LB2029	--	--	--	--	[Modiolarca] -
LB2031	--	--	--	--	--
LB2032a	--	--	--	--	--
LB2032b	--	--	--	--	--
LB2032c	--	--	--	- barbatus	--
LB2033	--	--	--	--	--
LB2034	--	--	--	--	--
LB2053	--	--	Neptunea antiqua	--	--
LB2054	--	--	--	--	--
LB2058	--	--	Gastropoda	Mytilidae	--
LB2060	--	--	--	- barbatus	--
LB2061	--	--	Neptunea antiqua	--	--
LB2062	--	--	--	--	--
LB2068	--	--	--	--	[Modiolarca tumida]

Identifications in brackets not counted as differences, see comments.

Table 1. Identifications made by participating laboratories for RT 46 (arranged by specimen). Names are given only where different from AQC identification (continued).

	RT4612 <i>Crenella decussata</i>	RT4613 <i>Magelona johnstoni</i>	RT4614 <i>Owenia borealis</i>	RT4615 <i>Lysianassa ceratina</i>	RT4616 <i>Socarnes erythrophthalmus</i>
LB2002	--	--	- [fusiformis]	--	--
LB2004	--	--	- [fusiformis]	--	--
LB2005	--	- mirabilis	- [fusiformis]	--	Tryphosella nanoides
LB2007	--	--	- [fusiformis]	--	--
LB2008a	--	--	- [fusiformis]	--	--
LB2008b	--	--	- [fusiformis]	--	--
LB2019	--	--	- [fusiformis]	--	--
LB2026a	--	--	- [fusiformis]	--	--
LB2026b	--	--	- [borealis]	--	--
LB2027	--	- mirabilis	- [fusiformis]	--	--
LB2029	--	--	- [fusiformis]	--	Lysianassa ceratina
LB2031	--	--	- [fusiformis]	--	--
LB2032a	--	--	- [fusiformis]	--	--
LB2032b	--	--	- [fusiformis]	--	--
LB2032c	--	--	- [fusiformis]	--	--
LB2033	--	--	- [fusiformis]	--	--
LB2034	--	--	- [fusiformis]	--	--
LB2053	--	--	- [fusiformis]	--	--
LB2054	--	--	- [fusiformis]	--	--
LB2058	--	--	- [fusiformis]	--	--
LB2060	--	--	- [fusiformis]	--	--
LB2061	--	--	- [fusiformis]	--	--
LB2062	--	--	- [fusiformis]	--	--
LB2068	--	--	- [fusiformis]	--	--

Identifications in brackets not counted as differences, see comments.

Table 1. Identifications made by participating laboratories for RT 46 (arranged by specimen). Names are given only where different from AQC identification (continued).

	RT4617 <i>Perrierella audouiniana</i>	RT4618 <i>Lembos websteri</i>	RT4619 <i>Aora gracilis</i>	RT4620 <i>Polygordius</i> sp.	RT4621 <i>Antedon bifida</i>
LB2002	--	--	--	- [appendiculatus/lacteus]	--
LB2004	--	--	--	- [lacteus]	--
LB2005	--	--	--	Sclerolinum brattstromi	--
LB2007	--	--	- typica	- [lacteus]	--
LB2008a	--	--	--	- [appendiculatus]	--
LB2008b	--	Autonoe longipes	--	- [appendiculatus]	--
LB2019	--	--	- typica	- [lacteus]	--
LB2026a	--	--	--	- [lacteus]	--
LB2026b	--	--	--	- [villoti]	--
LB2027	--	--	--	- [lacteus]	--
LB2029	--	--	--	- [lacteus]	--
LB2031	--	--	--	- [lacteus]	--
LB2032a	--	--	- typica	- [lacteus]	--
LB2032b	--	--	- typica	- [lacteus]	--
LB2032c	--	--	- typica	- [lacteus]	--
LB2033	--	--	--	- [appendiculatus]	--
LB2034	--	Autonoe longipes	--	- [appendiculatus]	--
LB2053	--	Autonoe longipes	--	- [lacteus]	- petasus
LB2054	--	--	--	- [lacteus]	--
LB2058	--	--	- typica	- [lacteus]	--
LB2060	--	--	--	- [lacteus]	--
LB2061	--	--	- typica	- [lacteus]	--
LB2062	--	--	--	- [lacteus]	--
LB2068	--	- longipes	- typica	- [lacteus]	- petasus

Identifications in brackets not counted as differences, see comments.

Table 1. Identifications made by participating laboratories for RT 46 (arranged by specimen). Names are given only where different from AQC identification (continued).

	RT4622 <i>Spirobranchus lamarcki</i>	RT4623 <i>Eclysippe vanelli</i>	RT4624 <i>Acrocnida brachiata</i>	RT4625 <i>Ophiura ophiura</i>
LB2002	--	[Pterolysippe] -	--	--
LB2004	--	[Pterolysippe] -	--	--
LB2005	--	[Pterolysippe] -	--	--
LB2007	--	[Pterolysippe] -	--	--
LB2008a	--	[Pterolysippe] -	--	--
LB2008b	--	[Pterolysippe] -	--	--
LB2019	--	[Pterolysippe] -	--	--
LB2026a	--	[Pterolysippe] -	--	--
LB2026b	--	[Pterolysippe] -	--	--
LB2027	- triqueter	--	--	--
LB2029	[Pomatoceros] -	Anobothrus gracilis	--	--
LB2031	--	[Pterolysippe] -	--	--
LB2032a	--	Ampharete finmarchica	Amphiura chiajei	--
LB2032b	--	Ampharete falcata	--	--
LB2032c	--	Ampharete finmarchica	Amphiura chiajei	--
LB2033	--	Amphicteis gunneri	Amphiura chiajei	--
LB2034	--	Anobothrus gracilis	--	--
LB2053	--	[Pterolysippe] -	--	--
LB2054	--	[Pterolysippe] -	--	--
LB2058	--	--	--	--
LB2060	--	[Pterolysippe] -	--	--
LB2061	[Pomatoceros] -	[Pterolysippe] -	Amphiura chiajei	--
LB2062	--	--	--	--
LB2068	[Pomatoceros] -	Ampharete baltica	Amphiura chiajei	--

Identifications in brackets not counted as differences, see comments.

SUMMARY OF DIFFERENCES PER PARTICIPATING LABORATORY
(For details see Table 2)

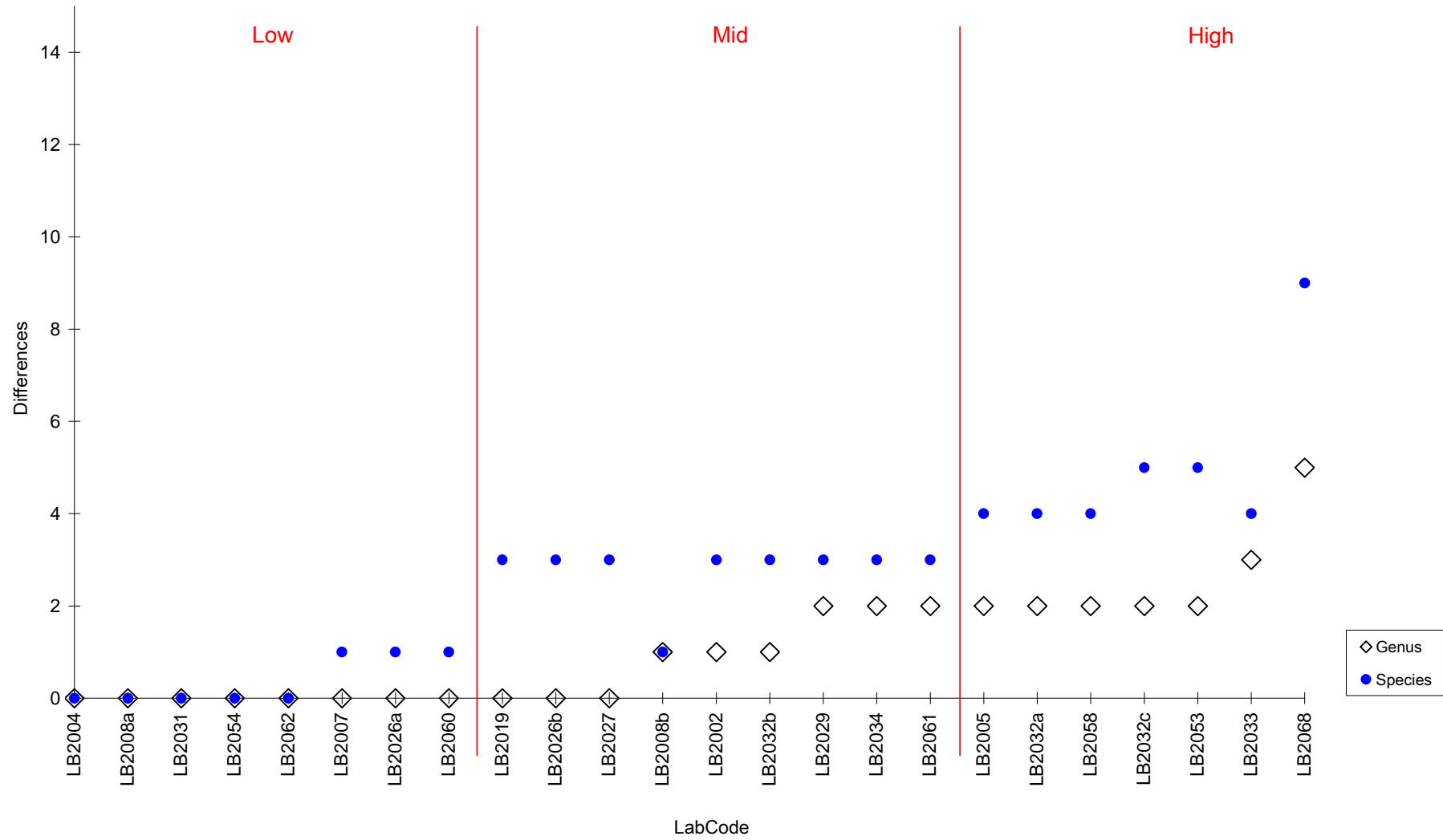


Table 2. Identifications made by participating laboratories for RT 46 (arranged by participants). Names are given only where different from AQC identification.

Taxon	LB2002	LB2004	LB2005	LB2007	LB2008a
RT4601 <i>Lepidonotus squamatus</i>	--	--	--	--	--
RT4602 <i>Gattyana cirrhosa</i>	--	--	--	--	--
RT4603 <i>Malmgrenia andreapolis</i>	- lunulata	--	- arenicolae	--	--
RT4604 <i>Nymphon brevirostre</i>	--	--	--	--	--
RT4605 <i>Endeis spinosa</i>	--	--	--	--	--
RT4606 <i>Anoplodactylus petiolatus</i>	--	--	--	--	--
RT4607 <i>Mytilus edulis</i>	--	--	--	--	--
RT4608 <i>Abra tenuis</i>	--	--	--	--	--
RT4609 <i>Nucella lapillus</i>	--	--	--	--	--
RT4610 <i>Modiolus modiolus</i>	Modiolula phaseolina	--	--	--	--
RT4611 <i>Musculus subpictus</i>	- costulatus	--	--	--	--
RT4612 <i>Crenella decussata</i>	--	--	--	--	--
RT4613 <i>Magelona johnstoni</i>	--	--	- mirabilis	--	--
RT4614 <i>Owenia borealis</i>	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]
RT4615 <i>Lysianassa ceratina</i>	--	--	--	--	--
RT4616 <i>Socarnes erythrophthalmus</i>	--	--	Tryphosella nanoides	--	--
RT4617 <i>Perrierella audouiniana</i>	--	--	--	--	--
RT4618 <i>Lembos websteri</i>	--	--	--	--	--
RT4619 <i>Aora gracilis</i>	--	--	--	- typica	--
RT4620 <i>Polygordius</i> sp.	- [appendiculatus/lacteus]	- [lacteus]	Sclerolinum brattstromi	- [lacteus]	- [appendiculatus]
RT4621 <i>Antedon bifida</i>	--	--	--	--	--
RT4622 <i>Spirobranchus lamarcki</i>	--	--	--	--	--
RT4623 <i>Eclysippe vanelli</i>	[Pterolysippe] -	[Pterolysippe] -	[Pterolysippe] -	[Pterolysippe] -	[Pterolysippe] -
RT4624 <i>Acrocnida brachiata</i>	--	--	--	--	--
RT4625 <i>Ophiura ophiura</i>	--	--	--	--	--

Identifications in brackets not counted as differences, see comments.

Table 2. Identifications made by participating laboratories for RT 44 (arranged by participants). Names are given only where different from AQC identification (continued).

Taxon	LB2008b	LB2019	LB2026a	LB2026b	LB2027
RT4601 <i>Lepidonotus squamatus</i>	--	--	--	--	--
RT4602 <i>Gattyana cirrhosa</i>	--	--	--	- nutti	--
RT4603 <i>Malmgrenia andreapolis</i>	--	- darbouxi	- arenicolae	- arenicolae	- arenicolae
RT4604 <i>Nymphon brevirostre</i>	--	--	--	- brevitarse	--
RT4605 <i>Endeis spinosa</i>	--	- charybdaea	--	--	--
RT4606 <i>Anoplodactylus petiolatus</i>	--	--	--	--	--
RT4607 <i>Mytilus edulis</i>	--	--	--	--	--
RT4608 <i>Abra tenuis</i>	--	--	--	--	--
RT4609 <i>Nucella lapillus</i>	--	--	--	--	--
RT4610 <i>Modiolus modiolus</i>	--	--	--	--	--
RT4611 <i>Musculus subpictus</i>	--	--	--	--	[Modiolarca tumida]
RT4612 <i>Crenella decussata</i>	--	--	--	--	--
RT4613 <i>Magelona johnstoni</i>	--	--	--	--	- mirabilis
RT4614 <i>Owenia borealis</i>	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [borealis]	- [fusiformis]
RT4615 <i>Lysianassa ceratina</i>	--	--	--	--	--
RT4616 <i>Socarnes erythrophthalmus</i>	--	--	--	--	--
RT4617 <i>Perrierella audouiniana</i>	--	--	--	--	--
RT4618 <i>Lembos websteri</i>	Autonoe longipes	--	--	--	--
RT4619 <i>Aora gracilis</i>	--	- typica	--	--	--
RT4620 <i>Polygordius sp.</i>	- [appendiculatus]	- [lacteus]	- [lacteus]	- [villoti]	- [lacteus]
RT4621 <i>Antedon bifida</i>	--	--	--	--	--
RT4622 <i>Spirobranchus lamarcki</i>	--	--	--	--	- triqueter
RT4623 <i>Eclysippe vanelli</i>	[Pterolysippe] -	[Pterolysippe] -	[Pterolysippe] -	[Pterolysippe] -	--
RT4624 <i>Acrocnida brachiata</i>	--	--	--	--	--
RT4625 <i>Ophiura ophiura</i>	--	--	--	--	--

Identifications in brackets not counted as differences, see comments.

Table 2. Identifications made by participating laboratories for RT 44 (arranged by participants). Names are given only where different from AQC identification (continued).

Taxon	LB2029	LB2031	LB2032a	LB2032b	LB2032c
RT4601 <i>Lepidonotus squamatus</i>	--	--	--	--	--
RT4602 <i>Gattyana cirrhosa</i>	--	--	--	--	--
RT4603 <i>Malmgrenia andreapolis</i>	- arenicolae	--	--	--	--
RT4604 <i>Nymphon brevirostre</i>	--	--	--	--	--
RT4605 <i>Endeis spinosa</i>	--	--	- charybdaea	- charybdaea	- charybdaea
RT4606 <i>Anoplodactylus petiolatus</i>	--	--	--	--	--
RT4607 <i>Mytilus edulis</i>	--	--	--	--	--
RT4608 <i>Abra tenuis</i>	--	--	--	--	--
RT4609 <i>Nucella lapillus</i>	--	--	--	--	--
RT4610 <i>Modiolus modiolus</i>	--	--	--	--	- barbatus
RT4611 <i>Musculus subpictus</i>	[Modiolarca] -	--	--	--	--
RT4612 <i>Crenella decussata</i>	--	--	--	--	--
RT4613 <i>Magelona johnstoni</i>	--	--	--	--	--
RT4614 <i>Owenia borealis</i>	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]
RT4615 <i>Lysianassa ceratina</i>	--	--	--	--	--
RT4616 <i>Socarnes erythrophthalmus</i>	Lysianassa ceratina	--	--	--	--
RT4617 <i>Perrierella audouiniana</i>	--	--	--	--	--
RT4618 <i>Lembos websteri</i>	--	--	--	--	--
RT4619 <i>Aora gracilis</i>	--	--	- typica	- typica	- typica
RT4620 <i>Polygordius sp.</i>	- [lacteus]	- [lacteus]	- [lacteus]	- [lacteus]	- [lacteus]
RT4621 <i>Antedon bifida</i>	--	--	--	--	--
RT4622 <i>Spirobranchus lamarcki</i>	[Pomatoceros] -	--	--	--	--
RT4623 <i>Eclysippe vanelli</i>	Anobothrus gracilis	[Pterolysippe] -	Ampharete finmarchica	Ampharete falcata	Ampharete finmarchica
RT4624 <i>Acrocnida brachiata</i>	--	--	Amphiura chiajei	--	Amphiura chiajei
RT4625 <i>Ophiura ophiura</i>	--	--	--	--	--

Identifications in brackets not counted as differences, see comments.

Table 2. Identifications made by participating laboratories for RT 44 (arranged by participants). Names are given only where different from AQC identification (continued).

Taxon	LB2033	LB2034	LB2053	LB2054	LB2058
RT4601 <i>Lepidonotus squamatus</i>	--	--	--	--	--
RT4602 <i>Gatt yana cirrhosa</i>	Harmothoe impar	- nutti	--	--	--
RT4603 <i>Malmgrenia andreapolis</i>	- arenicolae	--	- darbouxi	--	- marphysae
RT4604 <i>Nymphon brevirostre</i>	--	--	- gracile	--	--
RT4605 <i>Endeis spinosa</i>	--	--	--	--	--
RT4606 <i>Anoplodactylus petiolatus</i>	--	--	--	--	--
RT4607 <i>Mytilus edulis</i>	--	--	--	--	--
RT4608 <i>Abra tenuis</i>	--	--	--	--	--
RT4609 <i>Nucella lapillus</i>	--	--	Neptunea antiqua	--	Gastropoda
RT4610 <i>Modiolus modiolus</i>	--	--	--	--	Mytilidae
RT4611 <i>Musculus subpictus</i>	--	--	--	--	--
RT4612 <i>Crenella decussata</i>	--	--	--	--	--
RT4613 <i>Magelona johnstoni</i>	--	--	--	--	--
RT4614 <i>Owenia borealis</i>	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]
RT4615 <i>Lysianassa ceratina</i>	--	--	--	--	--
RT4616 <i>Socarnes erythrophthalmus</i>	--	--	--	--	--
RT4617 <i>Perrierella audouiniana</i>	--	--	--	--	--
RT4618 <i>Lembos websteri</i>	--	Autonoe longipes	Autonoe longipes	--	--
RT4619 <i>Aora gracilis</i>	--	--	--	--	- typica
RT4620 <i>Polygordius sp.</i>	- [appendiculatus]	- [appendiculatus]	- [lacteus]	- [lacteus]	- [lacteus]
RT4621 <i>Antedon bifida</i>	--	--	- petasus	--	--
RT4622 <i>Spirobranchus lamarcki</i>	--	--	--	--	--
RT4623 <i>Eclysippe vanelli</i>	Amphicteis gunneri	Anobothrus gracilis	[Pterolysippe] -	[Pterolysippe] -	--
RT4624 <i>Acrocnida brachiata</i>	Amphiura chiajei	--	--	--	--
RT4625 <i>Ophiura ophiura</i>	--	--	--	--	--

Identifications in brackets not counted as differences, see comments.

Table 2. Identifications made by participating laboratories for RT 44 (arranged by participants). Names are given only where different from AQC identification (continued).

	Taxon	LB2060	LB2061	LB2062	LB2068
RT4601	<i>Lepidonotus squamatus</i>	--	--	--	--
RT4602	<i>Gattyana cirrhosa</i>	--	--	--	<i>Lepidonotus squamatus</i>
RT4603	<i>Malmgrenia andreapolis</i>	--	--	--	<i>Harmothoe viridis</i>
RT4604	<i>Nymphon brevirostre</i>	--	--	--	- brevitarse
RT4605	<i>Endeis spinosa</i>	--	--	--	--
RT4606	<i>Anoplodactylus petiolatus</i>	--	--	--	<i>Nymphon laterospinum</i>
RT4607	<i>Mytilus edulis</i>	--	--	--	--
RT4608	<i>Abra tenuis</i>	--	--	--	--
RT4609	<i>Nucella lapillus</i>	--	<i>Neptunea antiqua</i>	--	--
RT4610	<i>Modiolus modiolus</i>	- barbatus	--	--	--
RT4611	<i>Musculus subpictus</i>	--	--	--	[<i>Modiolarca tumida</i>]
RT4612	<i>Crenella decussata</i>	--	--	--	--
RT4613	<i>Magelona johnstoni</i>	--	--	--	--
RT4614	<i>Owenia borealis</i>	- [fusiformis]	- [fusiformis]	- [fusiformis]	- [fusiformis]
RT4615	<i>Lysianassa ceratina</i>	--	--	--	--
RT4616	<i>Socarnes erythrophthalmus</i>	--	--	--	--
RT4617	<i>Perrierella audouiniana</i>	--	--	--	--
RT4618	<i>Lembos websteri</i>	--	--	--	- longipes
RT4619	<i>Aora gracilis</i>	--	- typica	--	- typica
RT4620	<i>Polygordius sp.</i>	- [lacteus]	- [lacteus]	- [lacteus]	- [lacteus]
RT4621	<i>Antedon bifida</i>	--	--	--	- petasus
RT4622	<i>Spirobranchus lamarcki</i>	--	[<i>Pomatoceros</i>] -	--	[<i>Pomatoceros</i>] -
RT4623	<i>Eclysippe vanelli</i>	[<i>Pterolysippe</i>] -	[<i>Pterolysippe</i>] -	--	<i>Amparete baltica</i>
RT4624	<i>Acrocnida brachiata</i>	--	<i>Amphiura chiajei</i>	--	<i>Amphiura chiajei</i>
RT4625	<i>Ophiura ophiura</i>	--	--	--	--

Identifications in brackets not counted as differences, see comments.

RESULTS & DISCUSSION

RT4601 *Lepidonotus squamatus* (Linnaeus, 1758) (Figs. 1A,B) (cf. Barnich 2011)

Substrate: Gravel. Salinity: Full. Depth: Circalittoral. Locality: Wash. Condition: Good.



Fig. 1A. *Lepidonotus squamatus* (dorsal view)

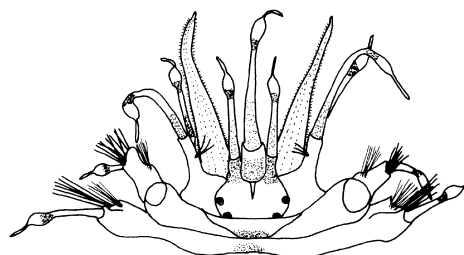


Fig. 1B. *L. squamatus*, prostomium with terminally inserted lateral antennae (cf. Barnich 2011)

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

RT4602 *Gattyana cirrhosa* (Pallas, 1766) (Figs. 2A-C) (cf. Barnich 2011; Pettibone 1963)

Substrate: Mixed. Salinity: Full. Depth: Infralittoral. Locality: Thames. Condition: Good.



Fig. 2A. *Gattyana cirrhosa* (anterior end, dorsal view)

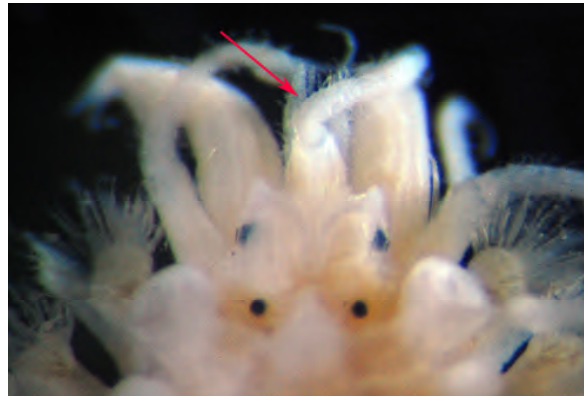


Fig. 2B. *G. cirrhosa*, prostomium with ventrally inserted lateral antennae (arrow)

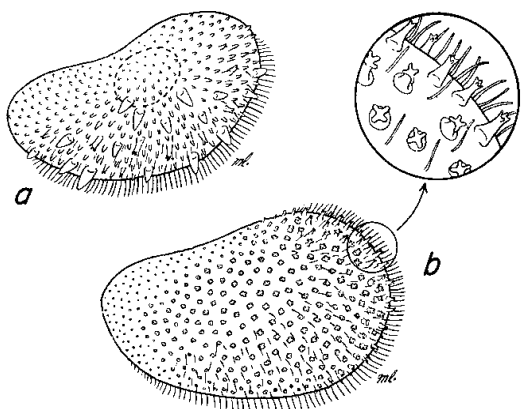


Fig. 2C. Elytra of *G. nutti* (a) & *G. cirrhosa* (b) (cf. Pettibone 1963)

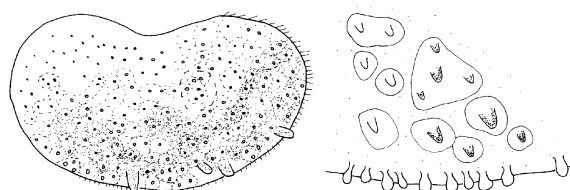


Fig. 3. *Harmothoe impar*, elytron and microtubercles (cf. Barnich 2011)

Labs 2026b and 2034 identified as *Gattyana nutti*.

In *Gattyana nutti* the elytra are covered with entire to bifid microtubercles and conical macrotubercles are present in the posterior half of the elytron (Fig. 2C).

In *Gattyana cirrhosa* the elytra are covered with multifid microtubercles only (Fig. 2C).

Lab 2033 identified as *Harmothoe impar*.

Elytra of *Harmothoe impar* usually have conical microtubercles grouped on mounds, although some might occur singly (Fig. 3). All notochaetae are stout with blunt tips.

Gattyana cirrhosa has two types of notochaetae, some with capillary tips and some with blunt tips. The microtubercles have multifid tips and are never grouped on mounds (Fig. 2C).

Lab 2068 identified as *Lepidonotus squamatus*.

Lepidonotus squamatus has lateral antennae inserted terminally on the prostomium; there are no cephalic peaks (Fig. 1B). The elytra are covered by large and small conical tubercles.

Gattyana cirrhosa has lateral antennae inserted ventrally and the prostomium is bilobed with cephalic peaks (Fig. 2B). The elytra are covered by multifid microtubercles.

Total number of differences: 2 generic and 4 specific.

RT4603 *Malmgrenia andreapolis* McIntosh, 1874 (Figs. 4A-C) (cf. Barnich 2011, Barnich & Fiege 2001)

Substrate: Muddy sand. Salinity: Full. Depth: Infralittoral. Locality: Plymouth. Condition: Good.



Fig. 4A. *Malmgrenia andreapolis* (anterior end, dorsal view)

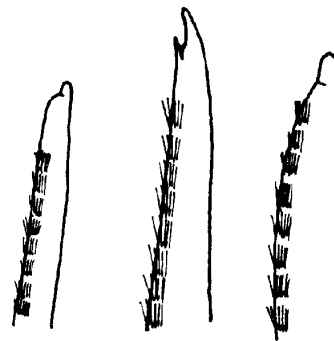


Fig. 4B. Upper, middle & lower neurochaetae of *M. andreapolis* (cf. Barnich 2011)

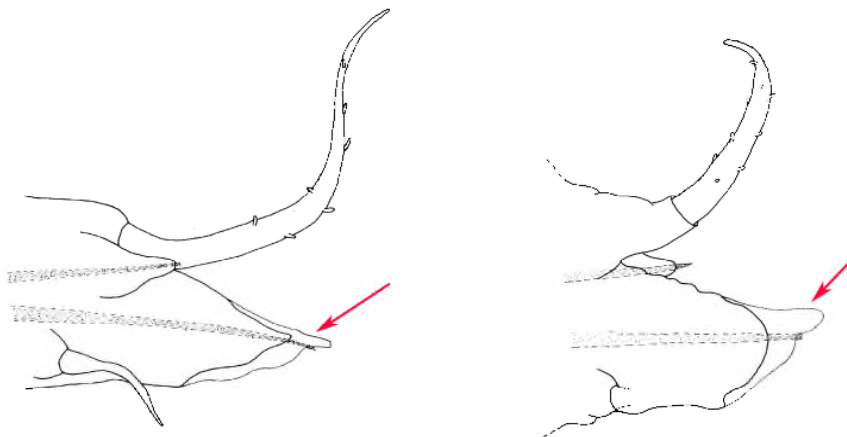


Fig. 4C. *Malmgrenia lunulata* (left) & *M. andreapolis* (right), neuropodia with supra-acicular process (see arrows) (cf. Barnich & Fiege 2001)

Lab 2002 identified as *Malmgrenia lunulata*.

Malmgrenia lunulata has a small, digitiform supra-acicular process (Fig. 4C, left).

Malmgrenia andreapolis has a wide bulbous or subconical supra-acicular process (Fig. 4C, right)

Labs 2005, 2026a, 2026b, 2027, 2029, and 2033 identified as *Malmgrenia arenicolae*.

Malmgrenia arenicolae has neurochaetae which are usually all bidentate and the tips are pointed.

Malmgrenia andreapolis has neurochaetae which are uni- and bidentate and the tips of the upper and lower neurochaetae are often knob-like (Fig. 4B).

Labs 2019 and 2053 identified as *Malmgrenia darbouxi*.

In *Malmgrenia darbouxi* the short and long notochaetae with two kinds of tips: long, tapering to slender pointed tips and short, stout with blunt tip.

Malmgrenia andreapolis has exclusively stout notochaetae with blunt tips.

Lab 2058 identified as *Malmgrenia marphysae*.

In *Malmgrenia marphysae* the neuropodial supra-acicular process is absent.

Malmgrenia andreapolis has a wide, bulbous neuropodial supra-acicular process.

Lab 2068 identified as *Harmothoe viridis*.

Harmothoe viridis shows cephalic peaks and the lateral antennae are inserted ventrally, which are diagnostic characters of the genus *Harmothoe*.

Malmgrenia andreapolis has no cephalic peaks and the lateral antennae are inserted terminoventrally which are diagnostic characters of the genus *Malmgrenia*.

Total number of differences: 1 generic and 11 specific.

RT4604 *Nymphon brevisrostre* Hodge, 1863 (Figs. 5 & 6A) (cf. Bamber 2010)

Substrate: Mixed. Salinity: Full. Depth: Infralittoral. Locality: Isle of Man. Condition: Good.

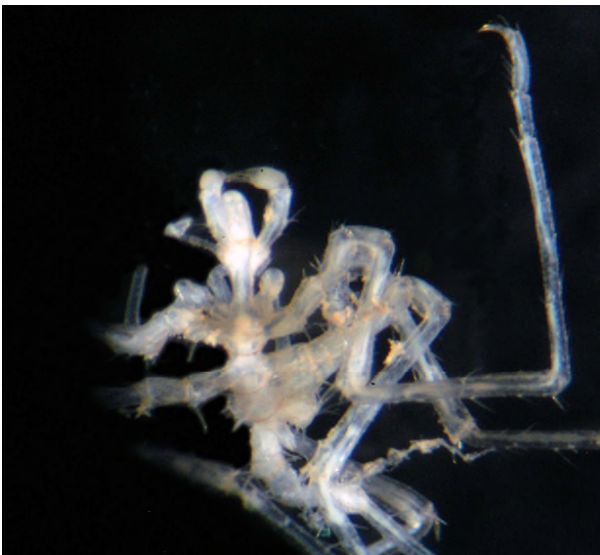


Fig. 5. *Nymphon brevisrostre* (dorsal view)

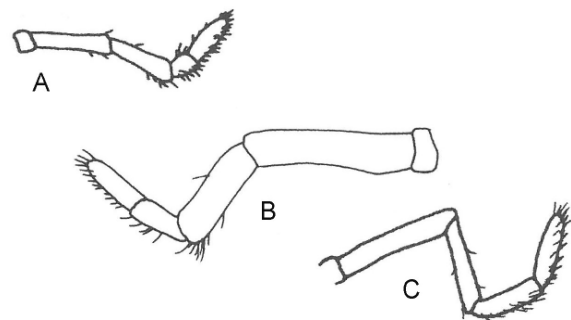


Fig. 6. Palps of *N. brevisrostre* (A), *N. brevitarse* (B) and *N. gracile* (C) (cf. Bamber 2010)

Labs 2026b and 2068 identified as *Nymphon brevitarse* and Lab 2053 identified as *Nymphon gracile*.

Nymphon brevitarse has palp articles 4 and 5 subequal in length (Fig. 6B). The movable chela finger is shorter than the palm.

Nymphon gracile has palp articles 4 and 5 subequal in length (Fig. 6C). The movable chela finger is as long as the palm.

Nymphon brevisrostre has palp article 5 distinctly longer than palp article 4 (Fig. 6A). The movable chela finger is shorter than the palm.

Total number of differences: 0 generic and 3 specific.

RT4605 *Endeis spinosa* (Montagu, 1808) (Figs. 7 & 8A) (cf. Bamber 2010)

Substrate: Mixed. Salinity: Full. Depth: Circalittoral. Locality: Wash. Condition: Good.



Fig. 7. *Endeis spinosa* (dorsal view)

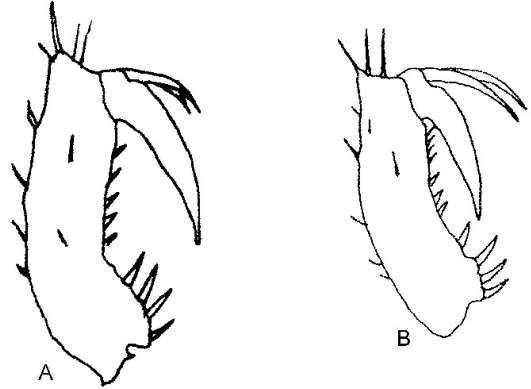


Fig. 8. Distal articles of legs, *E. spinosa* (A) & *E. charybdaea* (B) (cf. Bamber 2010)

Labs 2019, 2032a, 2032b, 2032c identified as *Endeis charybdaea*.

Endeis charybdaea has relatively long auxiliary claws, these reaching 60% of the length of the main claw (Fig. 8B). Tibia 2 is longer than the femur. The proboscis is one third the length of the trunk.

Endeis spinosa has shorter auxiliary claws, these being up to half as long as the main claw (Fig. 8A). Tibia 2 is sub-equal to the femur. The proboscis is half the length of the trunk.

Total number of differences: 0 generic and 4 specific.

RT4606 *Anoplodactylus petiolatus* (Krøyer, 1844) (Figs. 9 & 10A) (cf. Bamber 2010; Stock 1963)

Substrate: Mixed. Salinity: Full. Depth: Circalittoral. Locality: Wash. Condition: Good.

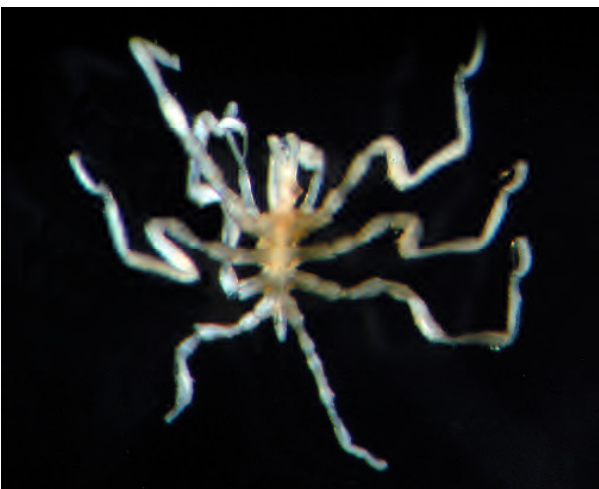


Fig. 9. *Anoplodactylus petiolatus* (dorsal view)

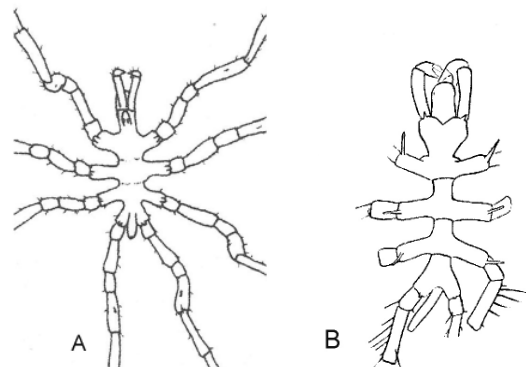


Fig. 10. Trunk of *A. petiolatus* (A) & *N. laterospinum* (B) (cf. Bamber 2010)

Lab 2068 identified as *Nymphon laterospinum*.

Nymphon laterospinum has a fully segmented body and no eye tubercle (Fig. 10B).

Anoplodactylus petiolatus has ill defined sutures, the sutures either entirely absent or present between somites 1 and 2, and between somites 2 and 3; and the eye tubercle is domed and slightly taller than wide (Figs. 9, 10A).

Total number of differences: 1 generic and 1 specific.

RT4607 *Mytilus edulis* Linnaeus, 1758 (Fig. 11) (cf. Tebble 1966)

Substrate: Stony gravel. Salinity: Full. Depth: Sublittoral. Locality: Wash. Condition: Good.



Fig. 11. *Mytilus edulis*

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

RT4608 *Abra tenuis* (Montagu, 1803) (Fig. 12) (cf. Tebble 1966)

Substrate: Mud. Salinity: Reduced. Depth: Intertidal. Locality: Thames. Condition: Good.



Fig. 12. *Abra tenuis*

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

RT4609 *Nucella lapillus* (Linnaeus, 1758) (Fig. 13) (cf. Graham 1988)

Substrate: Stony gravel. Salinity: Full. Depth: Sublittoral. Locality: Bristol Channel. Condition: Good.



Fig. 13. *Nucella lapillus* (lateral view)

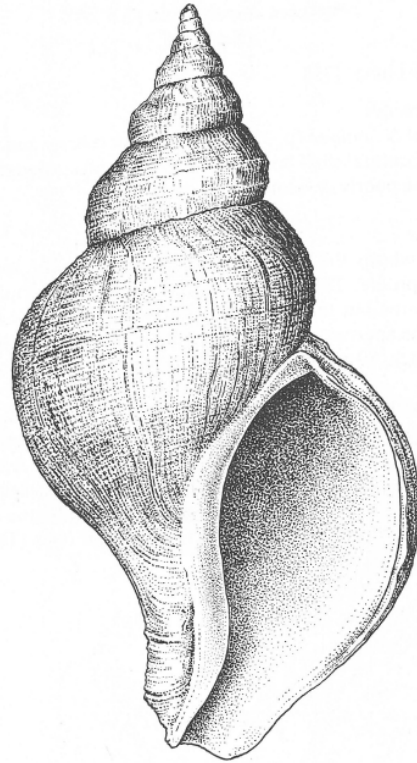


Fig. 14. *Neptunea antiqua* (lateral view)
(cf. Graham 1988)

Labs 2053 and 2061 identified as *Neptunea antiqua*.

Neptunea antiqua has a tall and thin spire and the siphonal canal is short and wide. The subsutural area of each whorl is often flat so that the whorl appears angulated. The outer lip is basic. (Fig. 14).

Nucella lapillus has a short pointed spire and the siphonal canal is short and narrow. The outer lip is thick and toothed internally in shells which have ceased to grow. (Fig. 13).

Lab 2058 identified only to class level (Gastropoda).

Total number of differences: 3 generic and 3 specific.

RT4610 *Modiolus modiolus* (Linnaeus, 1758) (Fig. 15) (cf. Tebble 1966; Oliver et al. 2010)

Substrate: Gravel. Salinity: Full. Depth: Circalittoral. Locality: Wash. Condition: Good.



Fig. 15. *Modiolus modiolus*

Lab 2002 identified as *Modiolula phaseolina* and Labs 2032c and 2060 identified as *Modiolus barbatus*.

Modiolula phaseolina has a narrow hinge plate, which is crenulated at all ages. The periostracum is composed of densely spaced, long simple bristles with broad triangular bases. The periostracum is a golden brown to brown colour.

Modiolus barbatus has a narrow hinge plate, which is smooth. The periostracum is composed of densely spaced, long lamellar bristles which are serrated on one side. The periostracum is a pale brown to brown colour.

Modiolus modiolus has a narrow hinge plate, which is smooth. The periostracum is composed of densely spaced, long simple bristles arising from concentric fringes. These are characteristically worn and encrusted with sand grains and shell fragments. The periostracum is black, chestnut brown to pale brown.

Lab 2058 identified to family level (Mytilidae).

Total number of differences: 2 generic and 4 specific.

RT4611 *Musculus subpictus* (Cantraine, 1835) (Fig. 16) (cf. Tebble 1966)

Substrate: Stony . Salinity: Full. Depth: Infralittoral. Locality: Moray Firth. Condition: Good.



Fig. 16. *Musculus subpictus*

Lab 2002 identified as *Musculus costulatus*.

In *Musculus costulatus* the shell is not tumid and has 8 to 10 broad anterior ribs, and 20 to 30 posterior ribs.

In *Musculus subpictus* the shell is tumid and has 15 to 18 broad anterior ribs, and 20 to 35, or more posterior ribs.

Lab 2029 identified as *Modiolarca subpicta* and Labs 2027 and 2068 as *Modiolarca tumida* which are synonyms of *Musculus subpictus* (cf. Gofas 2014; Rosenberg & Gofas 2014).

Total number of differences: 0 generic and 1 specific.

RT4612 *Crenella decussata* (Montagu, 1808) (Fig. 17) (cf. Tebble 1966; Oliver et al. 2010)

Substrate: Mixed. Salinity: Full. Depth: Circalittoral. Locality: Belfast. Condition: Good.

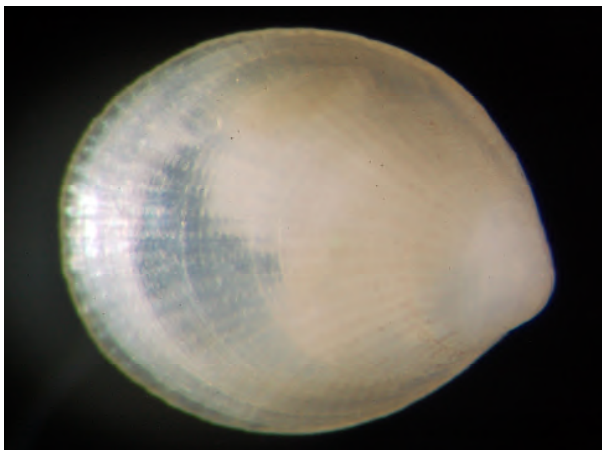


Fig. 17. *Crenella decussata*

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

RT4613 *Magelona johnstoni* Fiege, Licher & Mackie, 2000 (Fig. 18, 19B) (cf. Fiege et al. 2000)

Substrate: Sandy/Mud. Salinity: Full. Depth: Infralittoral. Locality: Plymouth. Condition: Good.



Fig. 18. *Magelona johnstoni* (dorsal view)

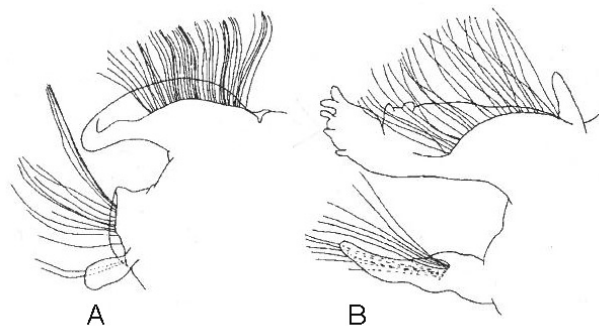


Fig. 19. *M. mirabilis* (A) & *M. johnstoni* (B), thoracic parapodia (cf. Fiege et al 2000)

Labs 2005 and 2027 identified as *Magelona mirabilis*.

Magelona mirabilis has thoracal notopodia with a smooth upper edge on the lateral lamellae and without dorsomedial lobe (Fig. 19A). There are no lateral pouches between chaetigers 10 and 11.

Magelona johnstoni has thoracal notopodia with a crenulated upper edge on the lateral lamellae and dorsal medial lobes are present on thoracic chaetigers 4 to 8. There are lateral pouches between chaetigers 10 and 11.

Total number of differences: 0 generic and 2 specific.

RT4614 *Owenia borealis* (Figs. 20, 21) (cf. Koh, Bhaud & Jirkov 2003)

Substrate: Mixed. Salinity: Full. Depth: Circalittoral. Locality: Dogger. Condition: Good.



Fig. 20. *Owenia borealis*

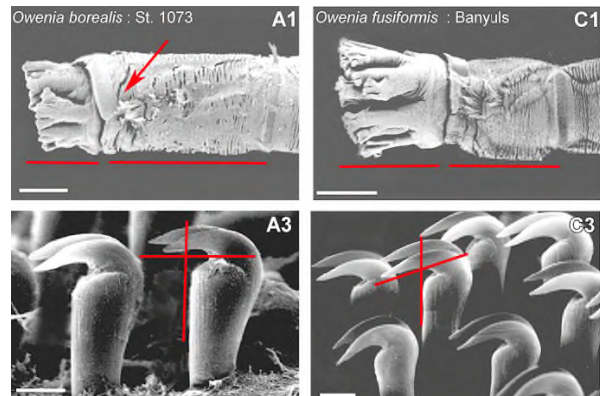


Fig. 21. Comparison of *O. borealis* (A1,3) & *O. fusiformis* (C1,3) (modified after Koh, Bhaud & Jirkov 2003)

Except for Lab 1926b who identified as *O. borealis*, all other labs identified as *O. fusicornis*.

Until recently, *Owenia fusiformis* Delle Chiaje, 1841 was considered to be cosmopolitan by many authors. The description of two new species in the northern North Atlantic by Koh, Bhaud and Jirkov (2003), however, showed that all records of *O. fusiformis* for the North Atlantic have to be re-evaluated. At least one other species, i.e. *O. borealis* Koh, Bhaud & Jirkov, 2003, could potentially occur also in more southern areas of the North Atlantic, as the presence of the species was confirmed by these authors along the northern Norwegian coast (which is still under the influence of the Gulf Stream) and around Iceland.

Fig. 21 shows the main differentiating characters of *O. borealis* and *O. fusiformis*: In *O. borealis*, the length of the crown is half the length of the thorax, the collar is oblique (in lateral view) with an indentation near the lateral notch (see arrow) and the hooks in abdominal torus 1 show an angle of 90° in profile view.

In *O. fusiformis*, the crown is of the same length as the thorax, the collar is vertical (in lateral view) and without indentation and the hooks of abdominal torus 1 show an angle of approximately 60° in profile view.

The specimens distributed for this ring test originated from the Dogger Bank and participants were asked to have a second look at their animals in order to verify their identification. More than half of the participants replied to our request and we can confirm the identity of these animals to be *O. borealis* as they showed the characters described above, with the length of the crown being the most useful character for quick identification.

Total number of differences:

As the implication of the work by Koh et al. (2003) for British waters and the North Atlantic in general were not understood until now, we are not rating the results for the purpose of this ring test, but suggest that all past records of *Owenia fusiformis* in the North Atlantic should be critically revised.

RT4615 *Lysianassa ceratina* (Walker, 1889) (Fig. 22) (cf. Lincoln 1979)

Substrate: Mixed. Salinity: Full. Depth: Infralittoral. Locality: North Donegal. Condition: Good.



Fig. 22. *Lysianassa ceratina* (lateral view)

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

RT4616 *Socarnes erythrophthalmus* Robertson, 1892 (Figs. 23, 24A) (cf. Lincoln 1979)

Substrate: Gravel. Salinity: Full. Depth: Infralittoral. Locality: Anglesey. Condition: Good.



Fig. 23. *Socarnes erythrophthalmus* (lateral view)

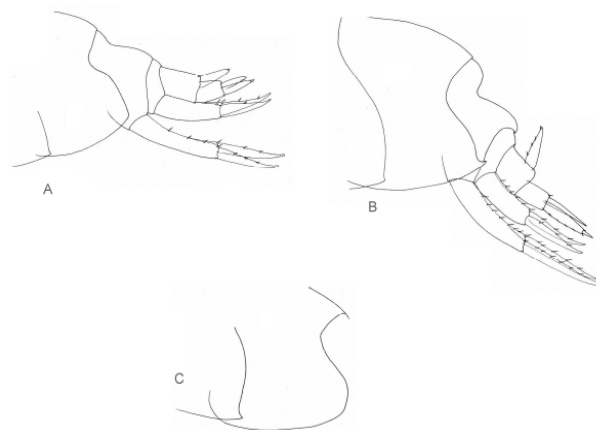


Fig. 24. Epimeral plates of *S. erythrophthalmus* (A), *T. nanoides* (B) & *L. ceratina* (C) (cf. Lincoln 1979)

Lab 2005 identified as *Tryphosella nanoides*

Tryphosella nanoides has a subchelate gnathopod 1. The telson is of moderate length and deeply cleft. The epimeral plate 3 is toothed (Fig. 24B).

Socarnes erythrophthalmus has a simple gnathopod 1. The telson is long and deeply cleft. The epimeral plate 3 is quadrate (Fig. 24A).

Lab 2029 identified as *Lysianassa ceratina*.

Lysianassa ceratina has a 1-articulated outer ramus of uropod 3. The telson is short and entire or minutely notched. The epimeral plate is broadly rounded (Fig. 24C).

Socarnes erythrophthalmus has a 2-articulated outer ramus of uropod 3. The telson is long and deeply cleft. The epimeral plate is quadrate (Fig. 24A).

Total number of differences: 2 generic and 2 specific.

RT4617 *Perrierella audouiniana* (Bate, 1857) (Fig. 25) (cf. Lincoln 1979)

Substrate: Mixed. Salinity: Full. Depth: Infralittoral. Locality: Belfast. Condition: Good.



Fig. 25. *Perrierella audouiniana* (lateral view)

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

RT4618 *Lembos websteri* Bate, 1857 (Figs. 26, 27A) (cf. Lincoln 1979.)

Substrate: Mixed. Salinity: Full. Depth: Sublittoral. Locality: Orkneys. Condition: Good.



Fig. 26. *Lembos websteri* (lateral view)

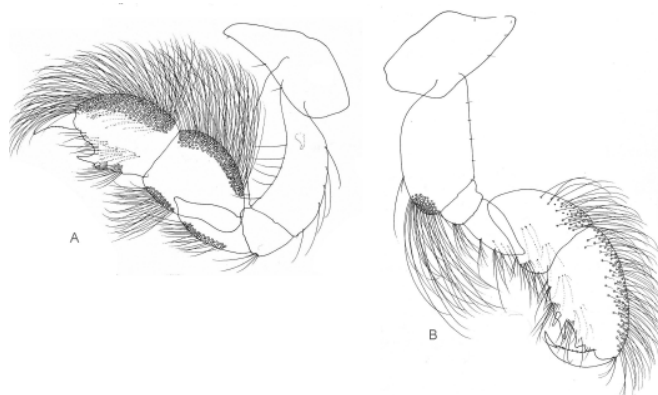


Fig. 27. Gnathopod 1 (male) of *L. websteri* (A) & *A. longipes* (B) (cf. Lincoln 1979)

Labs 2008b, 2034 and 2053 identified as *Autonoe longipes* and Lab 2068 as *Lembos longipes* which is a synonym of the latter.

Autonoe longipes has a tuft of long setae on the posterodistal surface of the basis of gnathopod 1 in males (Fig. 27B). The dactylus of pereopods 3 and 4 are almost as long as the propodus.

Lembos websteri has no tuft of long setae on the posterodistal surface of the basis of gnathopod 1 (Fig. 27A). The dactylus of pereopods three and four are only three quarters the length of the propodus.

Total number of differences: 3 generic and 4 specific.

RT4619 *Aora gracilis* (Bate, 1857) (Fig. 28, 29A) (cf. Lincoln 1979; Myers & Moore 1983)

Substrate: Mixed. Salinity: High. Depth: Infaunal. Locality: Thames. Condition: Good.



Fig. 28. *Aora gracilis* (lateral view)

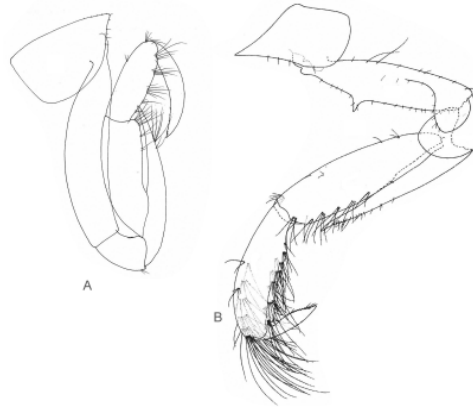


Fig. 29. Male gnathopod 1 of *A. gracilis* (A) & *A. typica* (B)
(cf. Lincoln 1979 for A, Myers & Moore 1983 for B)

Labs 2007, 2019, 2032a, 2032b, 2032c, 2058, 2061 and 2068 identified as *Aora typica*.

In *Aora typica* males the basis of gnathopod 1 has a triangular process and the merus does not reach to the end of the carpus (Fig. 29B).

In *Aora gracilis* males the gnathopod 1 has no process on the basis and the merus extends beyond the distal edge of the carpus (Fig. 29A).

Total number of differences: 0 generic and 8 specific.

RT4620 *Polygordius* sp. (Fig. 30) (cf. Westheide 1990; Rouse & Pleijel 2001; Webb 1964)

Substrate: Mixed. Salinity: Full. Depth: Cirralittoral. Locality: Dogger. Condition: Good.

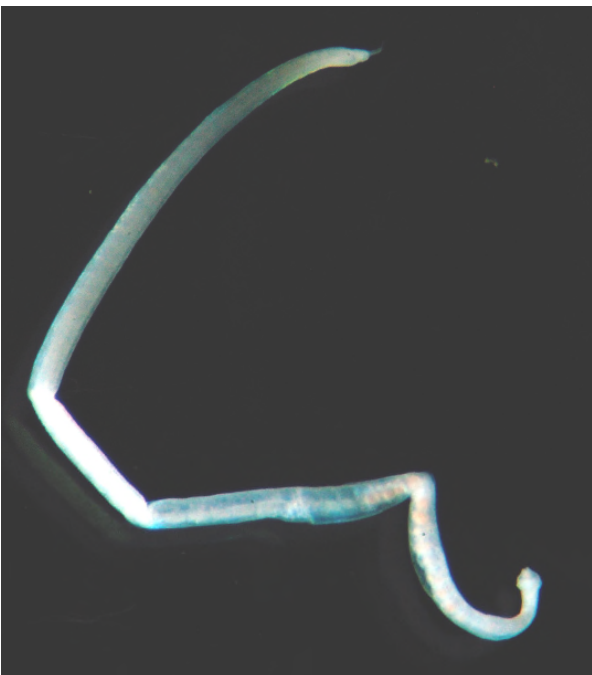


Fig. 30. *Polygordius* sp.

Lab 2005 identified as *Sclerolinum brattstromi*.

Sclerolinum brattstromi is a member of the Siboglinidae and has head appendages which are long and flexible and arise sub-apically. The tubes are transparent, smooth-walled and tough.

Polygordius sp. is a member of the Polygordiidae and has head appendages that arise apically and are short and stiff. *Polygordius* specimens are not known to live in tubes. They have a smooth, iridescent surface.

All other laboratories identified as *Polygordius lacteus*, *P. appendiculatus* or *P. villoti*. The genus *Polygordius* Schneider, 1868 is currently under revision by D. Fiege & P. Ramey-Balci. Due to the confusion in the literature regarding identification characters and validity of species, we suggest to leave identifications at genus level until the results of this revision are available.

Total number of differences: 1 generic and 1 specific.

RT4621 *Antedon bifida* (Pennant, 1777) (Fig. 31, 32A) (cf. Southward & Campbell 2006)

Substrate: Mixed. Salinity: Full. Depth: Circalittoral. Locality: Belfast. Condition: Good.



Fig. 31. *Antedon bifida* (lateral view)

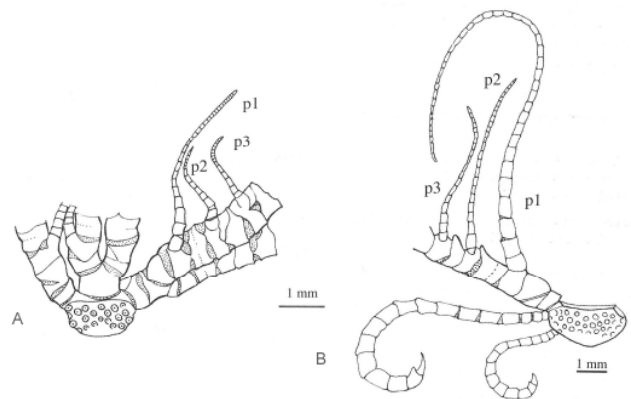


Fig. 32 Arm bases of *A. bifida* (A) & *A. petasus* (B)
(cf. Southward & Cambell 2006)

Labs 2053 and 2068 identified as *Antedon petasus*.

Antedon petasus has arm joints with a flat outer edge. The first arm pinnule is much longer than the subsequent pinnules (Fig. 32B).

Antedon bifida has arm joints with a prominent outer edge. The first arm pinnule is not more than twice as long as the subsequent pinnules (Fig. 32A).

Total number of differences: 0 generic and 2 specific.

RT4622 *Spirobranchus lamarcki* (Quatrefages, 1866) (Figs. 33, 34A) (cf. Hayward & Ryland 1990; ten Hove 2014).

Substrate: Mixed. Salinity: High. Depth: Infralittoral. Locality: Thames. Condition: Good.



Fig. 33. *Spirobranchus lamarcki* (ventrolateral view)

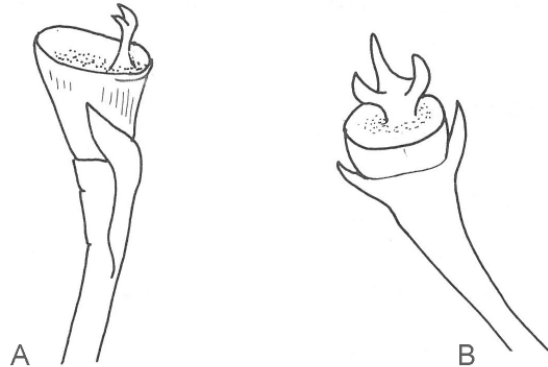


Fig. 34. Opercula of *S. lamarcki* (A) & *S. triqueter* (B)
(cf. Hayward & Ryland 1990)

Lab 2027 identified as *Spirobranchus triqueter*.

Spirobranchus triqueter has a shallow dish-shaped opercular ampulla (Fig. 34B).

Spirobranchus lamarcki has a deep dish-shaped opercular ampulla (Fig. 34A).

Labs 2029, 2061 and 2068 used the generic name *Pomatoceros* Philippi, 1844 which is a junior synonym of *Spirobranchus* Blainville, 1818 according to ten Hove (2014) and which is not counted as a difference for the purpose of this ring test.

Total number of differences: 0 generic and 1 specific.

RT4623 *Eclysippe vanelli* (Fauvel, 1936) (Fig. 35) (cf. Jirkov & Leontovich 2013; Holthe 1977)

Substrate: Mixed. Salinity: Full. Depth: Circalittoral. Locality: Lewis. Condition: Good.



Fig. 35. *Eclysippe vanelli* (dorsal view)

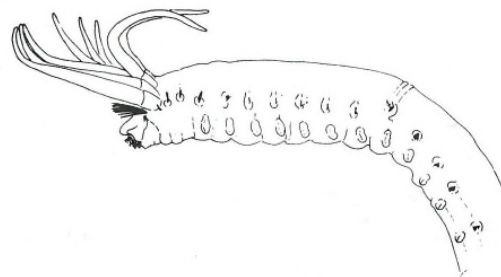


Fig. 36. *Anobothrus gracilis* (lateral view)
(cf. Jirkov & Leontovich 2013)

The species was originally described as *Lysippe vanelli* by Fauvel (1936) and subsequently either assigned to *Pterolysippe* Augener, 1918 or *Eclysippe* Eliason, 1955. We follow Jirkov & Leontovitch (2013) who consider the species to belong to *Eclysippe*.

Labs 2029 and 2034 identified as *Anobothrus gracilis*.

Anobothrus gracilis has all the thoracic segments of similar size (Fig. 36). The notopodia of thoracic segment 8 are slightly displaced dorsally and connected by a low glandular band.

Eclysippe vanelli has the thorax divided into two distinct regions, the anterior 9 – 10 segments are short and the remaining 5 posterior thoracic segments are long (Fig. 35). There is no glandular band on segment 8.

Labs 2032a and 2032c identified as *Ampharete finmarchica*, Lab 2032b as *Ampharete falcata*, and Lab 2068 as *Ampharete baltica*.

Ampharete species have all thoracic segments of similar length. There are 14 thoracic chaetigers.

Eclysippe vanelli has the thorax divided into two distinct regions. The anterior 9 – 10 segments are short and the remaining 5 posterior thoracic segments are long. There are 15 thoracic chaetigers.

Lab 2033 identified as *Amphicteis gunneri*.

Amphicteis gunneri has 17 thoracic chaetigers. All thoracic segments are of similar length. The prostomium has two longitudinal ridges protruding anteriorly as horns.

Eclysippe vanelli has 15 thoracic notopodia with bristles. The thorax is divided into two distinct regions. The anterior 9 – 10 segments are short and the remaining 5 posterior thoracic segments are long. The prostomium has no longitudinal ridges.

Total number of differences: 7 generic and 7 specific.

RT4624 *Acrocnida brachiata* (Montagu, 1804) (Figs. 37, 38A) (cf. Southward & Campbell 2006)

Substrate: Mud/Sand. Salinity: Full. Depth: Circalittoral. Locality: Solway. Condition: Good.

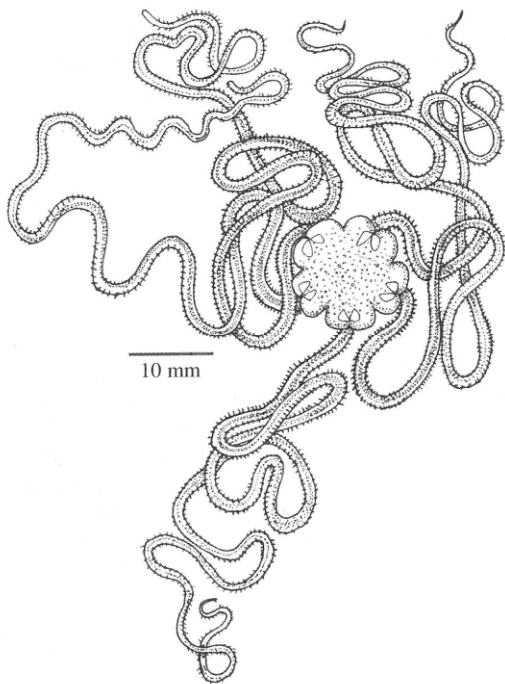


Fig. 37. *Acrocnida brachiata* (dorsal view)

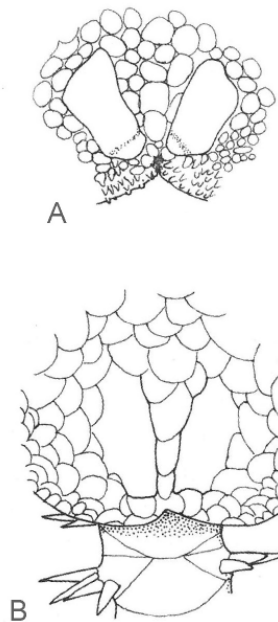


Fig. 38. Radial shields of *A. brachiata* (A) & *A. chiajei* (B) (cf. Southward & Campbell 2006)

Labs 2032a, 2032c, 2034, 2061 and 2068 identified as *Amphiura chiajei*

Amphiura chiajei has a smooth ventral arm surfaces. The scales on the disc are smooth and the radial shields are not furrowed (Fig. 38B).

Acrocnida brachiata has sculptured ventral arm surfaces. The scales on the disc have small tubercles and the radial shields are furrowed (Fig. 38A).

Total number of differences: 5 generic and 5 specific.

RT4625 *Ophiura ophiura* (Linnaeus, 1758) (Fig. 39) (cf. Southward & Campbell 2006)

Substrate: Mud/Sand. Salinity: Full. Depth: Circalittoral. Locality: Solway. Condition: Good.



Fig. 39. *Ophiura ophiura* (ventral view)

This species was correctly identified by all participants.

Total number of differences: 0 generic and 0 specific.

REFERENCES

- Bamber R.N. 2010. Sea-Spiders (Pycnogonida) of the north-east Atlantic. *Synopsis of the British Fauna (New Series)*, 5: 1-250.
- Barnich R. 2011. Identification of scale worms in British and Irish waters. *NMBAQC Workshop Key 2010*.
- Barnich R. & Fiege D. 2001. The Mediterranean species of *Malmgreniella* Hartman, 1967 (Polychaeta: Polynoidae, Polynoinae) , including the description of a new species. *Journal of Natural History*, 35: 1119-1142.
- Chambers S. J. & Muir A. I., 1997. Polychaetes - British Chrysopetaloidea, Pisionoidea and Aphroditoidea. *Synopses of the British Fauna (New Series)*, 54: 1-202.
- Fiege D., Licher F. & Mackie A.S.Y. 2000. A partial review of the European Magelonidae (Annelida: Polychaeta): *Magelona mirabilis* redefined and *M. johnstoni* sp. nov. distinguished. *Journal of the Marine Biological Association of the United Kingdom*, 80: 215-234.
- Gofas S. 2014. *Modiolarca subpicta* (Cantraine, 1835). Accessed through: *World Register of Marine Species* at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=140460> on 2014-05-19.
- Graham A. 1988. Molluscs: Prosobranch and Pyramidellid Gastropods. *Synopses of the British Fauna (New Series)*, 2: 1-662.
- Hayward P.J. & Ryland J.S. 1990. *The marine fauna of the British Isles and North-West Europe. Vol. 1*. Clarendon Press Oxford. 1-627.
- Jirkov I.A. & Leontovich M.K. 2013. Identification keys for Terebellomorpha (Polychaeta) of the eastern Atlantic and North Polar Basin. *Invertebrate Zoology* 10(2): 217-243.
- Koh B.S., Bhaud, M.R. & Jirkov, I.A. 2003. Two new species of *Owenia* (Annelida: Polychaeta) in the northern part of the North Atlantic Ocean and remarks on previously erected species from the same area. *Sarsia*, 88(3): 175-188.
- Lincoln R.J. 1979. *British Marine Amphipoda: Gammaridea*. Trustees of the British Museum (Natural History) London. 1-658.
- Myers A.A. & Moore P.G. 1983. The New Zealand and south-east Australian species of *Aora* Kroyer (Amphipoda, Gammaridea). *Records of the Australian Museum* 35(4): 167–180.
- Oliver P.G., Holmes A.M., Killeen I.J. & Turner J.A. 2010 *Marine Bivalve Shells of the British Isles (Mollusca: Bivalvia)*. Amgueddfa Cymru - National Museum Wales. Available online at <http://naturalhistory.museumwales.ac.uk/britishbivalves>. [Accessed: 26 June 2014].
- Pettibone M.H. 1963. Marine polychaete worms of the New England region. 1. Aphroditidae through Trochochaetidae. *U.S. National Museum Bulletin*, 227(1): 1-356.
- Rosenberg G. & Gofas S. 2014. *Modiolarca tumida* (Hanley, 1843). Accessed through: *World Register of Marine Species* at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=150683> on 2014-05-19.
- Rouse G. & Pleijel F. 2001. *Polychaetes*. Oxford University Press. 1-354.
- Southward E. & Campbell A.C. 2006. Echinoderms. *Synopses of the British Fauna (New Series)*, 56: 1-271.
- Stock J. H. 1963. South African deep-sea Pycnogonida, with descriptions of five new species. *Annals of the South African Museum*, 46 (12): 321-340.
- Tebble N.M. 1966. *British Bivalve Seashells. A handbook for identification*. Trustees of the British Museum (Natural History) London. 1-212.
- ten Hove, H. (2014). *Pomatoceros lamarcki* (Quatrefages, 1866). In: Read, G.; Fauchald, K. (Ed.) (2014) World Polychaeta database. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=152358> on 2014-08-18
- Webb M. 1964. Additional notes on *Sclerolinum brattstromi* (Pogonophora) and the establishment of a new family, Sclerolinidae. *Sarsia*, 16 (1): 47-58.
- Westheide W. 1990. Polychaetes – Interstitial families. *Synopses of the British Fauna (New Series)*, 44. 1-152.

INDEX OF SPECIES COVERED IN RT 46

Page

<i>Ampelisca brevicornis</i>	21
<i>Abra tenuis</i>	18
<i>Acrocnida brachiata</i>	28
<i>Ampharete baltica</i>	28
<i>Ampharete falcata</i>	28
<i>Ampharete finmarchica</i>	28
<i>Amphicteis gunneri</i>	28
<i>Amphiura chiajei</i>	28
<i>Anobothrus gracilis</i>	27,28
<i>Anoplodactylus petiolatus</i>	17,18
<i>Antedon bifida</i>	26
<i>Antedon petasus</i>	26
<i>Aora gracilis</i>	25
<i>Aora typica</i>	25
<i>Autonoe longipes</i>	24
<i>Crenella decussata</i>	21
<i>Eclysippe vanelli</i>	27,28
<i>Endeis charybdaea</i>	17
<i>Endeis spinosa</i>	17
<i>Gattyana cirrhosa</i>	14,15
<i>Gattyana nutti</i>	14,15
<i>Harmothoe impar</i>	14,15
<i>Harmothoe viridis</i>	16
<i>Lembos longipes</i>	24
<i>Lembos websteri</i>	24
<i>Lepidonotus squamatus</i>	14,15
<i>Lysianassa ceratina</i>	22,23
<i>Lysippe vanelli</i>	27
<i>Magelona johnstoni</i>	21,22
<i>Magelona mirabilis</i>	21,22
<i>Malmgrenia andreapolis</i>	15,16
<i>Malmgrenia arenicolae</i>	16
<i>Malmgrenia darbouxi</i>	16
<i>Malmgrenia lunulata</i>	15,16
<i>Malmgrenia marphysae</i>	16
<i>Modiolarca subpicta</i>	21
<i>Modiolarca tumida</i>	21
<i>Modiolula phaseolina</i>	20
<i>Modiolus barbatus</i>	20
<i>Modiolus modiolus</i>	20
<i>Musculus costulatus</i>	20
<i>Musculus subpictus</i>	20,21
<i>Mytilus edulis</i>	18
<i>Neptunea antiqua</i>	19
<i>Nucella lapillus</i>	19
<i>Nymphon brevirostre</i>	16
<i>Nymphon brevitarse</i>	16
<i>Nymphon gracile</i>	16
<i>Nymphon laterospinum</i>	17
<i>Ophiura ophiura</i>	29
<i>Owenia borealis</i>	22
<i>Owenia fusiformis</i>	22
<i>Perrierella audouiniana</i>	24
<i>Polygordius</i>	25,26
<i>Polygordius appendiculatus</i>	26
<i>Polygordius lacteus</i>	26
<i>Polygordius villoti</i>	26

<i>Pomatoceros</i>	27
<i>Pterolysippe vanelli</i>	27
<i>Sclerolinum brattstromi</i>	25
<i>Socarnes erythrophthalmus</i>	23
<i>Spirobranchus lamarcki</i>	27
<i>Spirobranchus triqueter</i>	27
<i>Tryphosella nanooides</i>	23

Ring Test Specimen Return Instructions

Please return all ring test specimens as soon as possible.

These are reference specimens and must be returned to our collection. Your laboratory may be ineligible for future ring tests if specimens are not returned.

Note new return address: **Ruth Barnich, Thomson Unicmarine Ltd., Compass House,
60 Priestley Rd, Guildford GU2 7AG, UK**