



NMBACQ

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Ring Test Bulletin – RTB#63



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RING TEST DETAILS

Ring Test #63 (Year 29)

Type/Contents – General

Circulated – 28/10/22

Results deadline – 16/12/22

Number of Subscribing Laboratories – 23

Number of Participating Laboratories – 20

Number of Results Received – 21*

*multiple data entries per laboratory permitted

Summary of differences

Specimen	Genus	Species	Condition / Size	Total differences for 21 returns	
				Genus	Species
RT6301	<i>Onchidoris</i>	<i>muricata</i>	fair, medium	5	5
RT6302	<i>Macrochaeta</i>	<i>clavicornis</i>	fair, medium	2	2
RT6303	<i>Scoelepis</i>	<i>korsuni</i>	fair, medium	1	4
RT6304	<i>Eunereis</i>	<i>longissima</i>	fair, small	2	3
RT6305	<i>Pycnogonum</i>	<i>litorale</i>	good, large	0	0
RT6306	<i>Anguinella</i>	<i>palmata</i>	good, small portions	5	5
RT6307	<i>Pholoe</i>	<i>pallida</i>	fair, medium	0	0
RT6308	<i>Hyale</i>	<i>pontica</i>	good, medium	1	1
RT6309	<i>Glycera</i>	<i>alba</i>	good, small	0	2
RT6310	<i>Ophelina</i>	<i>norvegica</i>	good, large	0	1
RT6311	<i>Harmothoe</i>	<i>extenuata</i>	fair, small	2	19
RT6312	<i>Limopsis</i>	<i>aurita</i>	good, medium, 8-15mm	0	6
RT6313	<i>Travisia</i>	<i>forbesii</i>	good, small	0	0
RT6314	<i>Eucratea</i>	<i>loricata</i>	good, small portions	0	0
RT6315	<i>Myrtea</i>	<i>spinifera</i>	good, medium, 8-15mm	1	1
RT6316	<i>Parvipalpus</i>	<i>capillaceus</i>	fair, small, female	0	1
RT6317	<i>Dipolydora</i>	<i>flava</i>	fair, medium	1	8
RT6318	<i>Lovenella</i>	<i>clausa</i>	fair, small portions	12	12
RT6319	<i>Amphicteis</i>	<i>midas</i>	good, small	0	3
RT6320	<i>Malmgrenia</i>	<i>ljungmani</i>	fair, small	1	7
RT6321	<i>Paraleptopentacta</i>	<i>elongata</i>	good, small	3	3
RT6322	<i>Notomastus</i>	<i>latericeus</i>	fair, medium	0	1
RT6323	<i>Magallana</i>	<i>gigas</i>	good, medium, 50-70mm	0	0
RT6324	<i>Polycera</i>	<i>quadrilineata</i>	fair, small	10	12
RT6325	<i>Astrorhiza</i>	<i>limicola</i>	good, medium	4	4
Total differences				50	100
Average differences /lab.				2.4	4.8

Figure 1. The number of differences from the AQC identification of specimens distributed in RT63 for each of the participating laboratories. Arranged in order of increasing number of differences (by specific followed by generic errors).

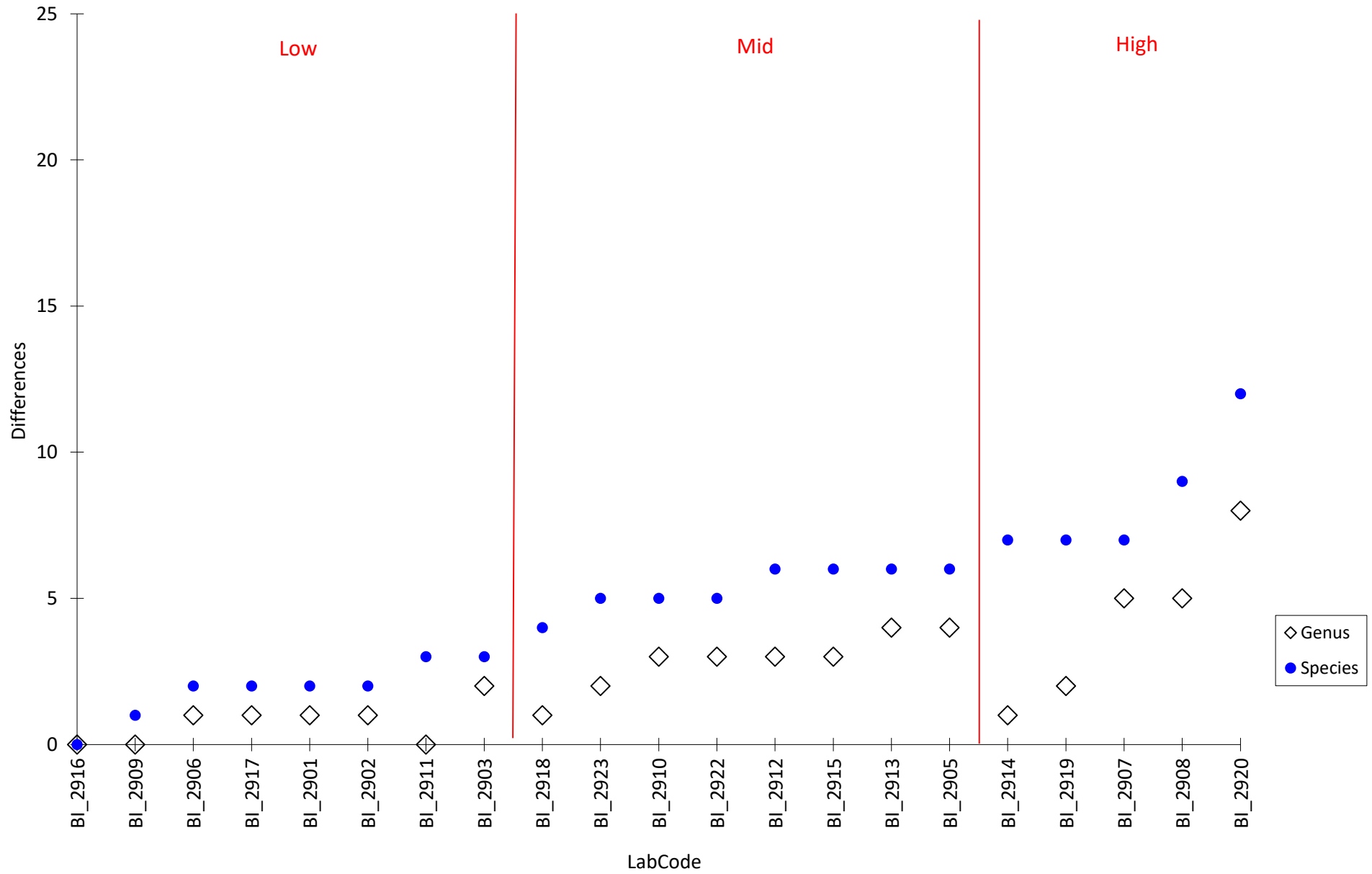


Table 1. The identification of fauna made by participating laboratories for RT63 (arranged by specimen). Names are given only where different from the AQC identification.

	RT6301	RT6302	RT6303	RT6304	RT6305	RT6306	RT6307	RT6308	RT6309	RT6310	RT6311	RT6312	RT6313
Taxon	<i>Onchidoris muricata</i>	<i>Macrochaeta clavicornis</i>	<i>Scolecipis korsuni</i>	<i>Eunereis longissima</i>	<i>Pycnogonum litorale</i>	<i>Anguinella palmata</i>	<i>Pholoe pallida</i>	<i>Hyale pontica</i>	<i>Glycera alba</i>	<i>Ophelina norvegica</i>	<i>Harmothoe extenuata</i>	<i>Limopsis aurita</i>	<i>Travisia forbesii</i>
BI_2901	Atalodoris depressa	--	--	--	--	--	--	- [[lubbockiana]	--	--	- viridis	--	--
BI_2902	- [bilamellata]	--	--	--	--	--	--	--	--	--	- viridis	--	--
BI_2903	--	--	--	--	--	--	--	--	--	--	- viridis	--	--
BI_2905	Adalaria proxima	--	--	--	--	Alcyonidium parasiticum	--	--	--	--	- fernandi	--	--
BI_2906	--	--	--	Rullierinereis ancornunezi	--	--	--	--	--	--	- fernandi	--	--
BI_2907	--	--	Spio armata agg	--	--	--	--	Apohyale perieri	--	--	- viridis	--	--
BI_2908	Cadlina laevis	Bradabyssa villosa	--	--	- [littorale]	--	--	--	--	- acuminata	- glabra	- minuta	--
BI_2909	- [bilamellata]	--	--	--	--	--	--	--	--	--	--	--	--
BI_2910	--	Bradabyssa villosa	--	--	--	--	--	--	--	--	- viridis	- minuta	--
BI_2911	--	--	--	--	--	--	--	--	--	--	- viridis	--	--
BI_2912	Adalaria proxima	--	- finmarchicus	--	--	--	--	--	--	--	- viridis	--	--
BI_2913	--	--	--	--	--	Bougainvillia muscus	--	--	--	--	Malmgrenia jungmani	--	--
BI_2914	--	--	- tridentata	- elitoralis	--	--	--	--	--	--	- viridis	- minuta	--
BI_2915	--	--	--	--	--	Leucosolenia complicata	--	- [[lubbockiana]	--	--	- aspera	--	--
BI_2916	--	--	--	--	--	--	--	--	--	--	--	--	--
BI_2917	--	--	--	--	--	--	--	--	--	--	- imbricata	--	--
BI_2918	Adalaria proxima	--	--	--	--	--	--	--	--	--	- impar	- minuta	--
BI_2919	--	--	- squamata	--	- [littorale]	Leucosolenia complicata	--	--	- tridactyla	--	- fernandi	--	--
BI_2920	--	--	--	Ceratocephale loveni	--	Leucosoleniidae 0	--	--	- unicornis	--	Malmgrenia jungmani	--	--
BI_2922	--	--	--	--	--	--	--	--	--	--	- glabra	- minuta	--
BI_2923	--	--	--	--	--	--	--	--	--	--	- viridis	- minuta	--

Table 1. The identification of fauna made by participating laboratories for RT63 (arranged by specimen). Names are given only where different from the AQC identification.

	RT6314	RT6315	RT6316	RT6317	RT6318	RT6319	RT6320	RT6321	RT6322	RT6323	RT6324	RT6325
Taxon	<i>Eucratea loricata</i>	<i>Myrtea spinifera</i>	<i>Parvipalpus capillaceus</i>	<i>Dipolydora flava</i>	<i>Lovenella clausa</i>	<i>Amphicteis midas</i>	<i>Malmgrenia ljunmani</i>	<i>Paraleptopentacta elongata</i>	<i>Notomastus latericeus</i>	<i>Magallana gigas</i>	<i>Polycera quadrilineata</i>	<i>Astrorhiza limicola</i>
BI_2901	[Eucrateria] -	--	--	--	--	--	--	--	--	--	--	--
BI_2902	--	--	--	--	--	--	--	--	--	--	Palio dubia	--
BI_2903	--	--	--	--	Phialella quadrata	--	--	--	--	--	Thecacera pennigera	--
BI_2905	--	--	--	--	Phialella quadrata	--	--	--	- 0	--	Ancula gibbosa	--
BI_2906	--	--	--	--	--	--	--	--	--	--	--	--
BI_2907	--	--	- [capillaceus]	Pseudopolydora antennata	Phialella quadrata	--	- arenicolae	--	--	--	Thecacera pennigera	--
BI_2908	--	--	--	- caulleryi	--	--	--	Ocnus lacteus	--	--	Adalaria loveni	Leucosolenia variabilis
BI_2909	--	--	--	--	--	- gunneri	--	--	--	--	--	--
BI_2910	--	--	--	--	Phialella quadrata	--	--	[Leptopentacta] -	--	--	- [norvegica]	Molgula occulta
BI_2911	--	--	--	--	--	--	- lunulata	--	--	--	- kernowensis	--
BI_2912	--	--	--	--	Phialella quadrata	- gunneri	--	--	--	--	Trapania lineata	--
BI_2913	--	--	--	- coeca	Phialella quadrata	--	- arenicolae	--	--	--	Palio nothus	--
BI_2914	--	--	--	- coeca	--	--	- andreapolis	--	--	--	Ancula gibbosa	--
BI_2915	--	--	--	- saintjosephi	Phialella quadrata	--	- marphysae	Ocnus lacteus	--	--	--	--
BI_2916	--	--	--	--	--	--	--	--	--	--	--	--
BI_2917	--	--	--	--	Phialella quadrata	--	--	--	--	--	--	--
BI_2918	--	--	--	- saintjosephi	--	--	--	--	--	--	--	--
BI_2919	--	--	--	- Coeca	Phialella quadrata	--	- lunulata	--	--	--	--	--
BI_2920	--	Venus casina	- onubensis	- coeca	Phialella quadrata	- gunneri	Enipo elisabethae	Holothuroidea indet. 0	--	--	Nudibranchia indet. 0	--
BI_2922	--	--	--	--	Gonothyrea loveni	--	--	--	--	--	Thecacera pennigera	Molgula 0
BI_2923	--	--	--	--	Phialella quadrata	--	--	--	--	--	- faeroensis	Polyclinidae 0

Table 2. The identification of fauna made by participating laboratories for RT63 (arranged by participant). Names are given only where different from the AQC identification.

	Taxon	BI_2901	BI_2902	BI_2903	BI_2905	BI_2906	BI_2907	BI_2908	BI_2909	BI_2910	BI_2911
RT6301	<i>Onchidoris muricata</i>	Atalodoris depressa	- [bilamellata]	--	Adalaria proxima	--	--	Cadlina laevis	- [bilamellata]	--	--
RT6302	<i>Macrochaeta clavicornis</i>	--	--	--	--	--	--	Bradabyssa villosa	--	Bradabyssa villosa	--
RT6303	<i>Scolelepis korsuni</i>	--	--	--	--	--	Spio armata agg.	--	--	--	--
RT6304	<i>Eunereis longissima</i>	--	--	--	--	Rullierinereis ancornunezi	--	--	--	--	--
RT6305	<i>Pycnogonum litorale</i>	--	--	--	--	--	--	- [littorale]	--	--	--
RT6306	<i>Anguinea palmata</i>	--	--	--	Alcyonidium parasiticum	--	--	--	--	--	--
RT6307	<i>Pholoe pallida</i>	--	--	--	--	--	--	--	--	--	--
RT6308	<i>Hyale pontica</i>	- [lubbockiana]	--	--	--	--	Apothyale perieri	--	--	--	--
RT6309	<i>Glycera alba</i>	--	--	--	--	--	--	--	--	--	--
RT6310	<i>Ophelina norvegica</i>	--	--	--	--	--	--	- acuminata	--	--	--
RT6311	<i>Harmothoe extenuata</i>	- viridis	- viridis	- viridis	- fernandi	- fernandi	- viridis	- glabra	--	- viridis	- viridis
RT6312	<i>Limopsis aurita</i>	--	--	--	--	--	--	- minuta	--	- minuta	--
RT6313	<i>Travisia forbesii</i>	--	--	--	--	--	--	--	--	--	--
RT6314	<i>Euratea loricata</i>	[Eucratia] -	--	--	--	--	--	--	--	--	--
RT6315	<i>Myrtea spinifera</i>	--	--	--	--	--	--	--	--	--	--
RT6316	<i>Parvipalpus capillaceus</i>	--	--	--	--	--	- [capillaceus]	--	--	--	--
RT6317	<i>Dipolydora flava</i>	--	--	--	--	--	Pseudopolydora antennata	- caulleryi	--	--	--
RT6318	<i>Lovenella clausa</i>	--	--	Phialella quadrata	Phialella quadrata	--	Phialella quadrata	--	--	Phialella quadrata	--
RT6319	<i>Amphicteis midas</i>	--	--	--	--	--	--	--	- gunneri	--	--
RT6320	<i>Malmgrenia ljunmani</i>	--	--	--	--	--	- arenicolae	--	--	--	- lunulata
RT6321	<i>Paraleptopentacta elongata</i>	--	--	--	--	--	--	Ocnus lacteus	--	[Leptopentacta] -	--
RT6322	<i>Notomastus latericeus</i>	--	--	--	- 0	--	--	--	--	--	--
RT6323	<i>Magallana gigas</i>	--	--	--	--	--	--	--	--	--	--
RT6324	<i>Polycera quadrilineata</i>	--	Palio dubia	Thecacera pennigera	Ancula gibbosa	--	Thecacera pennigera	Adalaria loveni	--	- [norvegica]	- kernowensis
RT6325	<i>Astrorhiza limicola</i>	--	--	--	--	--	--	Leucosolenia variabilis	--	Molgula occulta	--

Table 2. The identification of fauna made by participating laboratories for RT63 (arranged by participant). Names are given only where different from the AQC identification.

	Taxon	BI_2912	BI_2913	BI_2914	BI_2915	BI_2916	BI_2917	BI_2918	BI_2919	BI_2920	BI_2922	BI_2923
RT6301	<i>Onchidoris muricata</i>	Adalaria proxima	--	--	--	--	--	Adalaria proxima	--	--	--	--
RT6302	<i>Macrochaeta clavicornis</i>	--	--	--	--	--	--	--	--	--	--	--
RT6303	<i>Scolecopsis korsuni</i>	- finmarchicus	--	- tridentata	--	--	--	--	- squamata	--	--	--
RT6304	<i>Eunereis longissima</i>	--	--	- elitoral	--	--	--	--	--	Ceratocephale loveni	--	--
RT6305	<i>Pycnogonum litorale</i>	--	--	--	--	--	--	--	- [littorale]	--	--	--
RT6306	<i>Anguinella palmata</i>	--	Bougainvillia muscus	--	Leucosolenia complicata	--	--	--	Leucosolenia complicata	Leucosoleniidae 0	--	--
RT6307	<i>Pholoe pallida</i>	--	--	--	--	--	--	--	--	--	--	--
RT6308	<i>Hyale pontica</i>	--	--	--	- [lubbockiana]	--	--	--	--	--	--	--
RT6309	<i>Glycera alba</i>	--	--	--	--	--	--	--	- tridactyla	- unicornis	--	--
RT6310	<i>Ophelina norvegica</i>	--	--	--	--	--	--	--	--	--	--	--
RT6311	<i>Harmothoe extenuata</i>	- viridis	Malmgrenia ljunmani	- viridis	- aspera	--	- imbricata	- impar	- fernandi	Malmgrenia ljunmani	- glabra	- viridis
RT6312	<i>Limopsis aurita</i>	--	--	- minuta	--	--	--	- minuta	--	--	- minuta	- minuta
RT6313	<i>Travisia forbesii</i>	--	--	--	--	--	--	--	--	--	--	--
RT6314	<i>Eucratea loricata</i>	--	--	--	--	--	--	--	--	--	--	--
RT6315	<i>Myrtea spinifera</i>	--	--	--	--	--	--	--	--	Venus casina	--	--
RT6316	<i>Parvipalpus capillaceus</i>	--	--	--	--	--	--	--	--	- onubensis	--	--
RT6317	<i>Dipolydora flava</i>	--	- coeca	- coeca	- saintjosephi	--	--	- saintjosephi	- Coeca	- coeca	--	--
RT6318	<i>Lovenella clausa</i>	Phialella quadrata	Phialella quadrata	--	Phialella quadrata	--	Phialella quadrata	--	Phialella quadrata	Phialella quadrata	Gonothyrea loveni	Phialella quadrata
RT6319	<i>Amphicteis midas</i>	- gunneri	--	--	--	--	--	--	--	- gunneri	--	--
RT6320	<i>Malmgrenia ljunmani</i>	--	- arenicolae	- andreapolis	- marphysae	--	--	--	- lunulata	Enipo elisabethae	--	--
RT6321	<i>Paraleptopentacta elongata</i>	--	--	--	Ocnus lacteus	--	--	--	--	Holothuroidea indet. 0	--	--
RT6322	<i>Notomastus latericeus</i>	--	--	--	--	--	--	--	--	--	--	--
RT6323	<i>Magallana gigas</i>	--	--	--	--	--	--	--	--	--	--	--
RT6324	<i>Polycera quadrilineata</i>	Trapania lineata	Palio nothus	Ancula gibbosa	--	--	--	--	--	Nudibranchia indet. 0	Thecacera pennigera	- faeroensis
RT6325	<i>Astrorhiza limicola</i>	--	--	--	--	--	--	--	--	--	Molgula 0	Polyclinidae 0

Specimen Images and Detailed Breakdown of Identifications

RT63 included twenty-five species (the whole circulation) never previously sent. These included several species anticipated to change our understanding of the fauna and to help with the development of a taxonomic discrimination protocol. Several participants highlighted problems with the originally circulated identifications and the results have identified areas that require further research; these are detailed under the specimen headings and in the discussion section below.

LabCodes are abbreviated in this report to exclude the Scheme year, e.g. BI_2901 = Lab 01. 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 APEM Ltd.

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

RT6301 – *Onchidoris muricata* (O.F. Müller, 1776) (Figure 1a)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: northeast England. Condition: Fair. Size: Medium. Specimens from three samples.



Fig. 1a. *Onchidoris muricata* (RT6301, 71995) – D

Five generic and specific differences: Lab 08 identified as *Cadlina laevis* (Figure 1b) (which has smaller mantle tubercles); Lab 01 identified as *Atalodoris depressa*, a synonym of *Idaliadoris depressa* (Figure 1c) (which has conical mantle tubercles); Labs 05, 12 and 18 identified as *Adalaria proxima* (no material available) (which has mantle tubercles with pointed tops).

Labs 02 and 09 identified as *Onchidoris bilamellata* (Figure 1d); this species has a horseshoe-shaped gill cirrlet in adults but some of the circulated specimens (Figure 1e) had an elliptical cirrlet with more gill pinnules than typical for *O. muricata*; these have been accepted as *O. bilamellata*.



Fig. 1b. *Cadlina laevis* (P8811, 72684) – D

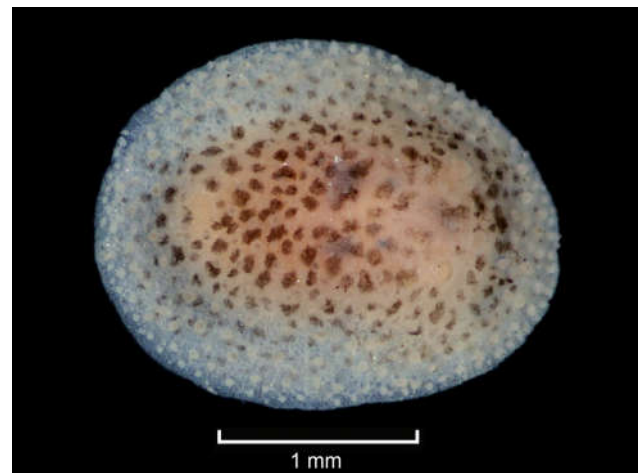


Fig. 1c. *Idaliadoris depressa* (P2905, 61539) – D

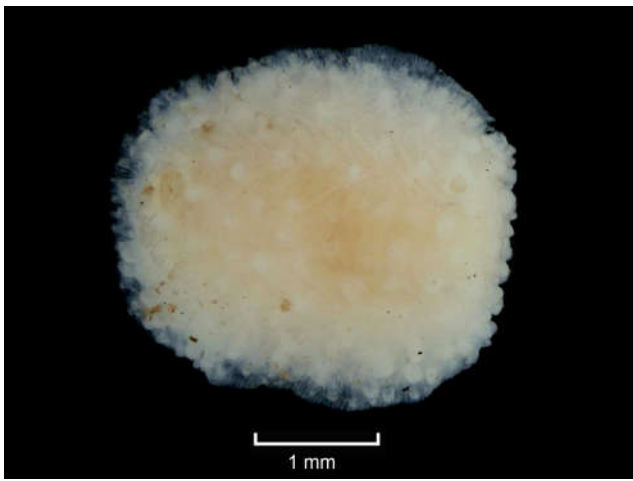


Fig. 1d. *Onchidoris bilamellata* (P3341, 62625)
– D

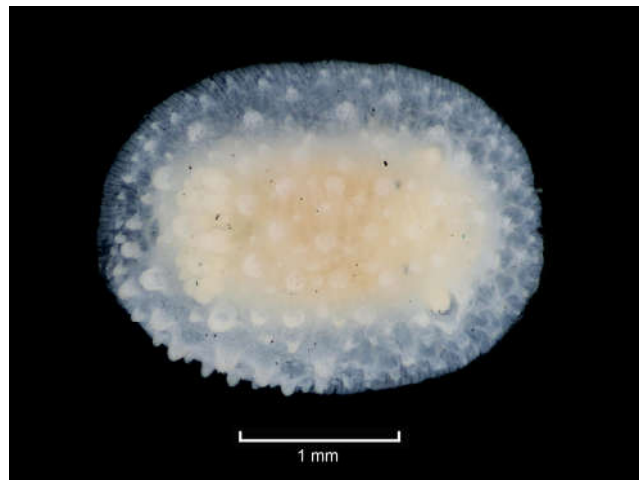


Fig. 1e. *Onchidoris bilamellata* ? (RT6301, 71995) – D

RT6302 – *Macrochaeta clavicornis* (M. Sars, 1835) (Figure 2a)

Substratum: Mud. Salinity: Full (Euhaline). Depth: Infralittoral. Geography: southwest England. Condition: Fair. Size: Medium. Specimens from five samples.



Fig. 2a. *Macrochaeta clavicornis* (RT6302, 6939)
– D

Two generic and specific differences: Labs 08 and 10 identified as *Bradabyssa villosa* (Figure 2b shows a *Bradabyssa* sp., possibly *B. villosa*) (which has multiarticulate capillaries and lacks eyes).



Fig. 2b. *Bradabyssa* sp. (413644, 42980) – L

RT6303 – *Scolelepis korsuni* Sikorski, 1994 (Figures 3a-c)

Substratum: Sand. Salinity: Full (Euhaline). Depth: Circalittoral (Lower Shelf). Geography: North Sea. Condition: Fair. Size: Medium. Specimens from six samples.



Fig. 3a. *Scolelepis korsuni*_(RT6303; 64136) – D

One generic and four specific differences: Lab 07 identified as *Spio armata* agg. (Figure 3d) (which has a truncated prostomium); Lab 19 identified as *Scolelepis squamata* (Figures 3e-3g) (which has the tips of the notopodial postchaetal lobes separated from the branchial tips); Lab 14 identified as *Scolelepis tridentata* (Figures 3h-3j) (which has hooks with fewer than four teeth and, usually, dark lateral markings); Lab 12 identified as *Scolelepis finmarchicus* (no material available) (which lacks an occipital tentacle).



Fig. 3b. *Scolelepis korsuni*_(RT6303; 64136) – L

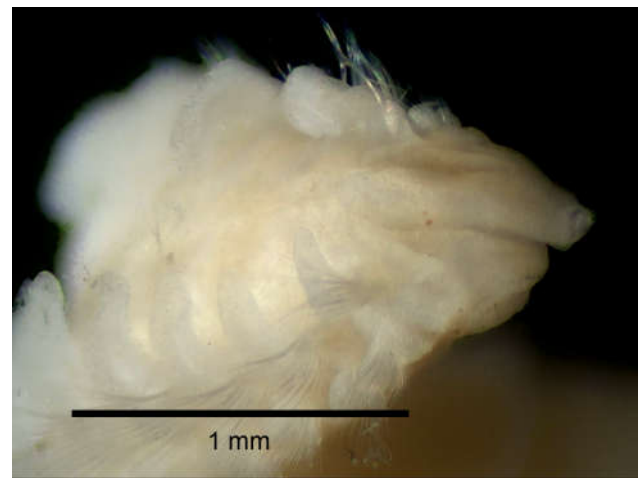


Fig. 3c. *Scolelepis korsuni*_(RT6303; 64136) – D, head



Fig. 3d. *Spio armata* (413532, 42617) – D



Fig. 3e. *Scolelepis squamata* (RT6303; 64136) – D



Fig. 3f. *Scolelepis squamata* (RT6303; 64136) – L

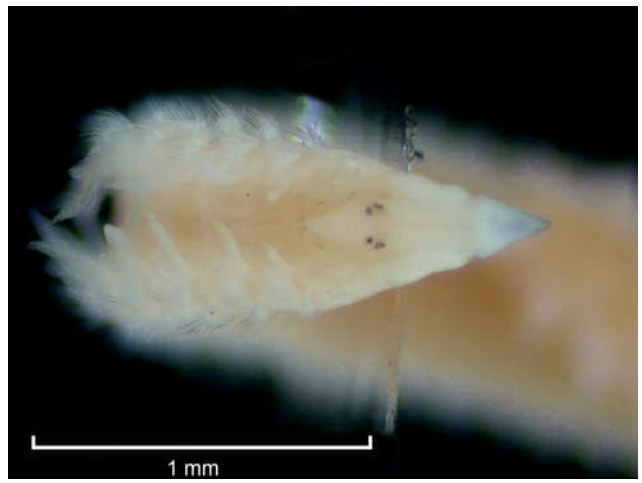


Fig. 3g. *Scolelepis squamata* (RT6303; 64136) – D,
head



Fig. 3h. *Scolelepis tridentata* (P2904, 61504) – D

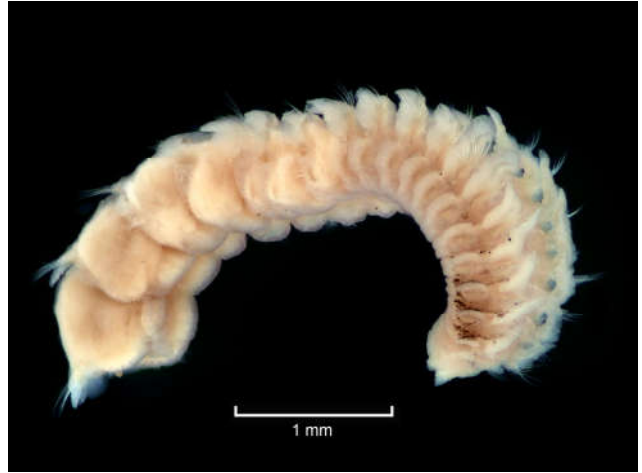


Fig. 3i. *Scolelepis tridentata* (P2904, 61504) – L



Fig. 3j. *Scolelepis tridentata* (P2904, 61504) – D,
head

RT6304 – *Eunereis longissima* (Johnston, 1840) (Figures 4a, 4e)

Substratum: Diamicton. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: southeast England. Condition: Fair. Size: Small. Specimens from three samples.



Fig. 4a. *Eunereis longissima*_(RT6304; 64203) –

D

Two generic and three specific differences: Lab 20 identified as *Ceratocephale loveni* (Figure 4b) (which has cirrophores); Lab 06 identified as *Rullierinereis ancornunezi* (Figures 4c; 4f) (which has reduced notopodial dorsal ligules in posterior chaetigers); Lab 14 identified as *Eunereis elitoralis* (Figures 4d; 4g) (which has paragnaths in several zones of the proboscis).



Fig. 4b. *Ceratocephale loveni* (P4264, 64092) –

D



Fig. 4c. *Rullierinereis ancornunezi* (413532, 42411) – D

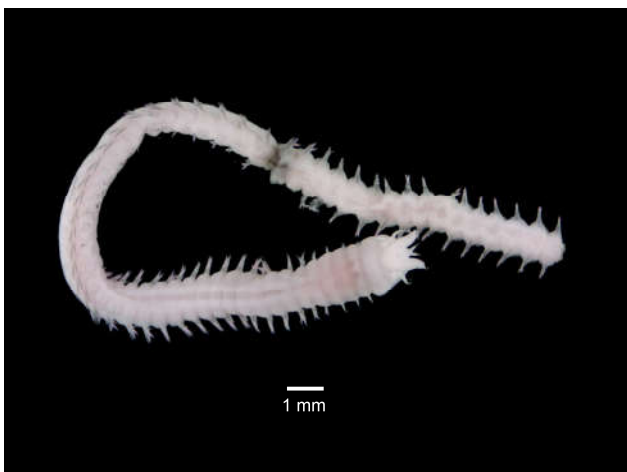


Fig. 4d. *Eunereis elitoralis* (P1802, 59458) – D

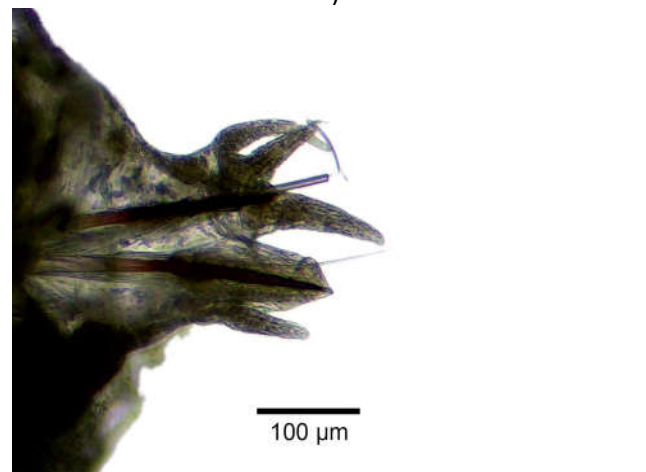


Fig. 4e. *Eunereis longissima*_(RT6304; 64203) –
posterior parapodium

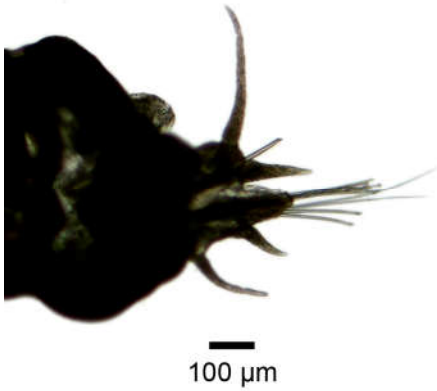


Fig. 4f. *Rullierinereis ancornunezi* (413532, 10143) – posterior parapodium



Fig. 4g. *Eunereis elitoralis* (P1802, 59458) – posterior parapodium

RT6305 – *Pycnogonum litorale* (Strøm, 1762) (Figure 5a)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Lower Shelf). Geography: North Sea. Condition: Good. Size: Large. Specimens from four samples.



Fig. 5a. *Pycnogonum litorale* (RT6305, 64442) –

D

No generic or specific differences recorded.

Labs 08 and 19 mis-spelled the specific name 'littorale'.

RT6306 – *Anguinella palmata* Van Beneden, 1845 (Figures 6a, b)

Substratum: Diamicton. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: southeast England. Condition: Good. Size: Small portions. All specimens from one sample.



Fig. 6a. *Anguinella palmata* (RT6306, 64176) –

Colony

Five generic and specific differences: Labs 15 and 19 identified as *Leucosolenia complicata* (Figure 6c shows a *Leucosolenia* sp.) (which has triactine spicules); Lab 13 identified as *Bougainvillia muscus* (Figure 6d shows a *Bougainvillia* sp.) (which has visible polyps); Lab 05 identified as *Alcyonidium parasiticum* (Figure 6e) (which forms encrusting colonies).

Lab 20 identified only as Leucosoleniidae. It is recommended that laboratories attempt species level identification of all specimens.

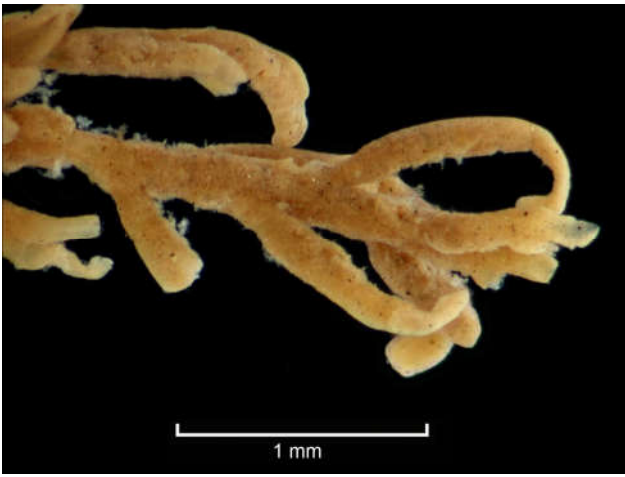


Fig. 6b. *Anguinella palmata* (RT6306, 64176) –
Zooids

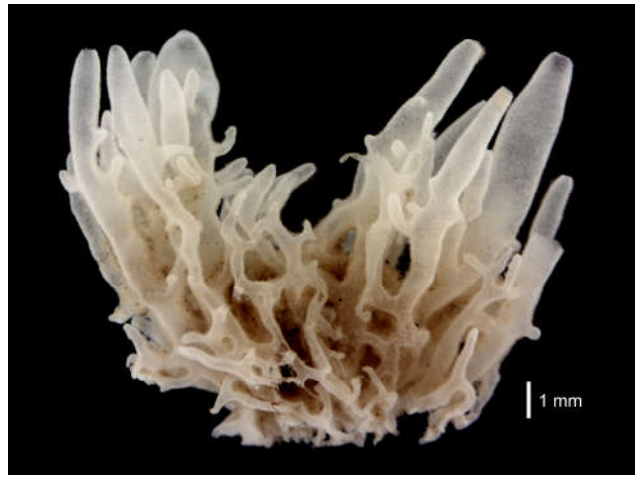


Fig. 6c. *Leucosolenia* sp. (P2188.3, 63443) –
Colony



Fig. 6d. *Bougainvillia* sp. (RT6306, 64176) –
Colony

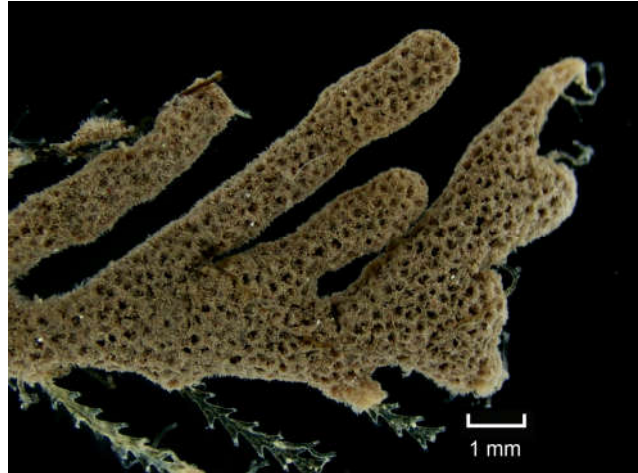


Fig. 6e. *Alcyonidium parasiticum* (P2188.3,
63443) – **Colony**

RT6307 – *Pholoe pallida* Chambers, 1985 (Figure 7a)

Substratum: Sand. Salinity: Full (Euhaline). Depth: Circalittoral (Lower Shelf). Geography: North Sea. Condition: Fair. Size: Medium. Specimens from five samples.



Fig. 7a. *Pholoe pallida* (RT6307, 64658) – **D**

No generic or specific differences recorded.

RT6308 – *Hyale pontica* agg. Rathke, 1836 (Figures 8a; 8c)

Substratum: Floral turf. Salinity: Full (Euhaline). Depth: Infralittoral. Geography: northern Scotland. Condition: Good. Size: Medium. All specimens from one sample.



Fig. 8a. *Hyale pontica* agg. (RT6308, 69899) – L

One generic and specific difference: Lab 07 identified as *Apohyale perieri* (no material available; Figures 8b and 8d show *Apohyale prevostii*) (which lacks large striate locking spines on the propodus of pereopods 3-7).

Labs 01 and 15 identified as *Hyale lubbockiana*. This species had been considered a synonym of *H. pontica* but was considered distinct by Krapp-schickel & Bousfield (2002) and is accepted as valid on WoRMS. However, as several specimens in the source sample showed intermediate features, both names have been accepted as correct.



Fig. 8b. *Apohyale prevostii* (P529, 58329) – L

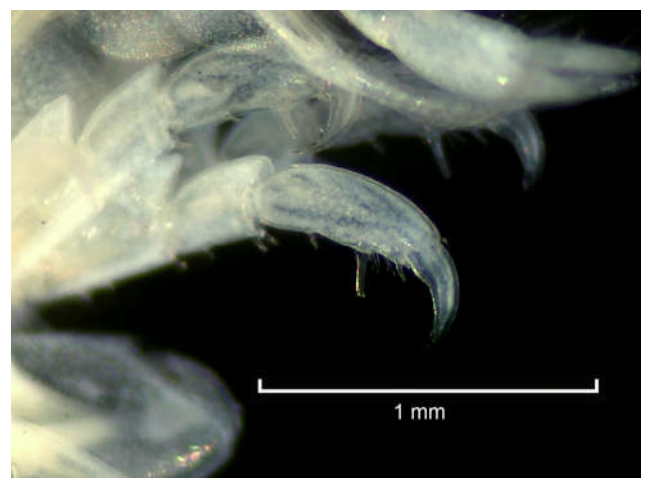


Fig. 8c. *Hyale pontica* (RT6308, 69899) –
pereopods

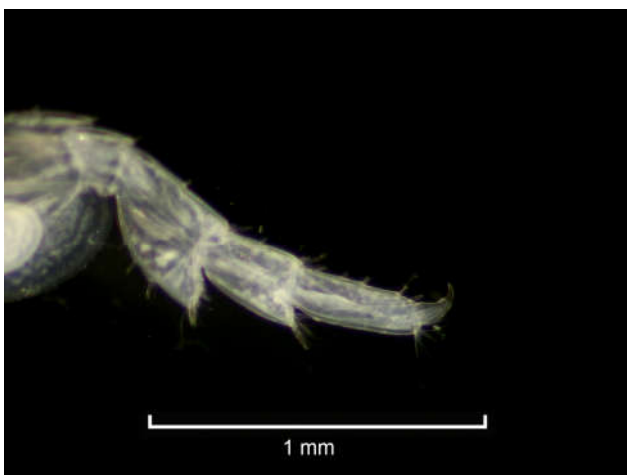


Fig. 8d. *Apohyale prevostii* (P529, 58329) –
pereopod 5

RT6309 – *Glycera alba* (O.F. Müller, 1776) (Figures 9a, 9d)

Substratum: Mud. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: western Scotland. Condition: Good. Size: Small. Specimens from two samples.



Fig. 9a. *Glycera alba* (RT6309, 71425) – D

Two specific differences: Lab 20 identified as *Glycera unicornis* (Figures 9b, 9e) (which has conical proboscis papillae and branchiae inserted on the anterior faces of the parapodia); Lab 19 identified as *Glycera tridactyla* (Figures 9c, 9f) (which has shorter proboscis papillae).



Fig. 9b. *Glycera unicornis* (P2960, 61619) – D

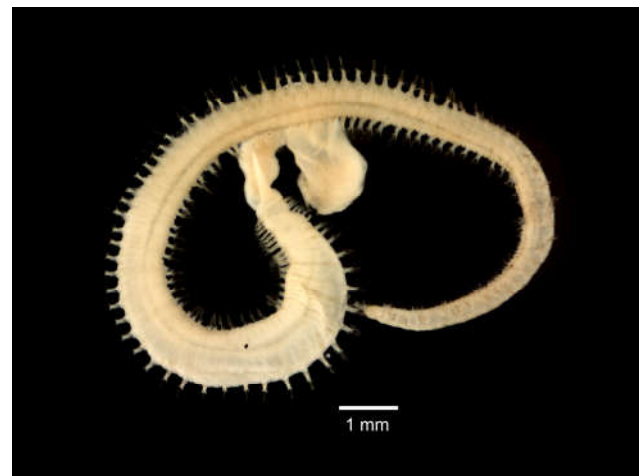


Fig. 9c. *Glycera tridactyla* (P3012, 61858) – D

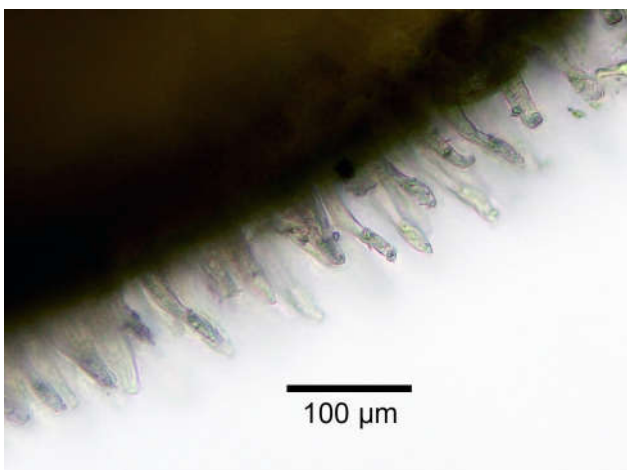


Fig. 9d. *Glycera alba* (RT6309, 71425) –
proboscis papillae

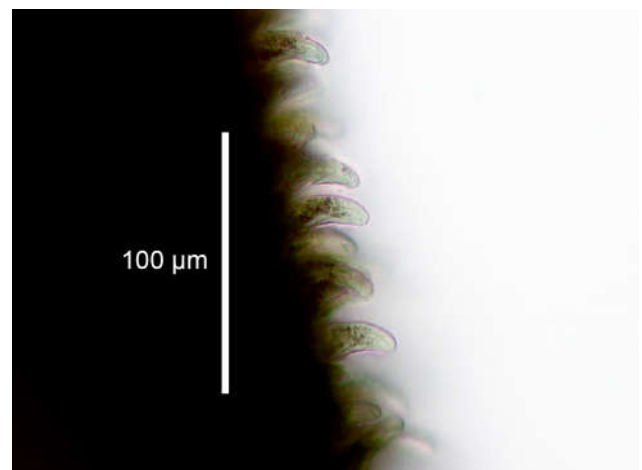


Fig. 9e. *Glycera unicornis* (P2960, 61619) –
proboscis papillae

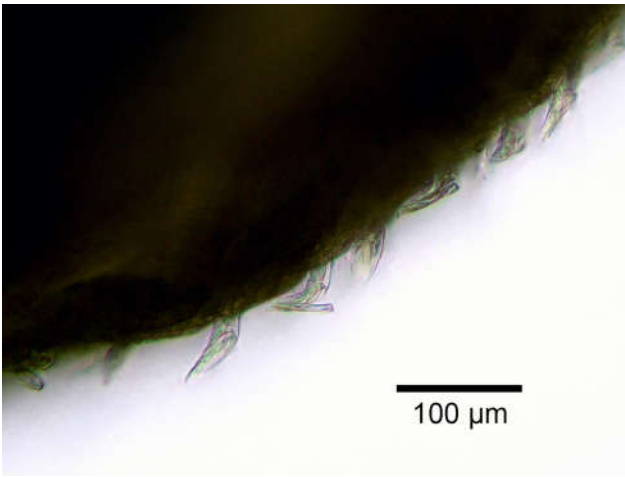


Fig. 9f. *Glycera tridactyla* (P3012, 61858) –
 proboscis papillae

RT6310 – *Ophelina norvegica* Støp-Bowitz, 1945 (Figure 10a)

Substratum: Sand. Salinity: Full (Euhaline). Depth: Circalittoral (Lower Shelf). Geography: North Sea. Condition: Good, female. Size: Large. Specimens from seven samples.



Fig. 10a. *Ophelina norvegica* (RT6310, 64658) –
 L

One specific difference: Lab 08 identified as *Ophelina acuminata* (Figure 10b) (which has a spoon shaped anal funnel).



Fig. 10b. *Ophelina acuminata* (RT5704, 58787)
 – L

RT6311 – *Harmothoe extenuata* (Grube, 1840) (Figures 11a; 11f-11i)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: southeast England. Condition: Fair. Size: Small. All specimens from one sample.



Fig. 11a. *Harmothoe extenuata* (RT6311, 10432) – D

Two generic and nineteen specific differences: Labs 13 and 20 identified as *Malmgrenia ljunmani* (Figures 20a; 20f; 20i) (which lacks prostomial peaks); Labs 08 and 22 identified as *Harmothoe glabra* (Figures 11b; 11j) (which has indistinct prostomial peaks and a long supra-acicular process); Labs 17 and 18 identified as *Harmothoe impar* (Figures 11c; 11k); Labs 05, 06 and 19 identified as *Harmothoe fernandi* (no material available) (both of which have more strongly developed fringing elytral papillae); Lab 15 identified as *Harmothoe aspera* (Figures 11d; 11e); Labs 01, 02, 03, 07, 10, 11, 12, 14 and 23 identified as *Harmothoe viridis* (no material available) (both of which have more elongate microtubercles).

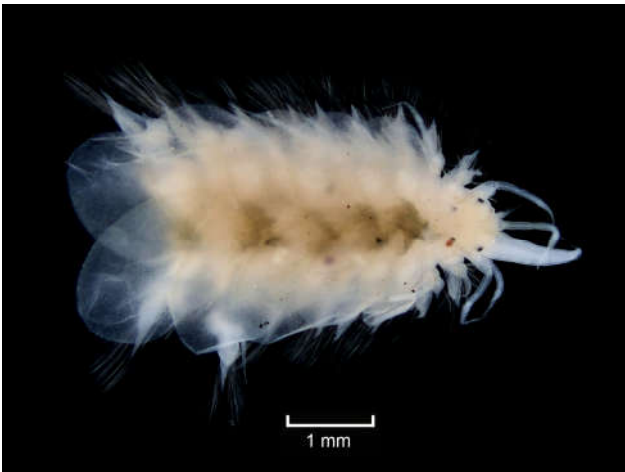


Fig. 11b. *Harmothoe glabra* (P7323.1, 69909) – D



Fig. 11c. *Harmothoe impar* (5914, 66857) – D



Fig. 11d. *Harmothoe aspera* (P3183, 62428) – D

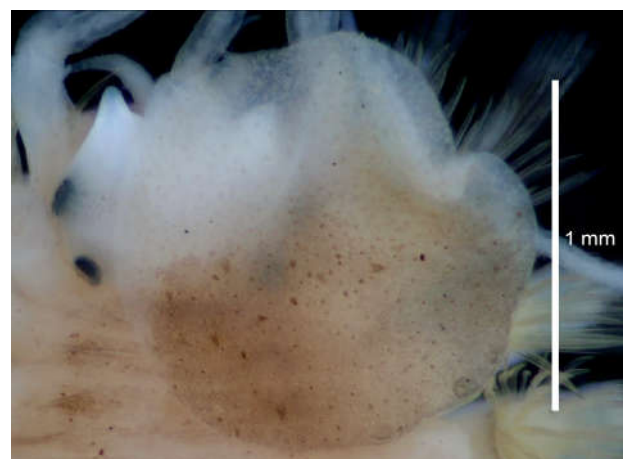


Fig. 11e. *Harmothoe aspera* (P3183, 62428) – D, scale



100 μ m

Fig. 11f. *Harmothoe extenuata* (RT6311: 413557, 10432) – scale



100 μ m

Fig. 11g. *Harmothoe extenuata* (413557, 10432) – scale



1 mm

Fig. 11h. *Harmothoe extenuata* (413557, 10432) – scale



1 mm

Fig. 11i. *Harmothoe extenuata* (413557, 10432) – scale



1 mm

Fig. 11j. *Harmothoe glabra* (P7323.1, 69909) – scale



500 μ m

Fig. 11k. *Harmothoe impar* (5914, 66857) – scale

RT6312 – *Limopsis aurita* (Brocchi, 1814) (Figure 12°; 12c; 12e)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Lower Shelf). Geography: western approaches. Condition: Good. Size: Medium, 8-15mm. Specimens from five samples.



Fig. 12a. *Limopsis aurita* (RT6312; 60041) – L, right

Six specific differences: Labs 08, 10, 14, 18, 22 and 23 identified as *Limopsis minuta* (Figures 12b; 12d) (which has periostracal hairs in more pronounced radial rows).

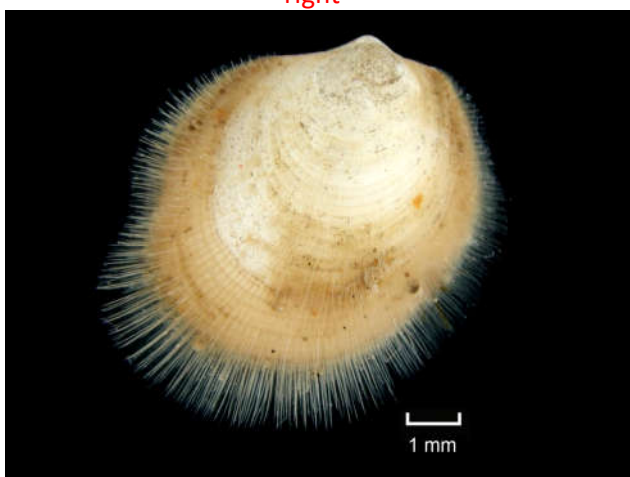


Fig. 12b. *Limopsis minuta* (P9115, 73029) – L, right



Fig. 12c. *Limopsis aurita* (P2081, 60041) – L, right



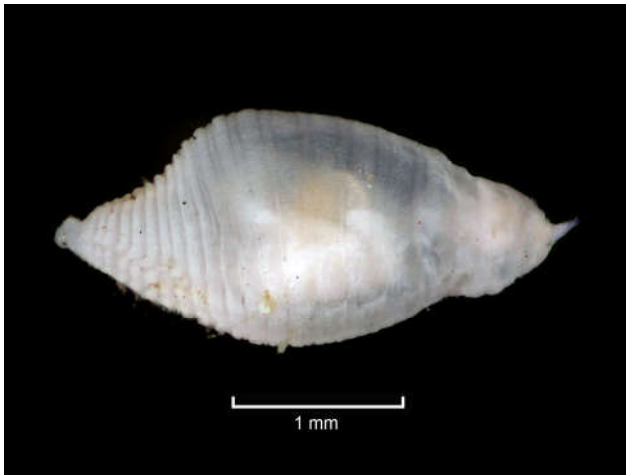
Fig. 12d. *Limopsis minuta* (P9115, 73029) – L, right



Fig. 12e. *Limopsis aurita* (P2081, 60041) – L, right

RT6313 – *Travisia forbesii* Johnston, 1840 (Figure 13a)

Substratum: Sand. Salinity: Full (Euhaline). Depth: Infralittoral. Geography: northern Scotland. Condition: Good. Size: Small. All specimens from one sample.

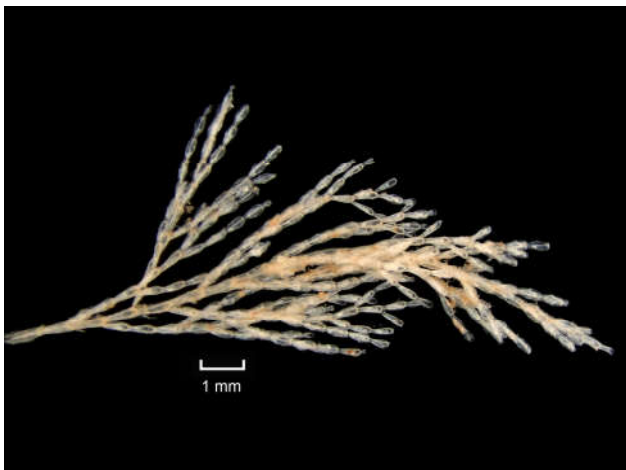


No generic or specific differences recorded.

Fig. 13a. *Travisia forbesii* (RT6313; 60768) – L

RT6314 – *Eucratea loricata* (Linnaeus, 1758) (Figures 14a, 14b)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: southeast England. Condition: Good. Size: Small portions. All specimens from one sample.



No generic or specific differences recorded.

Fig. 14a. *Eucratea loricata* (RT6314, 62570) –

Colony



Fig. 14b. *Eucratea loricata* (RT6314, 62570) –

Zooids

RT6315 – *Myrtea spinifera* (Montagu, 1803) (Figure 15a)

Substratum: Mud. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: western Scotland. Condition: Good. Size: Medium, 8-15mm. Specimens from four samples.

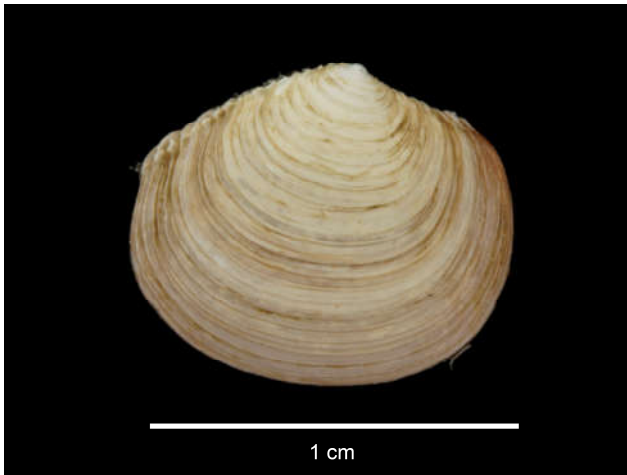


Fig. 15a. *Myrtea spinifera* (RT6315, 72297) – L,
right

One generic and specific difference: Lab 20 identified as *Venus casina* (Figure 15b) (which has more tumid valves and stronger concentric sculpture).

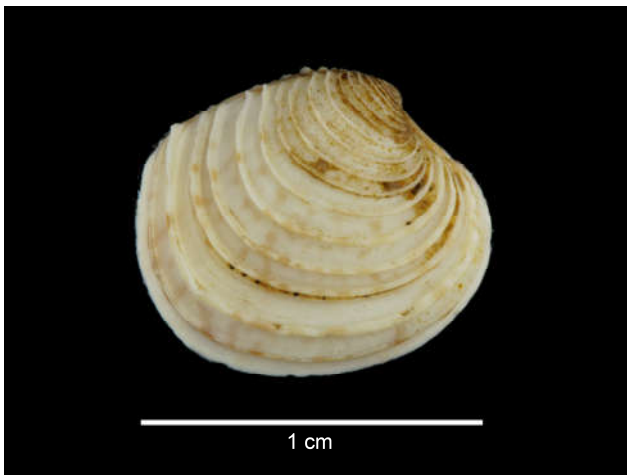


Fig. 15b. *Venus casina* (P4162.2, 65286) – L,
right

RT6316 – *Parvipalpus capillaceus* (Chevreux, 1888) (Figure 16a)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: north of Ireland. Condition: Fair, female. Size: Small. Specimens from two samples.

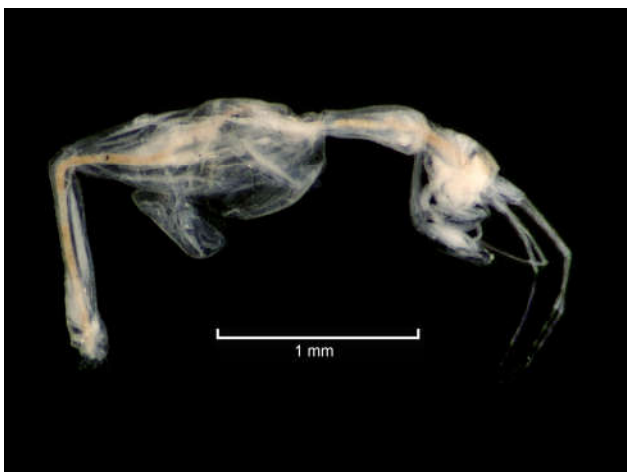


Fig. 16a. *Parvipalpus capillaceus* (RT6316,
65235) – L

One generic and specific difference: Lab 20 identified as *Parvipalpus onubensis* (no material available) (which has a rostrum).

Lab 07 misspelled the specific name 'capillaceous'.

RT6317 – *Dipolydora flava* (Claparède, 1870) (Figures 17a; 17f)

Substratum: Diamicton. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair. Size: Medium. Specimens from two samples.



Fig. 17a. *Dipolydora flava* (RT6317, 64177) – D

One generic and eight specific differences: Lab 07 identified as *Pseudopolydora antennata* (no material available; Figures 17b and 17g show *Pseudopolydora pulchra*) (which has a shorter segment 5); Lab 08 identified as *Dipolydora caulleryi* (Figures 17c; 17h) (which has fine bristles on the modified chaetae of chaetiger 5); Labs 13, 14, 19 and 20 identified as *Dipolydora coeca* (Figures 17d; 17i) (which has more than 10 modified chaetae on each side of chaetiger 5); Labs 15 and 18 identified as *Dipolydora saintjosephi* (Figure 17e shows a possible example) (which has awl shaped spines in posterior notopodia).

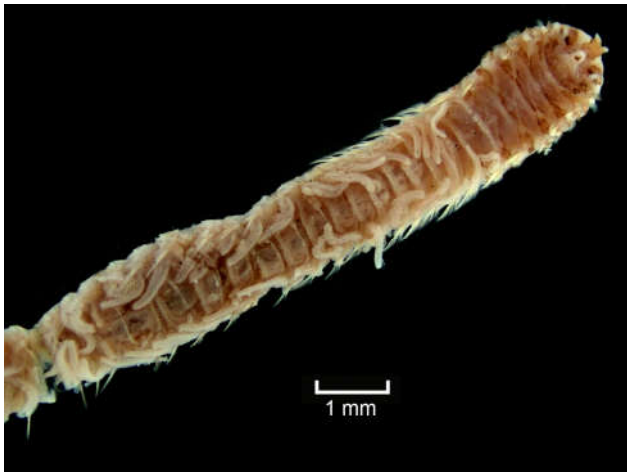


Fig. 17b. *Pseudopolydora pulchra* (412400_38624) – D



Fig. 17c. *Dipolydora caulleryi* agg. (P4267, 64442) – D



Fig. 17d. *Dipolydora coeca* (P4264, 64108) – D



Fig. 17e. *Dipolydora* cf. *saintjosephi* (413557, 42767) – D

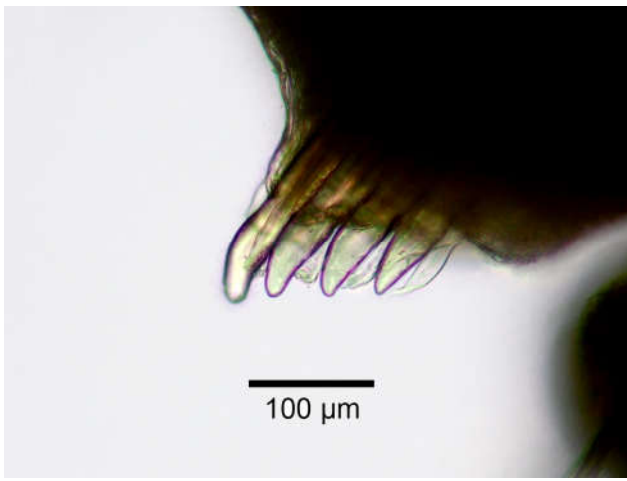


Fig. 17f. *Dipolydora flava* (RT6317, 64177)
 modified chaetae of Ch5

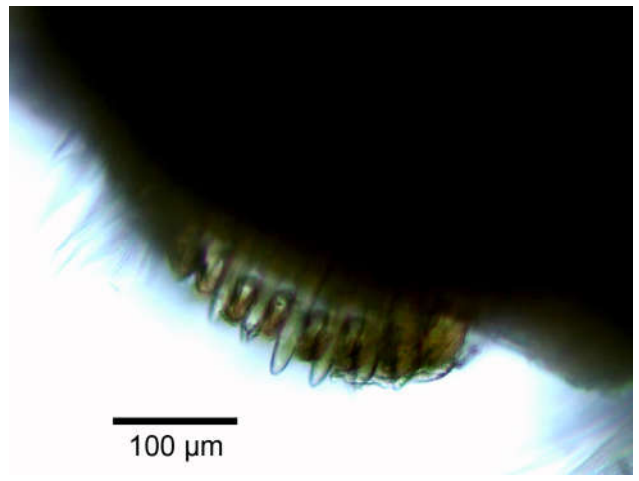


Fig. 17g. *Pseudopolydora pulchra* (412400_38624)
 – modified chaetae of Ch5

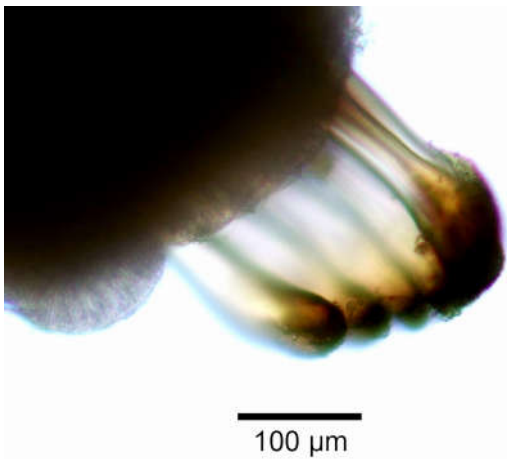


Fig. 17h. *Dipolydora caulleryi* agg. (P4267,
 64442) – modified chaetae of Ch5



Fig. 17i. *Dipolydora coeca* (P4264, 64108) –
 modified chaetae of Ch5

RT6318 – *Lovenella clausa* (Lovén, 1836) (Figures 18a, 18b)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: northeast England. Condition: Fair. Size: Small portions. Specimens from ten samples.

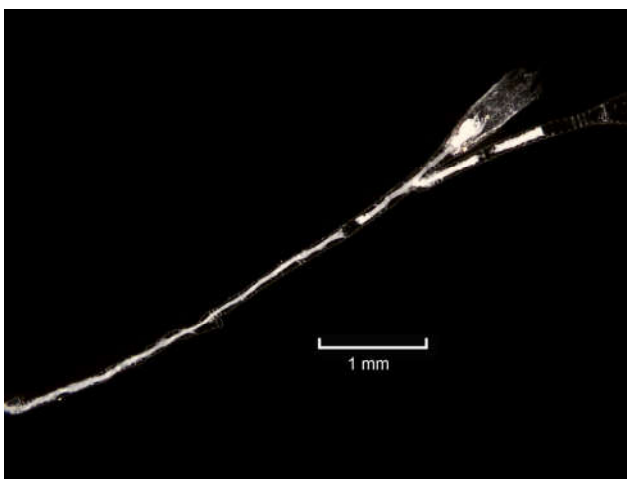


Fig. 18a. *Lovenella clausa* (RT6318, 72033) –
 Colony

Twelve generic and specific differences: Lab 22 identified as *Gonothyraea loveni* (Figure 18c) (which lacks a hydrothecal operculum); Labs 03, 05, 07, 10, 11, 13, 15, 17, 19, 20, 23 identified as *Phialella quadrata* (Figure 18d) (which has shorter hydrothecae and stems and pedicels annulated throughout).

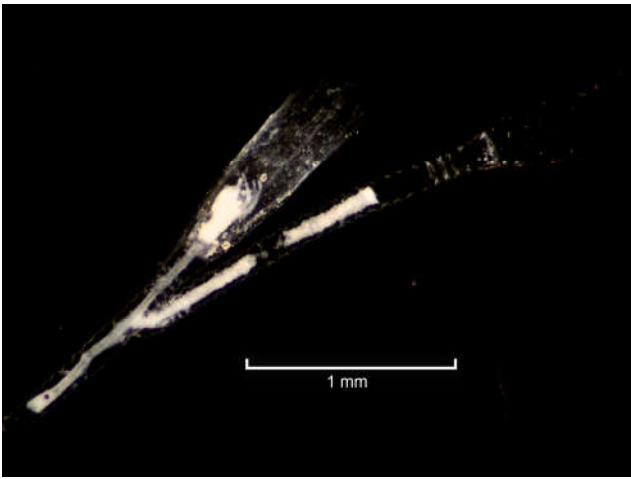


Fig. 18b. *Lovenella clausa* (RT6318, 72033) –
Polyp

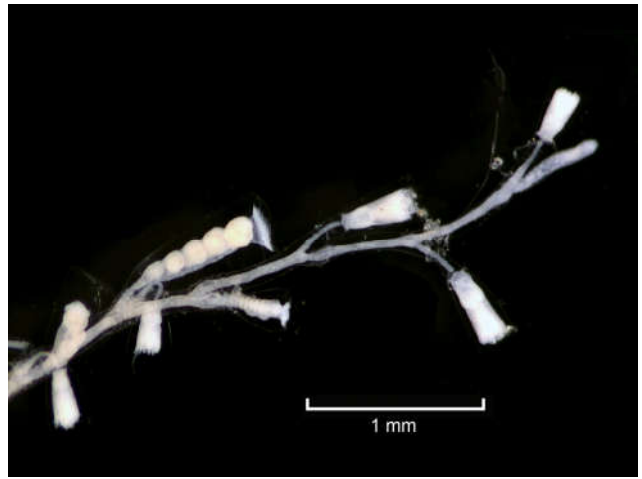


Fig. 18c. *Gonothyraea loveni* (P2188.3, 63444)
– Polyps

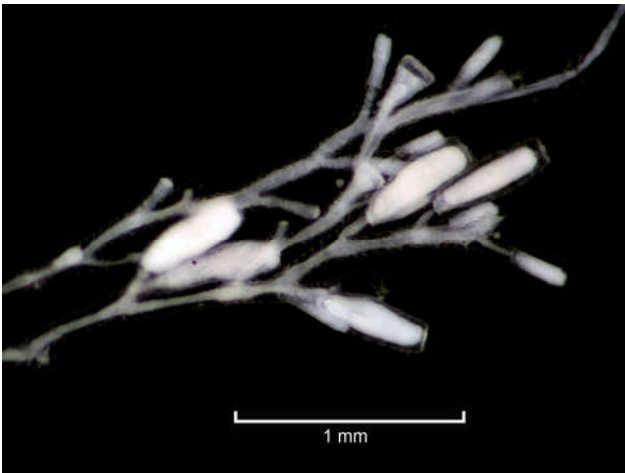


Fig. 18d. *Phialella quadrata* (P2188.3, 63691) –
Polyps

RT6319 – *Amphicteis midas* (Gosse, 1855) (Figure 19a)

Substratum: Mud. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: southeast England. Condition: Good. Size: Small. Specimens from four samples.



Fig. 19a. *Amphicteis midas* (RT6319, 64177) – L

Three specific differences: Labs 09, 12 and 20 identified as *Amphicteis gunneri* (Figure 19b) (which lacks brown pigment on the branchiae and has more than ten paleae on each side, with tapering tips).



Fig. 19b. *Amphicteis gunneri* (P2173_60652) – L

RT6320 – *Malmgrenia ljunmani* (Malmgren, 1867) (Figures 20a, 20f, 20j)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: northeast England. Condition: Fair. Size: Small. Specimens from six samples.

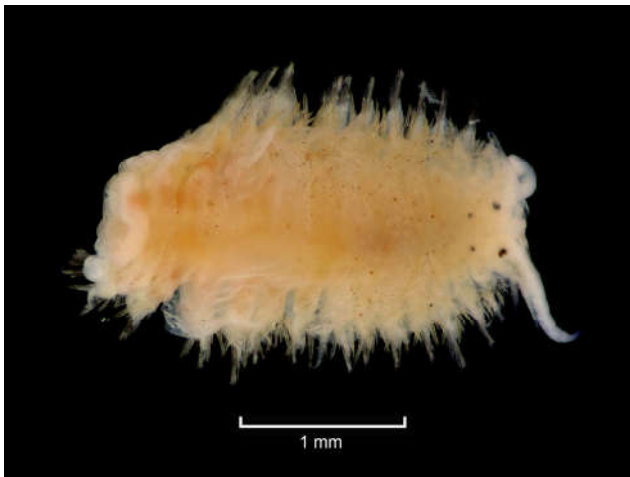


Fig. 20a. *Malmgrenia ljunmani* (RT6320, 71999) – D

One generic and seven specific differences: Lab 20 identified as *Enipo elisabethae* (Figure 20b) (which has scales less than half the body width); Labs 07 and 13 identified as *Malmgrenia arenicolae* (Figures 20c; 20g; 20k); Labs 11 and 19 identified as *Malmgrenia lunulata* (no material available); Lab 15 identified as *Malmgrenia marphysae* (Figures 20d; 20h; 20l); Lab 14 identified as *Malmgrenia andreapolis* (Figures 20e; 20i; 20m) (all of which have a restricted distribution of microtubercles and more slender notochaetae).



Fig. 20b. *Enipo elisabethae* (P2636, 62822) – D



Fig. 20c. *Malmgrenia arenicolae* (P9498, 72286) – D

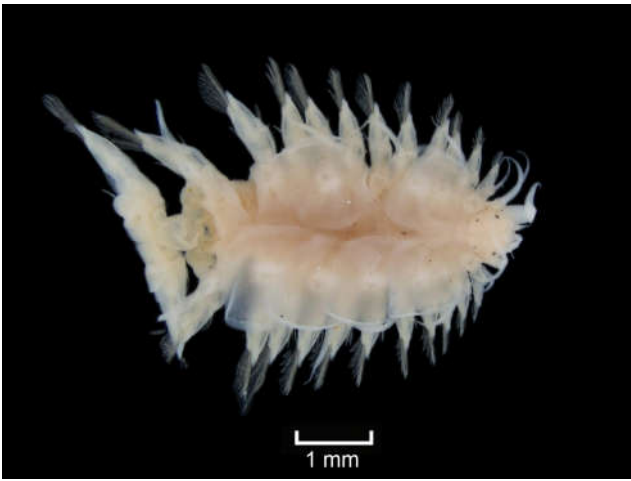


Fig. 20d. *Malmgrenia marphysae* (413531, 55373) – D



Fig. 20e. *Malmgrenia andreapolis* (P9545, 72330) – D



Fig. 20f. *Malmgrenia ljunmani* (RT6320, 71999) – scale



Fig. 20g. *Malmgrenia arenicolae* (P9498, 72286) – scale



Fig. 20h. *Malmgrenia marphysae* (413531, 55373) – scale



Fig. 20i. *Malmgrenia andreapolis* (P9545, 72330) – scale

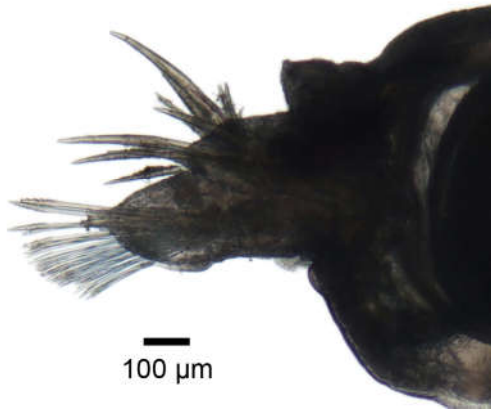


Fig. 20j. *Malmgrenia ljunmani* (RT6320, 71999) – parapodium

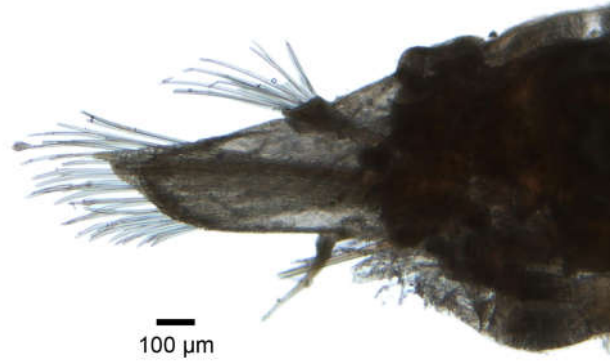


Fig. 20k. *Malmgrenia arenicola* (P9498, 72286) – parapodium

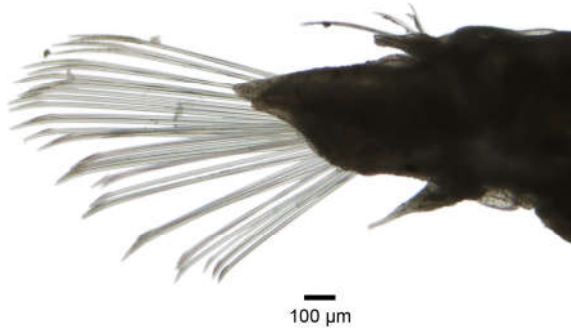


Fig. 20l. *Malmgrenia marphysae* (413531, 55373) – parapodium

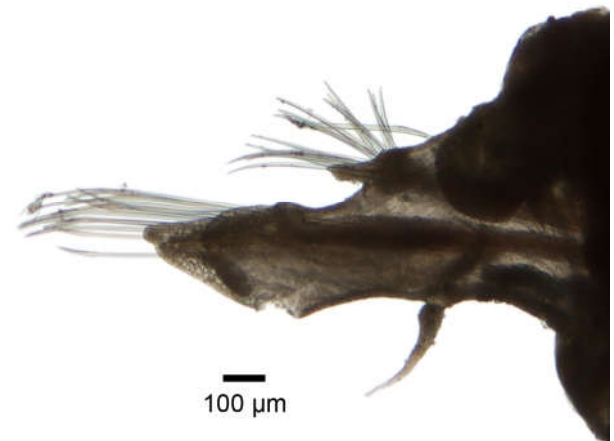


Fig. 20m. *Malmgrenia andreapolis* (P9545, 72330) – parapodium

RT6321 – *Paraleptopentacta elongata* (Düben & Koren, 1846) (Figure 21a)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: north of Ireland. Condition: Good. Size: Small. Specimens from two samples.



Fig. 21a. *Paraleptopentacta elongata* (RT6321, 55272) – L

Three generic and specific differences: Labs 08 and 15 identified as *Ocnus lacteus* (Figure 21b) (which has a stout posterior end).

Lab 20 identified only as Holothurioidea indet. It is recommended that laboratories attempt species level identification of all specimens. Lab 10 used the synonym *Leptopentacta elongata*.

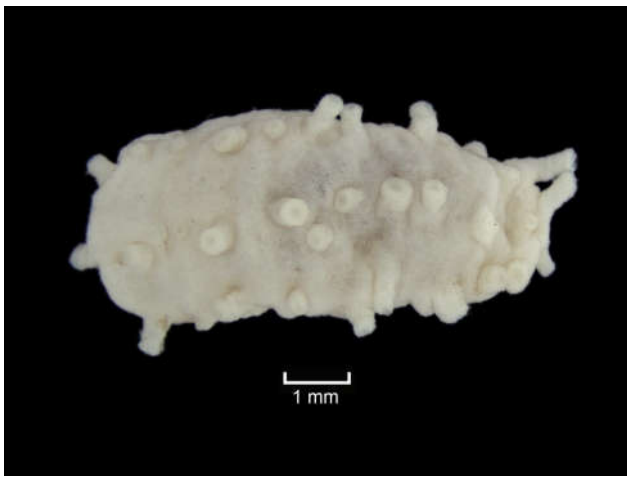


Fig. 21b. *Ocnus lacteus* (P8586, 72967) – L

RT6322 – *Notomastus latericeus* Sars, 1851 (Figure 22a)

Substratum: Mud. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: north of Ireland. Condition: Fair. Size: Medium. All specimens from one sample.



Fig. 22a. *Notomastus latericeus* (RT6322, 65264) – L

One specific difference.

Lab 05 identified only as *Notomastus*. It is recommended that laboratories attempt species level identification of all specimens.

RT6323 – *Magallana gigas* (Thunberg, 1793) (Figure 23a)

Substratum: Diamicton. Salinity: Variable (Euryhaline). Depth: Intertidal. Geography: southeast England. Condition: Good. Size: Medium, 50-70mm. All specimens from one sample.



Fig. 23a. *Magallana gigas* (RT6323) – D (right)

No generic or specific differences recorded.

RT6324 – *Polycera quadrilineata* (O.F. Müller, 1776) (Figures 24a; 24f-g)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: northeast England. Condition: Fair. Size: Small. Specimens from three samples.

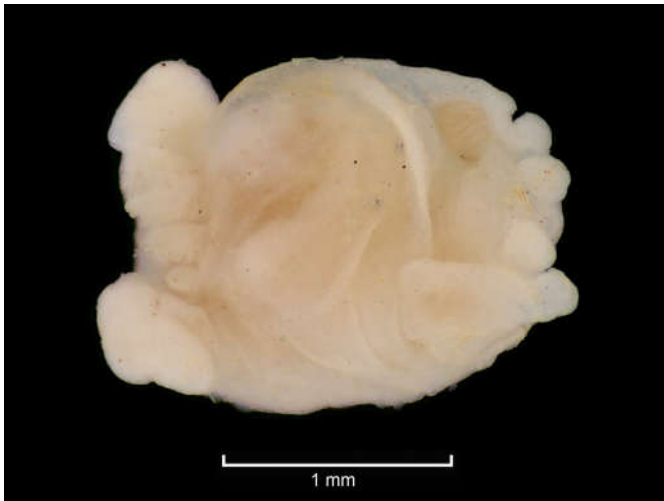


Fig. 24a. *Polycera quadrilineata* (RT6324; 71936)

– D

Ten generic and twelve specific differences: Lab 08 identified as *Adalaria loveni* (no material available) (which has the mantle covering the whole of the foot); Lab 02 identified as *Palio dubia*; Lab 13 identified as *Palio nothus* (Figure 24b shows *Palio* sp.) (both of which have numerous small tubercles); Labs 05 and 14 identified as *Ancula gibbosa* (Figure 24c) (which has multiple pallial tubercles); Labs 03, 07 and 22 identified as *Thecacera pennigera* (Figure 24d) (which has complex rhinophore sheaths); Lab 12 identified as *Trapania lineata* (no material available, Figure 24e shows *T. maculata*) (which lacks frontal processes); Lab 23 identified as *Polycera faeroensis* (no material available); Lab 23 identified as *Polycera kernowensis* (no material available) (both of which have more than six frontal processes).

Lab 10 identified as *Polycera norvegica* (no material available), a species not yet known from British waters and not distinguishable from preserved characteristics; it has been accepted as correct.

Lab 20 identified only as Nudibranchia indet. It is recommended that laboratories attempt species level identification of all specimens.



Fig. 24b. *Palio* sp. (P3099, 62328) – D



Fig. 24c. *Ancula gibbosa* (412520, 39669) – D

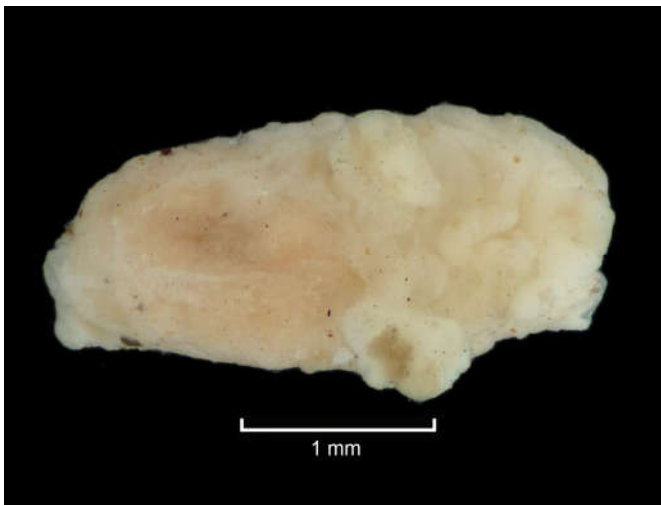


Fig. 24d. *Thecacera pennigera* (413531, 56636) – D

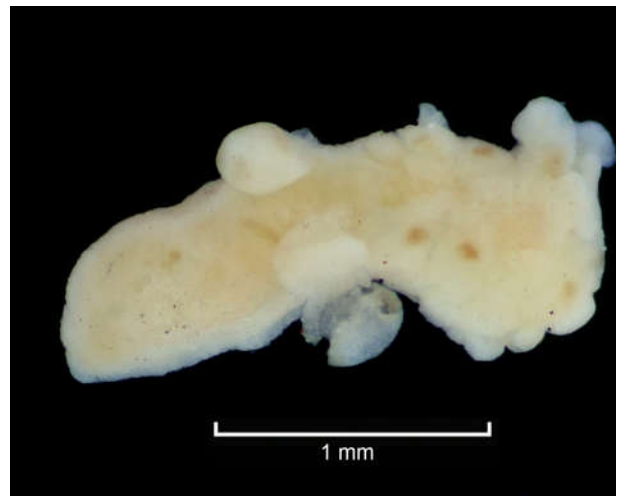


Fig. 24e. *Trapania maculata* (413531, 55293) – D

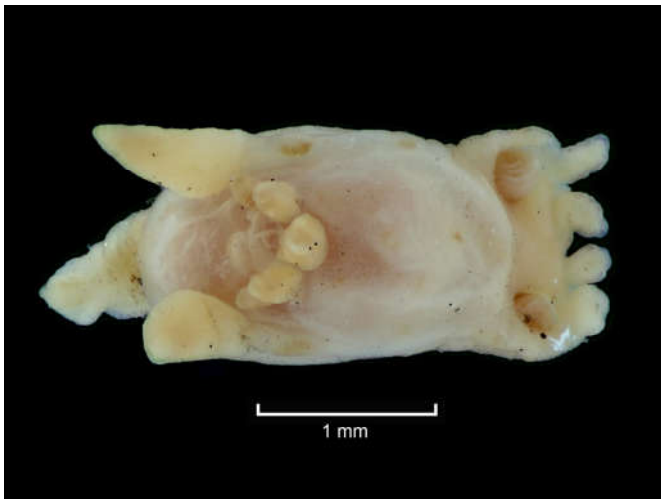


Fig. 24f. *Polycera quadrilineata* (P3115, 62404) – D



Fig. 24g. *Polycera quadrilineata* (Lab02) – D

RT6325 – *Astrorhiza limicola* Sandahl, 1858 (Figure 25a)

Substratum: Mud. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: north of Ireland. Condition: Good. Size: Medium. All specimens from one sample.

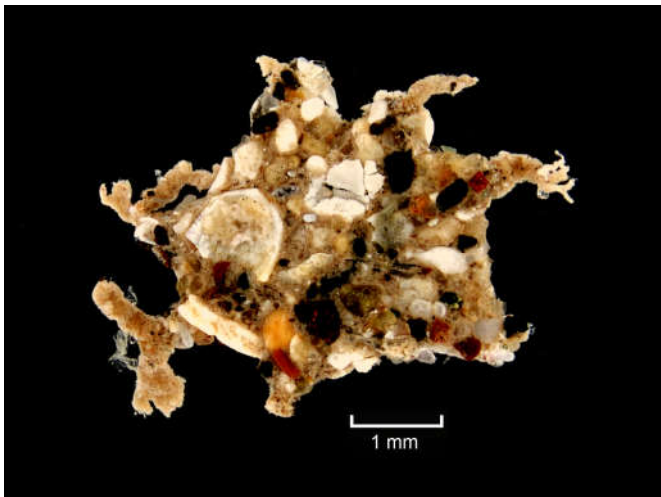


Fig. 25a. *Astrorhiza limicola* (RT6325, 60247) – D

Four generic and specific differences: Lab 08 identified as *Leucosolenia variabilis* (Figure 6c shows *Leucosolenia* sp.) (which has triactine spicules); Lab 23 identified as Polyclinidae (Figure 25b) (which comprises multiple zooids); Lab 10 identified as *Molgula occulta* (Figure 25c shows a *Molgula* sp.) (which has a test containing a branchial sac).

Lab 10 identified only as *Molgula*; Lab 23 identified only as Polyclinidae. It is recommended that laboratories attempt species level identification of all specimens.

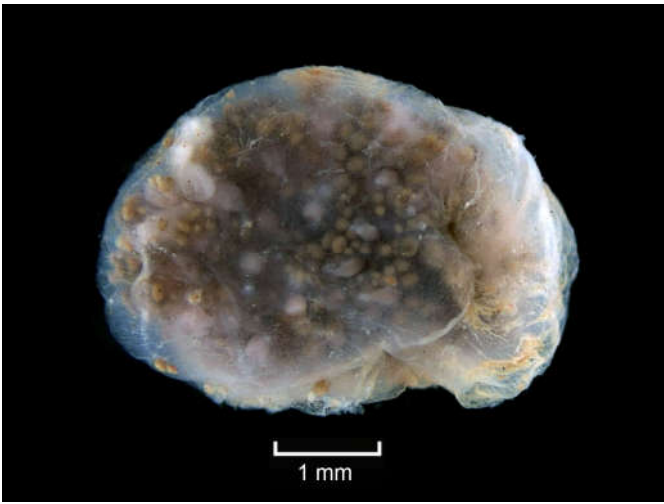


Fig. 25b. Polyclinidae (413154, 40690) – colony

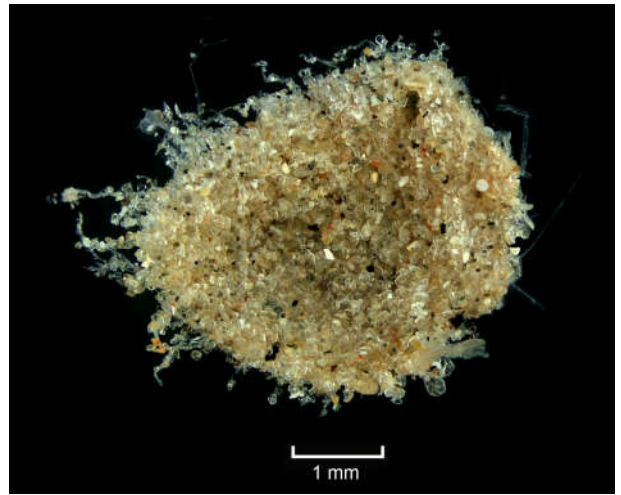


Fig. 25c. *Molgula* sp. (P2233.2, 64210) – D

Taxonomic and Identification policy considerations highlighted by RT63

An important purpose for the ring test exercises is to highlight areas for further work in identification standardisation and taxonomic research. Several identification problems were highlighted through this exercise, discussed above, some with further detail, below. Notes for discussion of progress towards a taxonomic discrimination protocol have been included in ring test bulletins since RT61; those for RT63 are included below.

Foraminifera

Astrorhizidae (Specimen 25). The draft TDP suggests genus level identification for Astrorhizidae. APEM currently count individuals for those resembling *A. limicola* but record presence/absence for more irregular forms. Foraminifera are very sporadically recorded, with varying policies apparent between laboratories. Agglutinating species, such as Astrorhizidae may be large and significant in samples and further discussion is needed for policies. RT63 results suggest species level may be achievable for *Astrorhiza*. Several references will be added to the next literature update; the most useful is probably Gabel (1971).

Cnidaria

Lovenellidae (Specimen 18). The draft TDP flags this family for further work, due to taxonomic confusion. APEM record *Lovenella* at species, as presence/absence, but recognise that there may be confusion with other genera, including operculate hydroids in other families. The confusion with *Phialella quadrata* is well known and a consequence of interpretation of the wording in the standard guide (Cornelius, 1995), in terms of the definition of the main stem when describing ringed structures. RT63 results otherwise suggest species level is achievable.

Annelida

Polynoidae (Specimens 11, 20). The draft TDP flags Polynoidae for further work, due to different taxonomic levels currently used for different taxa by different labs, particularly for small and incomplete specimens. APEM identify most to species or to species or complexes but some specimens are left at higher taxonomic levels if particularly small and damaged. Current literature usually requires scales to be examined, which would create an artefact in data if specimens are divided on the basis of condition. Both circulated polynoids generated many identification discrepancies. Many labs identified Specimen 11 as one of the species lacking macrotubercles and it seems that juveniles may lack them. The circulated specimens were all small but could be linked to large, typical examples of *Harmothoe extenuata* through growth series (Figures 11f-11i, above). A scaleworm guide (Barnich, 2011) was produced following the 2010 NMBAQC scaleworm workshop and *Harmothoe* species had been described in Barnich & Fiege (2009). However, distribution updates have been published since and some new records noted at the workshop remain unpublished. It is likely that further taxonomic changes are to be expected and current descriptions do not include descriptions of juveniles. Specimen 20 was also problematic. The most recent key (Barnich et al., 2017) suggests a juvenile size (body width excluding chaetae below 2mm) for leaving *Malmgrenia* at genus, which may be appropriate for *Harmothoe* also but further discussion is needed.

Pholoidae (Specimen 07). The draft TDP suggests species level identification for Pholoidae, as currently done at APEM. Despite nomenclature problems with older data and literature, recent literature, particularly Meißner et al. (2020), has resolved most identification problems and all labs identified the specimen correctly, suggesting no need for change.

Glyceridae (Specimen 09). The draft TDP suggests species level identification for Glyceridae, without separation of juveniles, as currently done at APEM. Most labs identified the specimen

correctly. The global glycerid revision (Böggemann, 2002) provides good illustrations and identification resources but the distribution maps suggest that some species may have been synonymised unnecessarily and may be re-validated in future. Some labs leave juveniles at genus but others speciate all; further discussion is needed.

Nereididae (Specimen 04). The draft TDP flags Nereididae for further work, due to different taxonomic levels currently used for different taxa by different labs, particularly for small specimens. APEM identify most to species, without separation of juveniles but occasional specimens are left at family level, if particularly small. Multiple literature resources are needed for nereid identification and there have been taxonomic updates and new records for many areas. However, most labs identified the specimen correctly.

Spionidae (Specimens 03, 17). The draft TDP flags this large family for further work, due to taxonomic flux (changes in species recognised over time) and the different taxonomic levels used for different taxa by different labs. APEM currently attempt identification of *Scolelepis* (Specimen 03) and *Dipolydora* (Specimen 17) to species following the key circulated with RT54 and recent literature and add 'agg.' to some; most *Dipolydora* were previously named as *D. coeca* agg. Many problems were resolved through the Scheme workshops (2008, 2016), as well as through RT54, but an update to the key is still required. There were several identification discrepancies, mostly from within the difficult *Dipolydora coeca* complex, which requires further work and discussion.

Acrocirridae (Specimen 02). This family was accidentally omitted from the first draft TDP. APEM previously identified *Macrochaeta* at genus level but one species has since been moved to a different genus (Jima et al., 2020). Most labs identified the specimen correctly for RT63, suggesting that species level may be achievable; Santos & Silva (1993) include a key to all *Macrochaeta*.

Capitellidae (Specimen 22). The draft TDP flags Capitellidae for further work, due to taxonomic flux and different taxonomic levels currently used for different taxa by different labs. APEM identify most, including *Notomastus*, at genus level; species level for monotypic (in northern Europe) genera. All labs identified this specimen correctly, other than one leaving it at genus, suggesting species level is possible. Lack of definitive literature prevented this in the past, though many labs defaulted to *N. latericeus*. The species can be separated using Capacciano-Azzati & El-Haddad (2015).

Opheliidae (Specimen 10). The draft TDP flags Orbiniidae for further work, due to taxonomic flux and different taxonomic levels currently used for different taxa by different labs, particularly for small specimens. APEM identify most *Ophelina* to species but leave juveniles at family level if below 5mm, with the exception of certain small species that rarely exceed that size. The circulated specimen could be identified using Rowe (2010) and most labs identified it correctly.

Travisiidae (Specimen 13). The draft TDP suggests species identifications for travisiids, as currently done at APEM. *Travisia* were previously included in Opheliidae, then, for a time, in Scalibregmatidae. All labs identified the specimen correctly, suggesting no need for change.

Ampharetidae (Specimen 19). The draft TDP flags Ampharetidae for further work, due to different taxonomic levels currently used for different taxa by different labs. APEM identify most to species but leave occasional small, damaged specimens at higher levels. Most labs identified the specimen correctly. It is likely that discrepancies were due to use of Holthe (1986), which combines two *Amphicteis* species that are separated in Jirkov & Leontovich (2013).

Arthropoda

Pycnogonidae (Specimen 05). The draft TDP suggests species identifications (using Bamber, 2010) for (adult) Pycnogonidae, as currently done at APEM, with juvenile Pycnogonida (with six legs) at class. RT63 results suggest no changes; all labs correctly identified the specimen.

Hyalidae (Specimen 08). The draft TDP suggests species identifications for Hyalidae, as currently done at APEM, without separation of juveniles. The standard identification guide for amphipods (Lincoln, 1979) was superseded for hyalids by McGrath Myers (1989), with later nomenclature changes and additional species. Krapp-schickel & Bousfield (2002) separated *Hyale lubbockiana*

from *H. pontica*, with which it had previously been synonymised, and restricted the distribution of *H. pontica* to the Mediterranean region. Specimens from the RT63 source pot, which includes a male (circulated specimens were female) seem to show characteristics of both species (for both sexes), suggesting that further taxonomic work is required. Most labs used the name *H. pontica*, while two used *H. lubbockiana*, probably reflecting low circulation of the paper.

Caprellidae (Specimen 16). The draft TDP suggests species identifications for adult caprellids and for all Caprellidae other than juvenile *Caprella*; these are left at genus if they have the juvenile form (rounded, smooth head). This is the current APEM policy and was derived from the 2012 NMBAQC workshop and guide (Guerra-García, 2014). Most labs identified the specimen correctly, with one using *Parvipalpus onubensis* (Guerra-García et al, 2001), which is not known from northern Europe. Further discussion may be needed on how to define juveniles.

Mollusca

Onchidorididae (Specimen 01). The draft TDP flags Onchidorididae for further work, due to different taxonomic levels currently used for different taxa by different labs. APEM currently identify to species for those genera that are monotypic in UK waters (all but *Onchidoris*) and for *Onchidoris muricata*; other *Onchidoris* are currently left at generic level. There is wide variation between labs for all nudibranch identifications, with some leaving all at order or even subclass level, with others attempting species or genus level identifications. Most labs correctly identified the circulated specimen at family level, with more variation for genus, including recent changes in generic placements for related species. Problems remain at species level that may require workshops, as well as discussion.

Polyceridae (Specimen 24). The draft TDP flags Polyceridae for further work, due to different taxonomic levels currently used for different taxa by different labs. APEM currently identify most to species but leave *Palio* at generic level. There is wide variation between labs for all nudibranch identifications, with some leaving all at order or even subclass level, with others attempting species or genus level identifications. Most labs correctly identified the circulated specimen within Polyceridae, and many to *Polycera*, although several identified as similar members of the Goniodorididae. Species level identifications highlighted recent literature (Korshunova et al., 2021; Sørensen et al., 2020) that separates recently described species using features that would not always be clear in preserved material, suggesting that genus level identifications may be the best achievable for this and related non-monotypic genera.

Limopsidae (Specimen 12). The draft TDP suggests species identifications for Limopsidae, as currently done at APEM, with separation of juveniles at 5mm (at species level). The circulated specimens were small but over 5mm and most labs identified them correctly. All discrepancies were with the similar *Limopsis minuta*, which can be distinguished by use of growth series, suggesting no need for change.

Ostreidae (Specimen 23). The draft TDP suggests species identifications for Ostreidae, as currently done at APEM, with separation of juveniles at 17mm (at species level). All labs correctly identified the circulated specimen despite it's being a fairly recent, though well-known introduction, with several related similar species, suggesting no need for change.

Lucinidae (Specimen 15). The draft TDP suggests species identifications for Lucinidae, as currently done at APEM, with separation of juveniles at 5mm (at species level). Most labs correctly identified the circulated specimen, suggesting no need for change.

Bryozoa

Nolellidae (Specimen 06). The draft TDP suggests genus level identifications for Nolellids. This reflects current APEM policy for *Nolella* but is an oversight for *Anguinella*, which is identified at species level; all recorded as presence/absence. Most labs correctly identified the circulated

specimen but several identified as unrelated species, often in different phyla; this was probably due to general unfamiliarity with epifauna, suggesting no need for change.

Eucrateidae (Specimen 14). The draft TDP suggests species level identifications for Eucrateidae (one species in UK waters), to be recorded as presence/absence, as currently done at APEM. All labs correctly identified the circulated specimen, suggesting no need for change.

Echinodermata

Cucumariidae (Specimen 21). The draft TDP suggests species identifications for cucumariids, with separation of juveniles (identified at order level: Dendrochirotida) at 10mm, as currently done at APEM. Most labs correctly identified the circulated specimen, which was small but over 10mm, suggesting no need for change. However, most consistency problems with echinoderms are for juveniles and more discussion may be needed to standardise policies.

Acknowledgements

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Ring Test Specimen Return Instructions

Please return all ring test specimens by 24th February 2023. 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, APEM Ltd., 7a Diamond Centre,
Works Road, Letchworth, Hertfordshire SG6 1LW, UK](#)