

The National Marine Biological
Analytical Quality Control Scheme

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Ring Test Bulletin – RTB#40

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RING TEST DETAILS

Ring Test #40

Type/Contents – Targeted; Species at the limit of their range

Circulated – 03/03/2011

Completion Date – 29/04/2011

Number of Subscribing Laboratories – 22

Number of Participating Laboratories – 21

Number of Results Received – 22*

*multiple data entries per laboratory permitted

Summary of differences

Specimen	Genus	Species	Total differences for 22 returns	
			Genus	Species
RT4001	<i>Sternaspis</i>	<i>scutata</i>	0	0
RT4002	<i>Eusarsiella</i>	<i>zostericola</i>	2	2
RT4003	<i>Gibbula</i>	<i>umbilicalis</i>	0	2
RT4004	<i>Potamopyrgus</i>	<i>antipodarum</i>	5	5
RT4005	<i>Monocorophium</i>	<i>sextonae</i>	5	7
RT4006	<i>Palaemon</i>	<i>macrodactylus</i>	0	5
RT4007	<i>Gibbula</i>	<i>pennanti</i>	2	18
RT4008	<i>Barleeia</i>	<i>unifasciata</i>	10	10
RT4009	<i>Monocorophium</i>	<i>sextonae</i>	2	3
RT4010	<i>Gibbula</i>	<i>pennanti</i>	0	4
RT4011	<i>Eatonina</i>	<i>fulgida</i>	4	4
RT4012	<i>Caprella</i>	<i>mutica</i>	1	2
RT4013	<i>Mya</i>	<i>arenaria</i>	2	4
RT4014	<i>Crepidula</i>	<i>fornicata</i>	2	2
RT4015	<i>Potamopyrgus</i>	<i>antipodarum</i>	13	13
RT4016	<i>Tubificoides</i>	<i>heterochaetus</i>	3	12
RT4017	<i>Alkmaria</i>	<i>romijni</i>	4	4
RT4018	<i>Haploops</i>	<i>setosa</i>	1	2
RT4019	<i>Ensis</i>	<i>directus</i>	0	11
RT4020	<i>Lumbrineriopsis</i>	<i>paradoxa</i>	1	1
RT4021	<i>Thyasira</i>	<i>equalis</i>	2	13
RT4022	<i>Assiminea</i>	<i>grayana</i>	6	6
RT4023	<i>Melinna</i>	<i>palmata</i>	3	5
RT4024	<i>Apocorophium</i>	<i>lacustre</i>	0	0
RT4025	<i>Axinulus</i>	<i>croulinensis</i>	7	7
Total differences			75	142
Average diff. / data return			3.4	6.5

Table 1. The identification of fauna made by participating laboratories for RT40 (arranged by specimen). Names are given only where different from the AQC identification.

RT40	RT4001	RT4002	RT4003	RT4004	RT4005	RT4006	RT4007	RT4008
Taxon	<i>Sternaspis scutata</i>	<i>Eusarsiella zostericola</i>	<i>Gibbula umbilicalis</i>	<i>Potamopyrgus antipodarum</i>	<i>Monocorophium sextonae</i>	<i>Palaemon macrodactylus</i>	<i>Gibbula pennanti</i>	<i>Barleela unifasciata</i>
LB1701	[Sternapsis] -	--	--	--	[Monocorophium] -	--	- umbilicalis	--
LB1703	--	--	--	Ventrosia ventrosa	--	--	- cineraria	Hydrobia ulvae
LB1704	--	--	--	Ventrosia ventrosa	--	--	--	Cingula trifasciata
LB1705a	[Sternapsis] -	--	--	[Pomatopyrgus] -	Corophium crassicorne	--	- umbilicalis	Setia pulcherrima
LB1705b	[Sternapsis] -	--	--	[Pomatopyrgus] -	[Corophium] -	--	- cineraria	Obtusella intersecta
LB1706	--	--	--	--	--	--	--	--
LB1707	--	--	--	--	--	--	- cineraria	Assimineea grayana
LB1708	--	--	- [umbilicalis]	--	--	--	- umbilicalis	--
LB1709	--	Lasaea adansoni	--	Hydrobia ulvae	Corophium crassicorne	- longirostris	Osilinus lineatus	Alvania semistriata
LB1710	--	--	--	--	Crassikorophium crassicorne	--	- umbilicalis	--
LB1712	--	--	- cineraria	--	- acherusicum	--	- umbilicalis	--
LB1713	--	--	--	--	--	--	Osilinus lineatus	--
LB1714	--	--	--	Hydrobia ulvae	--	--	- cineraria	--
LB1715	--	--	--	--	--	--	--	--
LB1717	--	--	--	--	--	--	- umbilicalis	--
LB1718	--	--	--	--	--	- serratus	--	Hydrobia ulvae
LB1719	--	--	--	--	Crassikorophium crassicorne	- elegans	- umbilicalis	--
LB1720	[Sternapsis] -	--	- [umbilicalis]	--	[Corophium] -	[Palemon] elegans	- cineraria	Crissilla semistriata
LB1721	--	--	--	--	--	--	- cineraria	Crissilla semistriata
LB1722	--	--	--	--	--	- longirostris	- umbilicalis	--
LB1723	--	Ostracoda 0	--	Ventrosia ventrosa	Corophium crassicorne	--	- tumida	Hydrobia ulvae
LB1724	--	--	- magus	--	- 0	--	- umbilicalis	--

Table 1. The identification of fauna made by participating laboratories for RT40 (arranged by specimen). Names are given only where different from the AQC identification.

RT40	RT4009	RT4010	RT4011	RT4012	RT4013	RT4014	RT4015	RT4016	RT4017
Taxon	<i>Monocorophium sextonae</i>	<i>Gibbula pennanti</i>	<i>Eatonina fulgida</i>	<i>Caprella mutica</i>	<i>Mya arenaria</i>	<i>Crepidula fornicata</i>	<i>Potamopyrgus antipodarum</i>	<i>Tubificoides heterochaetus</i>	<i>Alkmaria romijni</i>
LB1701	Crassicorophium bonellii	- cineraria	--	--	--	--	--	--	--
LB1703	--	--	--	--	--	--	--	--	--
LB1704	--	--	Cingula trifasciata	--	Corbula gibba	--	--	- amplivasatus	[Hypania] -
LB1705a	[Corophium] -	- cineraria	[Cingulopsis] -	--	--	Acmaea virginea	Rissoella diaphana	- pseudogaster agg	--
LB1705b	[Corophium] -	- cineraria	[Cingulopsis] -	--	--	--	Rissoella diaphana	Monopylephorus rubroniveus	--
LB1706	--	--	--	--	--	--	Ventrosia ventrosa	--	--
LB1707	--	--	--	--	--	--	--	--	--
LB1708	--	--	--	--	--	--	Assiminea grayana	- cf. galiciensis	--
LB1709	Corophium volutator	--	--	Aeginina longicornis	--	Helcion pellucidum	[Hydrobia] [jenkinsi]	- pseudogaster agg.	Ampharete spp. Juv.
LB1710	--	--	Rissoella opalina	--	- truncata	--	Rissoella diaphana	- benedii	Pterolysippe vanelli
LB1712	--	- umbilicalis	Rissoella opalina	--	--	--	Hydrobia ulvae	- galiciensis	Eclysippe cf. vanelli
LB1713	--	--	--	--	--	--	Mercuria confusa	--	--
LB1714	--	--	--	--	- truncata	--	--	--	--
LB1715	--	--	--	--	--	--	Rissoella diaphana	- swirencowi	--
LB1717	--	--	--	--	--	--	Ventrosia ventrosa	--	--
LB1718	--	--	- [fulgida]	--	--	--	Hydrobia ulvae	- pseudogaster agg.	--
LB1719	--	--	Barleeia unifasciata	--	--	--	Hydrobia ulvae	--	--
LB1720	[Corophium] -	--	--	--	Thracia phaseolina	--	- [jenkinsi]	0 0	Samytha sexcirrata
LB1721	--	--	--	--	--	--	Hydrobia acuta neglecta	- swirencowi	--
LB1722	--	--	--	- linearis	--	--	--	--	--
LB1723	[Corophium] -	--	--	--	--	--	Gastropoda 0	Oligochaeta 0	--
LB1724	- 0	--	--	--	--	--	[Potamopyrgus] -	--	--

Table 1. The identification of fauna made by participating laboratories for RT40 (arranged by specimen). Names are given only where different from the AQC identification.

RT40	RT4018	RT4019	RT4020	RT4021	RT4022	RT4023	RT4024	RT4025
Taxon	<i>Haploops setosa</i>	<i>Ensis directus</i>	<i>Lumbrineriopsis paradoxa</i>	<i>Thyasira equalis</i>	<i>Assimineae grayana</i>	<i>Melinna palmata</i>	<i>Apocorophium lacustre</i>	<i>Axinulus croulinensis</i>
LB1701	--	- arcuatus	--	- flexuosa	--	Melinnopsis rostrata	--	Thyasira flexuosa
LB1703	--	- magnus	--	- flexuosa	--	--	--	--
LB1704	--	--	--	--	--	--	--	--
LB1705a	--	- arcuatus	--	- flexuosa	Pusillina sarsi	--	[Corophium] -	Thyasira equalis
LB1705b	--	- arcuatus	--	--	Rissoa interrupta	--	[Corophium] -	[Axinellus] -
LB1706	--	--	--	--	--	--	--	--
LB1707	--	- arcuatus	--	--	Hydrobia ulvae	--	--	--
LB1708	--	--	--	--	--	--	--	--
LB1709	--	- [americanus]	--	- sarsi	--	--	[Corophium] -	Thyasira succisa
LB1710	--	--	--	Axinulus spp	--	- elisabethae	--	--
LB1712	--	- arcuatus	--	- flexuosa	--	--	--	--
LB1713	--	--	--	--	--	--	--	--
LB1714	--	--	--	--	[Assminea] -	--	--	--
LB1715	--	--	--	--	--	--	--	--
LB1717	--	--	--	--	--	--	--	--
LB1718	- tubicola	- arcuatus	--	- sarsi	--	--	[Corophium] -	--
LB1719	--	- magnus	--	- sarsi	--	--	--	Mendicula ferruginosa
LB1720	Biblis gaimardi	- arcuatus	Cenogenus sp.	Thyasira [=Mendicula] ferruginea	Littorina tenebrosa	- elisabethae	[Corophium] -	Thyasira obsoleta
LB1721	--	- magnus	--	- flexuosa	Hydrobia ulvae	--	--	Thyasira sarsi
LB1722	--	- ensis	--	- sarsi	--	--	--	--
LB1723	--	--	--	- flexuosa	--	Terebellidae 0	[Corophium] -	Thyasira ferruginea
LB1724	--	--	[Lumbrineriopsis] -	- flexuosa	Hydrobia ulvae	Ampharetidae 0	--	--

Table 2. The identification of fauna made by participating laboratories for RT40 (arranged by participant). Names are given only where different from the AQC identification.

RT40	Taxon	LB1701	LB1703	LB1704	LB1705a	LB1705b
RT4001	<i>Sternaspis scutata</i>	[Sternapsis] -	--	--	[Sternapsis] -	[Sternapsis] -
RT4002	<i>Eusarsiella zostericola</i>	--	--	--	--	--
RT4003	<i>Gibbula umbilicalis</i>	--	--	--	--	--
RT4004	<i>Potamopyrgus antipodarum</i>	--	Ventrosia ventrosa	Ventrosia ventrosa	[Pomatopyrgus] -	[Pomatopyrgus] -
RT4005	<i>Monocorophium sextonae</i>	[Monocorophium] -	--	--	Corophium crassicorne	[Corophium] -
RT4006	<i>Palaemon macrodactylus</i>	--	--	--	--	--
RT4007	<i>Gibbula pennanti</i>	- umbilicalis	- cineraria	--	- umbilicalis	- cineraria
RT4008	<i>Barleeia unifasciata</i>	--	Hydrobia ulvae	Cingula trifasciata	Setia pulcherrima	Obtusella intersecta
RT4009	<i>Monocorophium sextonae</i>	Crassicorophium bonellii	--	--	[Corophium] -	[Corophium] -
RT4010	<i>Gibbula pennanti</i>	- cineraria	--	--	- cineraria	- cineraria
RT4011	<i>Eatonina fulgida</i>	--	--	Cingula trifasciata	[Cingulopsis] -	[Cingulopsis] -
RT4012	<i>Caprella mutica</i>	--	--	--	--	--
RT4013	<i>Mya arenaria</i>	--	--	Corbula gibba	--	--
RT4014	<i>Crepidula fornicata</i>	--	--	--	Acmaea virginea	--
RT4015	<i>Potamopyrgus antipodarum</i>	--	--	--	Rissoella diaphana	Rissoella diaphana
RT4016	<i>Tubificoides heterochaetus</i>	--	--	- amplivasatus	- pseudogaster agg	Monopylephorus rubroniveus
RT4017	<i>Alkmaria romijni</i>	--	--	[Hypania] -	--	--
RT4018	<i>Haploops setosa</i>	--	--	--	--	--
RT4019	<i>Ensis directus</i>	- arcuatus	- magnus	--	- arcuatus	- arcuatus
RT4020	<i>Lumbrineriopsis paradoxa</i>	--	--	--	--	--
RT4021	<i>Thyasira equalis</i>	- flexuosa	- flexuosa	--	- flexuosa	--
RT4022	<i>Assiminea grayana</i>	--	--	--	Pusillina sarsi	Rissoa interrupta
RT4023	<i>Melinna palmata</i>	Melinnopsis rostrata	--	--	--	--
RT4024	<i>Apocorophium lacustre</i>	--	--	--	[Corophium] -	[Corophium] -
RT4025	<i>Axinulus croulinensis</i>	Thyasira flexuosa	--	--	Thyasira equalis	[Axinellus] -

Table 2. The identification of fauna made by participating laboratories for RT40 (arranged by participant). Names are given only where different from the AQC identification.

RT40	Taxon	LB1706	LB1707	LB1708	LB1709	LB1710
RT4001	<i>Sternaspis scutata</i>	--	--	--	--	--
RT4002	<i>Eusarsiella zostericola</i>	--	--	--	Lasaea adansoni	--
RT4003	<i>Gibbula umbilicalis</i>	--	--	- [umbilicaris]	--	--
RT4004	<i>Potamopyrgus antipodarum</i>	--	--	--	Hydrobia ulvae	--
RT4005	<i>Monocorophium sextonae</i>	--	--	--	Corophium crassicorne	Crassicorophium crassicorne
RT4006	<i>Palaemon macrodactylus</i>	--	--	--	- longirostris	--
RT4007	<i>Gibbula pennanti</i>	--	- cineraria	- umbilicalis	Osilinus lineatus	- umbilicalis
RT4008	<i>Barleeia unifasciata</i>	--	Assiminea grayana	--	Alvania semistriata	--
RT4009	<i>Monocorophium sextonae</i>	--	--	--	Corophium volutator	--
RT4010	<i>Gibbula pennanti</i>	--	--	--	--	--
RT4011	<i>Eatonina fulgida</i>	--	--	--	--	Rissoella opalina
RT4012	<i>Caprella mutica</i>	--	--	--	Aeginina longicornis	--
RT4013	<i>Mya arenaria</i>	--	--	--	--	- truncata
RT4014	<i>Crepidula fornicata</i>	--	--	--	Helcion pellucidum	--
RT4015	<i>Potamopyrgus antipodarum</i>	Ventrosia ventrosa	--	Assiminea grayana	[Hydrobia] [jenkinsi]	Rissoella diaphana
RT4016	<i>Tubificoides heterochaetus</i>	--	--	- cf. galiciensis	- pseudogaster agg.	- benedii
RT4017	<i>Alkmaria romijni</i>	--	--	--	Ampharete spp. Juv.	Pterolysippe vanelli
RT4018	<i>Haploops setosa</i>	--	--	--	--	--
RT4019	<i>Ensis directus</i>	--	- arcuatus	--	- [americanus]	--
RT4020	<i>Lumbrineriopsis paradoxa</i>	--	--	--	--	--
RT4021	<i>Thyasira equalis</i>	--	--	--	- sarsi	Axinulus spp
RT4022	<i>Assiminea grayana</i>	--	Hydrobia ulvae	--	--	--
RT4023	<i>Melinna palmata</i>	--	--	--	--	- elisabethae
RT4024	<i>Apocorophium lacustre</i>	--	--	--	[Corophium] -	--
RT4025	<i>Axinulus croulinensis</i>	--	--	--	Thyasira succisa	--

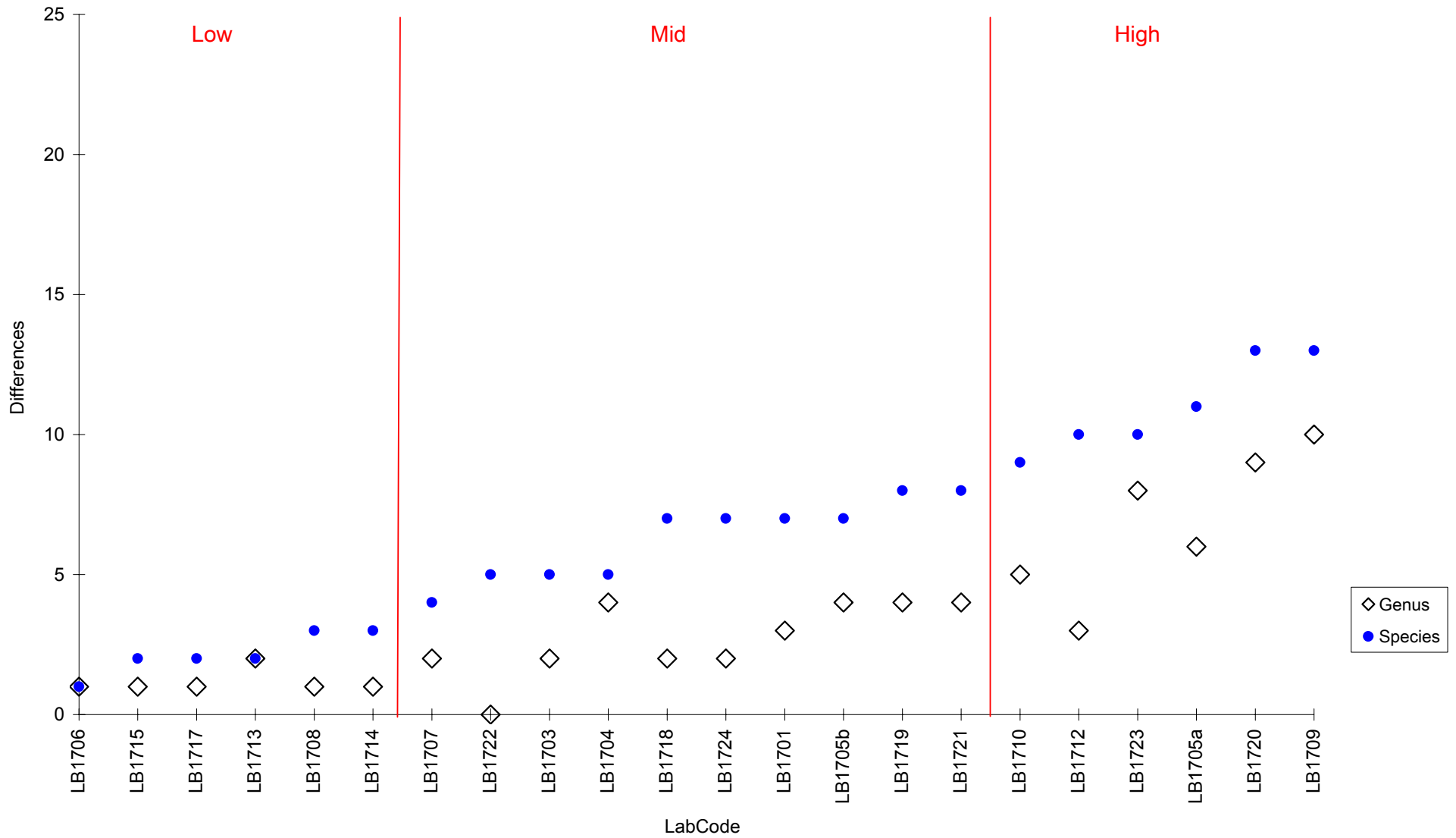
Table 2. The identification of fauna made by participating laboratories for RT40 (arranged by participant). Names are given only where different from the AQC identification.

RT40	Taxon	LB1712	LB1713	LB1714	LB1715	LB1717	LB1718
RT4001	<i>Sternaspis scutata</i>	--	--	--	--	--	--
RT4002	<i>Eusarsiella zostericola</i>	--	--	--	--	--	--
RT4003	<i>Gibbula umbilicalis</i>	- cineraria	--	--	--	--	--
RT4004	<i>Potamopyrgus antipodarum</i>	--	--	Hydrobia ulvae	--	--	--
RT4005	<i>Monocorophium sextonae</i>	- acherusicum	--	--	--	--	--
RT4006	<i>Palaemon macrodactylus</i>	--	--	--	--	--	- serratus
RT4007	<i>Gibbula pennanti</i>	- umbilicalis	Osilinus lineatus	- cineraria	--	- umbilicalis	--
RT4008	<i>Barleeia unifasciata</i>	--	--	--	--	--	Hydrobia ulvae
RT4009	<i>Monocorophium sextonae</i>	--	--	--	--	--	--
RT4010	<i>Gibbula pennanti</i>	- umbilicalis	--	--	--	--	--
RT4011	<i>Eatonina fulgida</i>	Rissoella opalina	--	--	--	--	- [fulgida]
RT4012	<i>Caprella mutica</i>	--	--	--	--	--	--
RT4013	<i>Mya arenaria</i>	--	--	- truncata	--	--	--
RT4014	<i>Crepidula fornicata</i>	--	--	--	--	--	--
RT4015	<i>Potamopyrgus antipodarum</i>	Hydrobia ulvae	Mercuria confusa	--	Rissoella diaphana	Ventrosia ventrosa	Hydrobia ulvae
RT4016	<i>Tubificoides heterochaetus</i>	- galiciensis	--	--	- swirencowi	--	- pseudogaster agg.
RT4017	<i>Alkmaria romijni</i>	Eclysippe cf. vanelli	--	--	--	--	--
RT4018	<i>Haploops setosa</i>	--	--	--	--	--	- tubicola
RT4019	<i>Ensis directus</i>	- arcuatus	--	--	--	--	- arcuatus
RT4020	<i>Lumbrineriopsis paradoxa</i>	--	--	--	--	--	--
RT4021	<i>Thyasira equalis</i>	- flexuosa	--	--	--	--	- sarsi
RT4022	<i>Assiminea grayana</i>	--	--	[Assminea] -	--	--	--
RT4023	<i>Melinna palmata</i>	--	--	--	--	--	--
RT4024	<i>Apocorophium lacustre</i>	--	--	--	--	--	[Corophium] -
RT4025	<i>Axinulus croulinensis</i>	--	--	--	--	--	--

Table 2. The identification of fauna made by participating laboratories for RT40 (arranged by participant). Names are given only where different from the AQC identification.

RT40	Taxon	LB1719	LB1720	LB1721	LB1722	LB1723
RT4001	<i>Sternaspis scutata</i>	--	[Sternapsis] -	--	--	--
RT4002	<i>Eusarsiella zostericola</i>	--	--	--	--	Ostracoda 0
RT4003	<i>Gibbula umbilicalis</i>	--	- [umbilicalus]	--	--	--
RT4004	<i>Potamopyrgus antipodarum</i>	--	--	--	--	Ventrosia ventrosa
RT4005	<i>Monocorophium sextonae</i>	Crassicorophium crassicorne	[Corophium] -	--	--	Corophium crassicorne
RT4006	<i>Palaemon macrodactylus</i>	- elegans	[Palemon] elegans	--	- longirostris	--
RT4007	<i>Gibbula pennanti</i>	- umbilicalis	- cineraria	- cineraria	- umbilicalis	- tumida
RT4008	<i>Barleeia unifasciata</i>	--	Crissila semistriata	Crissila semistriata	--	Hydrobia ulvae
RT4009	<i>Monocorophium sextonae</i>	--	[Corophium] -	--	--	[Corophium] -
RT4010	<i>Gibbula pennanti</i>	--	--	--	--	--
RT4011	<i>Eatonina fulgida</i>	Barleeia unifasciata	--	--	--	--
RT4012	<i>Caprella mutica</i>	--	--	--	- linearis	--
RT4013	<i>Mya arenaria</i>	--	Thracia phaseolina	--	--	--
RT4014	<i>Crepidula fornicata</i>	--	--	--	--	--
RT4015	<i>Potamopyrgus antipodarum</i>	Hydrobia ulvae	- [jenkinsi]	Hydrobia acuta neglecta	--	Gastropoda 0
RT4016	<i>Tubificoides heterochaetus</i>	--	0 0	- swirencowi	--	Oligochaeta 0
RT4017	<i>Alkmaria romijni</i>	--	Samytha sexcirrata	--	--	--
RT4018	<i>Haploops setosa</i>	--	Biblis gaimardi	--	--	--
RT4019	<i>Ensis directus</i>	- magnus	- arcuatus	- magnus	- ensis	--
RT4020	<i>Lumbrineriopsis paradoxa</i>	--	Cenogenus sp.	--	--	--
RT4021	<i>Thyasira equalis</i>	- sarsi	Thyasira [=Mendicula] ferruginea	- flexuosa	- sarsi	- flexuosa
RT4022	<i>Assiminea grayana</i>	--	Littorina tenebrosa	Hydrobia ulvae	--	--
RT4023	<i>Melinna palmata</i>	--	- elisabethae	--	--	Terebellidae 0
RT4024	<i>Apocorophium lacustre</i>	--	[Corophium] -	--	--	[Corophium] -
RT4025	<i>Axinulus croulinensis</i>	Mendicula ferruginosa	Thyasira obsolata	Thyasira sarsi	--	Thyasira ferruginea

Figure 1. The number of differences from the AQC identification of specimens distributed in RT40 for each of the participating laboratories. Arranged in order of increasing number of differences.



Specimen Images and Detailed Breakdown of Identifications

LabCodes are abbreviated in this report to exclude the Scheme year, *i.e.* LB1701a = Lab 01a. 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 Lab 01a & Lab 01b. For details of your LabCode please contact your Scheme representative or Thomson Unicmarine Ltd.

(Figure codes: A=anterior; P=posterior; L=lateral; D=dorsal; V=ventral)

RT4001 – *Sternaspis scutata* (Figure 1a); southern / alien species?

Substratum: Mud. Salinity: Full. Depth: Circalittoral. Geography: S. W. England. Condition: Good, Small.



Fig. 1a. *Sternaspis scutata* (RT4001) – L

No generic and no specific differences.

Lab 01, 05a, 05b and 20 incorrectly spelt the genus.

RT4002 – *Eusarsiella zostericola* (Figure 2a); alien species.

Substratum: Mud. Salinity: Slightly Reduced. Depth: Infralittoral. Geography: S. W. England. Condition: Good, Medium.



Fig. 2a. *Eusarsiella zostericola* (RT4002) – L

Two generic and two specific errors: Lab 09 identified as *Lasaea adansoni* (Figure 2b) (which is a mollusc that lacks jointed appendages); Lab 23 identified as Ostracoda (identification is required to species for RT exercises).



Fig. 2b. *Lasaea adansonii* (10633) – L

RT4003 – *Gibbula umbilicalis* (Figure 3a); southwestern species.

Substratum: Hard Substrate. Salinity: Full. Depth: Intertidal. Geography: Brittany. Condition: Good, Medium.



Fig. 3a. *Gibbula umbilicalis* (RT4003) - L

No generic and two specific differences: Lab 12 identified as *Gibbula cineraria* (Figure 3b) (which has finer sculpture and finer, grey pigment pattern); Lab 24 identified as *Gibbula magus* (no suitable material available) (which has flat topped whorls)

Lab 08 and 20 incorrectly spelt the species.



Fig. 3b. *Gibbula cineraria* (13349) – L

RT4004 – *Potamopyrgus antipodarum* (Figure 4a); alien species.

Substratum: Mixed. Salinity: Low. Depth: Sublittoral. Geography: S. E. England. Condition: Good, Large.



Fig. 4a. *Potamopyrgus antipodarum* (RT4004) - L

Five generic and five specific differences: Labs 03, 04 and 23 identified as *Ventrosia ventrosa* (Figure 4b) (which is smaller for the same number of whorls); Labs 09 and 14 identified as *Hydrobia ulvae* (Figure 4c) (which has less deep sutures).

Labs 05a and 05b incorrectly spelt the genus.



Fig. 4b. *Ventrosia ventrosa* (21816) - L



Fig. 4c. *Hydrobia ulvae* (26131) - L

RT4005 – *Monocorophium sextonae* (Figure 5a); alien species?

Substratum: Mud. Salinity: Full. Depth: Infralittoral. Geography: Northern Ireland. Condition: Fair, Medium (male).



Fig. 5a. *Monocorophium sextonae* (RT4005) – L

Five generic and seven specific differences: Labs 05a, 09, 10, 19 and 23 identified as *Crassikorophium crassicorne* or the synonym *Corophium crassicorne* (Figure 5b) (which has setae on the outer lateral proximal margin of uropod 1); Lab 12 identified as *M. acherusicum* (Figure 5c) (which lacks spines in the inner margin of antenna 2 peduncle article 4); Lab 24 identified as *Monocorophium* (identification is required to species for RT exercises).

Lab 01 incorrectly spelt the genus. Labs 05b and 20 recorded the synonym *Corophium sextonae*.



Fig. 5b. *Crassikorophium crassicorne* (33960) – L



Fig. 5c. *Monocorophium acherusicum* (Exc-1A) – L

RT4006 – *Palaemon macrodactylus* (Figure 6a); alien species.

Substratum: Mixed. Salinity: Slightly Reduced. Depth: Infralittoral. Geography: S. E. England. Condition: Good, Medium.



Fig. 6a. *Palaemon macrodactylus* (RT4006) – AL

No generic and five specific differences: Labs 09 and 22 identified as *Palaemon longirostris* (Figure 6b) (which has fewer dorsal teeth on the rostrum); Lab 18 identified as *P. serratus* (Figure 6c) (which has a distinctly upwardly curved rostrum); Labs 19 and 20 identified as *P. elegans* (Figure 6d) (which has a mandibular palp with two segments and fewer dorsal teeth on the rostrum).

Lab 20 incorrectly spelt the genus.



Fig. 6b. *Palaemon longirostris* (37700) – AL



Fig. 6c. *Palaemon serratus* (25066) – AL



Fig. 6d. *Palaemon elegans* (25074) – AL

RT4007 – *Gibbula pennanti* (Figure 7a); southern species.

Substratum: Hard Substrate. Salinity: Full. Depth: Intertidal. Geography: Brittany. Condition: Good, Medium.



Fig. 7a. *Gibbula pennanti* (RT4007) – D

Two generic and eighteen specific differences: Labs 01, 05a, 08, 10, 12, 17, 19, 22 and 24 identified as *Gibbula umbilicalis* (Figure 3a) (which has a larger umbilicus and more distinctly separated pigment bands); Labs 02, 05b, 07, 14, 20 and 21 *G. cineraria* (Figure 3b) (which has a finer pigment pattern); Lab 23 identified as *G. tumida* (Figure 7b) (which has flat-topped whorls); Labs 09 and 13 identified as *Osilinus lineatus* (no material available) (which lacks an umbilicus).



Fig. 7b. *Gibbula tumida* (43311) – D

RT4008 – *Barleeia unifasciata* (Figure 8a); southwestern species.

Substratum: Algae. Salinity: Full. Depth: Sublittoral. Geography: Brittany. Condition: Good, Medium.



Ten generic and ten specific differences: Labs 03, 18 and 23 identified as *Hydrobia ulvae* (Figure 4c) (which has yellow/green rather than reddish pigment); Lab 05a identified as *Setia pulcherrima* (no material available) (which has patterned pigment); Lab 07 identified as *Assimineia grayana* (Figure 22a) (which has a broader shell); Lab 04 identified as *Cingula trifasciata* (Figure 8b); Lab 05b identified as *Obtusella intersecta* (Figure 8c); Labs 09, 20 and 21 identified as *Crisilla semistriata*, or the synonym *Alvania semistriata* (Figure 8d) (all of which have spiral sculpture).

Fig. 8a. *Barleeia unifasciata* (RT4008) – L



Fig. 8b. *Cingula trifasciata* (10631) – L



Fig. 8c. *Obtusella intersecta* (45565) – L



Fig. 8d. *Crisilla semistriata* (22173) – L

RT4009 – *Monocorophium sextonae* (Figure 9a); alien species?

Substratum: Mixed. Salinity: Full. Depth: Infralittoral. Geography: N. Ireland. Condition: Fair, Medium (female).



Fig. 9a. *Monocorophium sextonae* (RT4009) – L

Two generic and three specific differences: Lab 01 identified as *Crassikorophium bonellii* (Figure 9b) (which is generally thinner and one curved plus two straight spines on the lateral inner proximal margin of antenna 1 peduncle article 1); Lab 09 identified as *Corophium volutator* (Figure 9c) (which has a clearly segmented urosome); Lab 24 identified as *Monocorophium* (identification is required to species for RT exercises).



Fig. 9b. *Crassikorophium bonellii* (43311) – L



Fig. 9c. *Corophium volutator* (41944) – L

RT4010 – *Gibbula pennanti* (Figure 10a); southern species.

Substratum: Hard Substrate. Salinity: Full. Depth: Infralittoral. Geography: Brittany. Condition: Good, Large.

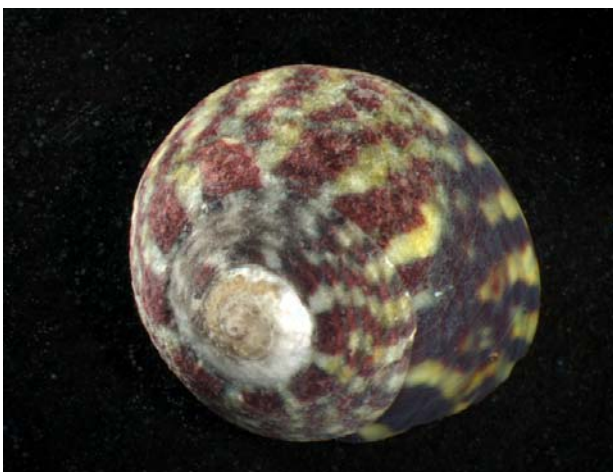


Fig. 10a. *Gibbula pennanti* (RT4010) – D

No generic and four specific differences: Labs 01, 05a and 05b identified as *Gibbula cineraria* (Figure 3b) (which has a finer, grey pigment pattern); Lab 12 identified as *Gibbula umbilicalis* (Figure 3a) (which has a larger umbilicus and more distinctly separated pigment bands).

Labs 05a, 05b, 20 and 23 incorrectly spelt the genus.

RT4011 – *Eatonina fulgida* (Figure 11a); southwestern species.

Substratum: Algae. Salinity: Full. Depth: Sublittoral. Geography: Brittany. Condition: Good, Medium.



Fig. 11a. *Eatonina fulgida* (RT4011) – L

Four generic and four specific differences: Lab 04 identified as *Cingula trifasciata* (Figure 8b) (which has less tumid whorls and spiral sculpture); Labs 10 and 12 identified as *Rissoella opalina* (Figure 11b) (which has a conspicuous dark patch on the body visible through the shell); Lab 19 identified as *Barleeia unifasciata* (Figure 8a) (which has less tumid whorls).

Labs 05a and 05b incorrectly spelt the genus; Lab 18 incorrectly spelt the species.

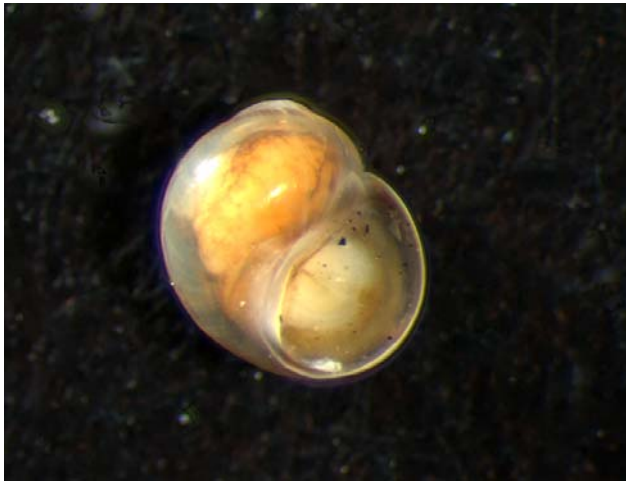


Fig. 11b. *Rissoella opalina* (10633) – L

RT4012 – *Caprella mutica* (Figure 12a); alien species.

Substratum: Hard Substrate. Salinity: Full. Depth: Infralittoral. Geography: Northern Ireland. Condition: Good, Medium (male).



Fig. 12a. *Caprella mutica* (RT4012) – L

One generic and two specific differences: Lab 09 identified as *Aeginina longicornis* (no material available) (which has a mandibular palp and short setae on antenna 2); Lab 22 identified as *Caprella linearis* (Figure 12b) (which has fewer dorsal tubercles, with a characteristic arrangement on pereon segment 5).



Fig. 12b. *Caprella linearis* (43314) – L

RT4013 – *Mya arenaria* (Figure 13a); alien species.

Substratum: Mud. Salinity: Slightly Reduced. Depth: Sublittoral. Geography: Northern Ireland. Condition: Good, Small (juvenile).



Fig. 13a. *Mya arenaria* (RT4013) – L

Two generic and four specific differences: Lab 04 identified as *Corbula gibba* (Figure 13b) (which has a less elongate shell); Labs 10 and 14 identified as *Mya truncata* (Figure 13c) (which has a less deep shell as a juvenile, with less prominent growth lines); Lab 20 identified as *Thracia phaseolina* (Figure 13d) (which has a granulated periostracum).

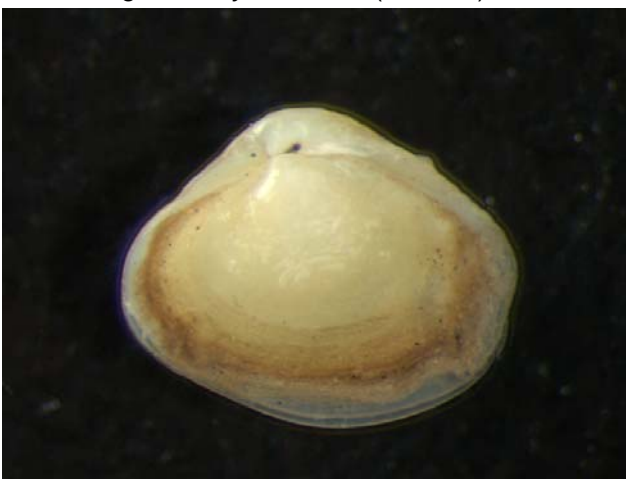


Fig. 13b. *Corbula gibba* (40343) – L



Fig. 13c. *Mya truncata* (8195) – L



Fig. 13d. *Thracia phaseolina* (28969) – L

RT4014 – *Crepidula fornicata* (Figure 14a); alien species.

Substratum: Mixed. Salinity: Full. Depth: Infralittoral. Geography: S.E. England. Condition: Fair, Small (juvenile).

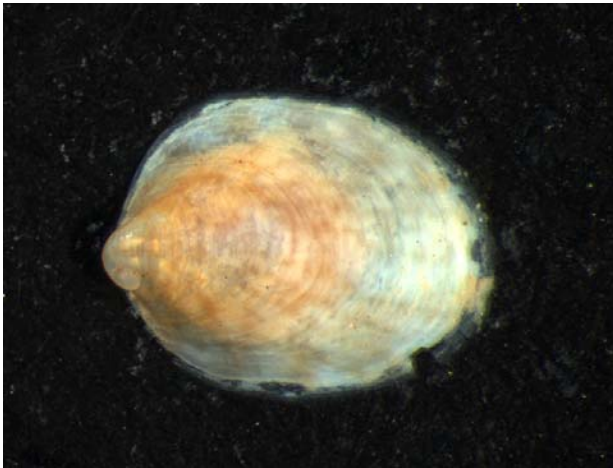


Fig. 14a. *Crepidula fornicata* (RT4014) – D

Two generic and two specific differences: Labs 05a identified as *Acmaea virginea*, a synonym of *Tectura virginea* (Figure 14b); Lab 09 identified as *Helcion pellucidum* (Figure 14c) (both of which have a non-spiral apex).



Fig. 14b. *Tectura virginea* (11064) – D



Fig. 14c. *Helcion pellucidum* (42509) – D

RT4015 – *Potamopyrgus antipodarum* (Figure 15a); alien species.

Substratum: Mud. Salinity: Low. Depth: Sublittoral. Geography: S.E. England. Condition: Good/Fair, Small/Medium.



Fig. 15a. *Potamopyrgus antipodarum* (RT4015) – L

Thirteen generic and thirteen specific differences: Labs 05a, 05b, 10 and 15 identified as *Rissoella diaphana* (Figure 15b) (which has a ridge across the operculum and is restricted to full salinity); Labs 06 and 17 identified as *Ventrosia ventrosa* (Figure 4b); Lab 21 identified as *Hydrobia acuta neglecta* (Figure 15d) (both of which are smaller for the same number of whorls); Labs 12, 18 and 19 identified as *Hydrobia ulvae* (Figure 4c) (which has less tumid whorls and less deep sutures); Lab 08 identified as *Assimineia grayana* (Figure 22a); Lab 13 identified as *Mercuria confusa* (Figure 15c) (both of which are broader across the base relative to their height); Lab 23 identified as Gastropoda (identification is required to species for RT exercises).

Lab 24 incorrectly spelt the genus.

Labs 09 and 20 recorded the synonym *Hydrobia jenkinsi*.



Fig. 15b. *Rissoella diaphana* (10633) – L



Fig. 15c. *Mercuria confusa* (36206) – L



Fig. 15d. *Hydrobia acuta neglecta* (21804) – L

RT4016 – *Tubificoides heterochaetus* (Figure 16a) ; alien species.

Substratum: Mixed. Salinity: Low. Depth: Infralittoral. Geography: S.E. England. Condition: Fair, Medium.



Fig. 16a. *Tubificoides heterochaetus* (RT4016) – L

Three generic and twelve specific differences: Lab 04 identified as *Tubificoides amplivasatus* (Figure 16b); Labs 08 and 12 identified as *T. galiciensis* (Figure 16c); Lab 05b identified as *Monopylephorus rubroniveus* (Figure 16d shows *Monopylephorus rubroniveus?*); Labs 15 and 21 identified as *T. swirencowi* (no material available) (all of which have hair chaetae); Labs 05a, 09 and 18 identified as *T. pseudogaster* agg. (Figure 16e) (which lacks long posterior chaetae); Lab 10 identified as *T. benedii* (Figure 16f) (which is strongly papillated); Lab 20 did not supply data for this specimen and Lab 23 identified as Oligochaeta (identification is required to species for RT exercises).



Fig. 16b. *Tubificoides amplivasatus* (25557) – L



Fig. 16c. *T. galiciensis* (40400) – L



Fig. 16d. *Monopylephorus rubroniveus*? (32149) – L



Fig. 16e. *T. pseudogaster* agg. (38251) – L



Fig. 16f. *T. benedii* (43103) – L

RT4017 – *Alkmaria romijni* (Figure 17a); southern / alien species?

Substratum: Mud. Salinity: Slightly Reduced. Depth: Infralittoral. Geography: S.E. England. Condition: Fair/Poor, Medium.



Fig. 17a. *Alkmaria romijni* (RT4017) – L

Four generic and four specific differences: Lab 09 identified as *Ampharete* sp. juv. (Figure 17b shows *A. falcata*) (which has paleae, four pairs of branchiae and fourteen thoracic segments with notopodial chaetae); Labs 10 and 12 as *Pterolysippe vanelli* or the synonym *Eclysippe* cf. *vanelli* (Figure 17c) (which has fifteen thoracic segments with notopodial chaetae, and has elongated mid body segments); Lab 20 identified as *Samytha sexcirrata* (Figure 17d) (which has seventeen thoracic segments with notopodial chaetae).

Lab 04 recorded the synonym *Hypania romijni*.



Fig. 17b. *Ampharete falcata* (37530) – L



Fig. 17c. *Pterolysippe vanelli* (40924) – AL



Fig. 17d. *Samytha sexcirrata* (42617) – L

RT4018 – *Haploops setosa* (Figure 18a); northern species.

Substratum: Mixed. Salinity: Full. Depth: Circalittoral. Geography: S. Greenland. Condition: Good, Medium.



Fig. 18a. *Haploops setosa* (RT4018) – L

One generic and two specific differences: Lab 18 identified as *Haploops tubicola* (Figure 18b) (which lacks long dorsal setae and has two corneal lenses); Lab 20 identified as *Biblis gaimardi* (sic.), a misspelling of *Byblis gaimardi* (Figure 18c) (which has a distally expanded pereopod 7 basis posterior lobe).



Fig. 18b. *Haploops tubicola* (12342) – L



Fig. 18c. *Byblis gaimardi* (46690) – L

RT4019 – *Ensis directus* (Figure 19a) ; alien species.

Substratum: Sand. Salinity: Full. Depth: Infralittoral. Geography: Holland. Condition: Good, Large.



Fig. 19a. *Ensis directus* (RT4019) – L

No generic and eleven specific differences: Labs 01, 03, 05a, 05b, 07, 12, 18, 19 and 20 identified as *Ensis magnus*, or the synonym *E. arcuatus* (Figure 19b); Lab 22 identified as *E. ensis* (Figure 19c) (both of which have a more elongate, more strongly curved shell).

Lab 09 recorded the synonym *E. americanus*.



Fig. 19b. *Ensis magnus* (9834) – L



Fig. 19c. *Ensis ensis* (30719) – L

RT4020 – *Lumbrineriopsis paradoxa* (Figure 20a) ; southwestern species.

Substratum: Gravel. Salinity: Full. Depth: Circalittoral. Geography: S. E. England. Condition: Fair, Medium.



Fig. 20a. *Lumbrineriopsis paradoxa* (RT4020) – L

One generic and one specific difference: Lab 20 identified as *Cenogenus* sp. (Figure 20b) (which has a branchial lobe on anterior parapodia and has multidentate (not bidentate) hooded hooks).

Lab 24 incorrectly spelt the genus



Fig. 20b. *Cenogenus* sp. (Fugro68_9998dunquin)– L

RT4021 – *Thyasira equalis* (Figure 21a); northern species.

Substratum: Mud. Salinity: Full. Depth: Circalittoral. Geography: N. North Sea. Condition: Fair, Medium.



Fig. 21a. *Thyasira equalis* (RT4021) – L

Two generic and thirteen specific differences: Labs 01, 03, 05a, 12, 21, 23 and 24 identified as *Thyasira flexuosa* (Figure 21b); Labs 09, 18, 19 and 22 identified as *T. sarsi* (Figure 21c) (both of which have a projecting auricle); Lab 10 identified as *Axinulus* sp. (Figure 25a shows *A. croulinensis*) (which has a single demibranch visible through the shell); Lab 20 identified as *Thyasira* [= *Mendicula*] *ferruginea* (Figure 21d) (which has an elongate shell with a rust-coloured deposit).



Fig. 21b. *Thyasira flexuosa* (36383) – L



Fig. 21c. *Thyasira sarsi* (16863) – L



Fig. 21d. *Mendicula ferruginea* (46849) – L

RT4022 – *Assiminea grayana* (Figure 22a); southern species.

Substratum: Mixed. Salinity: Low. Depth: Intertidal. Geography: S.E. England. Condition: Fair, Medium.



Fig. 22a. *Assiminea grayana* (RT4022) – L

Six generic and six specific differences: Lab 05a identified as *Pusillina sarsi* (Figure 22b); Lab 05b identified as *Rissoa interrupta* (Figure 22c) (both of which have a pigment pattern); Labs 07, 21 and 24 identified as *Hydrobia ulvae* (Figure 4c) (which has a more elongate shell); Lab 20 identified as *Littorina tenebrosa*, a synonym of *L. saxatilis* (Figure 22d) (which has a broader shell).

Lab 14 incorrectly spelt the genus.



Fig. 22b. *Pusillina sarsi* (11048) – L



Fig. 22c. *Rissoa interrupta* (10630) – L



Fig. 22d. *Littorina saxatilis* (11417) – L

RT4023 – *Melinna palmata* (Figure 23); southern species.

Substratum: Mud. Salinity: Slightly Reduced. Depth: Circalittoral. Geography: S.W. England. Condition: Fair, Medium.



Fig. 23a. *Melinna palmata* (RT4023) – L

Three generic and five specific differences: Lab 01 identified as *Melinnopsis rostrata* (no material available) (which lacks postbranchial dorsal hooks and has neurochaetae on chaetiger 4); Labs 10 and 20 identified as *Melinna elisabethae* (Figure 23b) (which has strongly curved postbranchial dorsal hooks); Lab 23 identified as Terebellidae; Lab 24 identified as Ampharetidae (identification is required to species for RT exercises).



Fig. 23b. *Melinna elisabethae* (132257) – L

RT4024 – *Apocorophium lacustre* (Figure 24a) southern / alien species?

Substratum: Mixed. Salinity: Low. Depth: Sublittoral. Geography: S.E. England. Condition: Fair, Medium (Female).



Fig. 24a. *Apocorophium lacustre* (RT4024) – L

No generic and no specific differences.

Labs 05a, 05b, 09, 18, 20 and 23 recorded the synonym *Corophium lacustre*.

RT4025 – *Axinulus croulinensis* (Figure 25a) ; northern species.

Substratum: Mud. Salinity: Full. Depth: Circalittoral. Geography: N. North Sea. Condition: Good, Small.

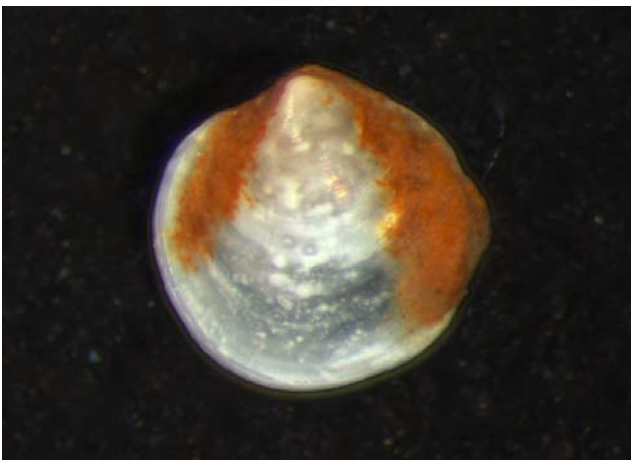


Fig. 25a. *Axinulus croulinensis* (RT4025) – L

Seven generic and seven specific differences; Lab 01 identified as *Thyasira flexuosa* (Figure 21b); Lab 09 identified as *T. succisa* (Figure 25c); Lab 20 identified as *T. obsoleta* (Figure 25b); Lab 21 identified as *T. sarsi* (Figure 21c) (all of which have a projecting auricle); Lab 05a identified as *T. equalis*; (Figure 21a) (which has paired demibranchs and a flattened postero-dorsal margin); Labs 19 and 23 identified as *Mendicula ferruginosa* or *T. ferruginea* (Figure 21d) (which is longer than high and has a rust-coloured deposit).

Lab 05b incorrectly spelt the genus.

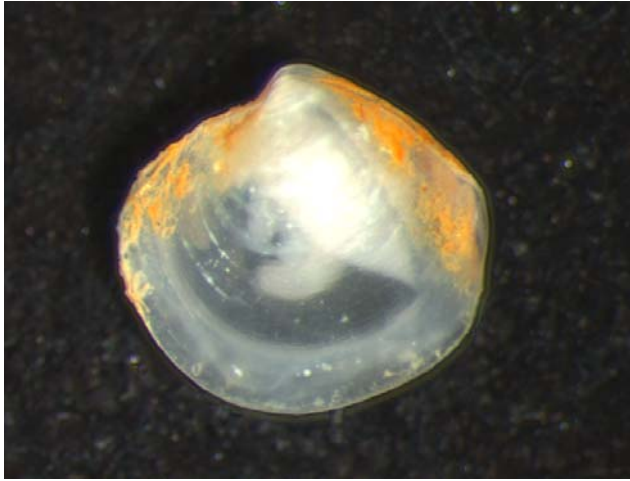


Fig. 25b. *Thyasira obsoleta* (48084) – L



Fig. 25c. *Thyasira succisa* (47544) – L

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<i>Tubificoides galiciensis</i>	16c
<i>Tubificoides heterochaetus</i>	16a
<i>Tubificoides pseudogaster</i> agg.	16e
<i>Ventrosia ventrosa</i>	4b

Ring Test Specimen Return Instructions

Please return all ring test specimens by 18th November 2011. These are reference collection specimens and must be returned to our museum. Your laboratory will be ineligible for future ring tests if specimens are not returned.

Return address: **David Hall, Thomson Unicmarine Ltd., 7 Diamond Centre,
Works Road, Letchworth, Hertfordshire SG6 1LW, UK**