



NMQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

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Ring Test Bulletin – RTB#56



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RING TEST DETAILS

Ring Test #56

Type/Contents – Targeted - Oligochaeta and similar

Circulated – 06/12/18

Results deadline – 31/01/19

Number of Subscribing Laboratories – 23

Number of Participating Laboratories – 21

Number of Results Received – 18*

*multiple data entries per laboratory permitted

Summary of differences

| Specimen | Genus | Species | Size | Total differences for 18 returns | |
|---------------------------|-----------------------|--------------------------|--------|----------------------------------|---------|
| | | | | Genus | Species |
| RT5601 | <i>Tubificoides</i> | <i>amplivasatus</i> | small | 0 | 5 |
| RT5602 | <i>Paranais</i> | <i>litoralis</i> | small | 2 | 3 |
| RT5603 | <i>Tubificoides</i> | <i>benedii</i> | medium | 0 | 1 |
| RT5604 | <i>Clitellio</i> | <i>arenarius</i> | medium | 11 | 11 |
| RT5605 | <i>Psammoryctides</i> | <i>barbatus</i> | medium | 4 | 4 |
| RT5606 | <i>Mediomastus</i> | <i>fragilis</i> | medium | 2 | 2 |
| RT5607 | <i>Psammoryctides</i> | <i>barbatus</i> | medium | 4 | 4 |
| RT5608 | <i>Tubificoides</i> | <i>brownae</i> | medium | 2 | 12 |
| RT5609 | <i>Tubificoides</i> | <i>galiciensis</i> | medium | 0 | 3 |
| RT5610 | <i>Quistadrilus</i> | <i>multisetosus</i> | medium | 13 | 13 |
| RT5611 | <i>Manayunkia</i> | <i>aestuarina</i> | small | 2 | 2 |
| RT5612 | <i>Chaetogaster</i> | <i>diaphanus</i> | medium | 8 | 11 |
| RT5613 | <i>Psammodrilus</i> | <i>balanoglossoides</i> | small | 12 | 12 |
| RT5614 | <i>Ophidonais</i> | <i>serpentina</i> | medium | 9 | 9 |
| RT5615 | <i>Tubificoides</i> | <i>pseudogaster</i> agg. | medium | 7 | 11 |
| RT5616 | <i>Grania</i> | <i>maricola</i> | medium | 0 | 1 |
| RT5617 | <i>Slavina</i> | <i>appendiculata</i> | medium | 11 | 11 |
| RT5618 | <i>Tubificoides</i> | <i>pseudogaster</i> agg. | medium | 4 | 5 |
| RT5619 | <i>Stylaria</i> | <i>lacustris</i> | medium | 7 | 7 |
| RT5620 | <i>Aulodrilus</i> | <i>japonicus</i> | medium | 9 | 15 |
| RT5621 | <i>Baltidrilus</i> | <i>costatus</i> | medium | 0 | 0 |
| RT5622 | <i>Chaetogaster</i> | <i>limnaei</i> | medium | 8 | 11 |
| RT5623 | <i>Nais</i> | <i>elinguis</i> | medium | 3 | 5 |
| RT5624 | <i>Tubificoides</i> | <i>swirencoides</i> | medium | 1 | 2 |
| RT5625 | <i>Lumbriculus</i> | <i>variegatus</i> | medium | 9 | 9 |
| Total differences | | | | 128 | 169 |
| Average differences /lab. | | | | 7.1 | 9.4 |

Figure 1. The number of differences from the AQC identification of specimens distributed in RT56 for each of the participating laboratories. Arranged in order of increasing number of differences (by specific followed by generic errors).

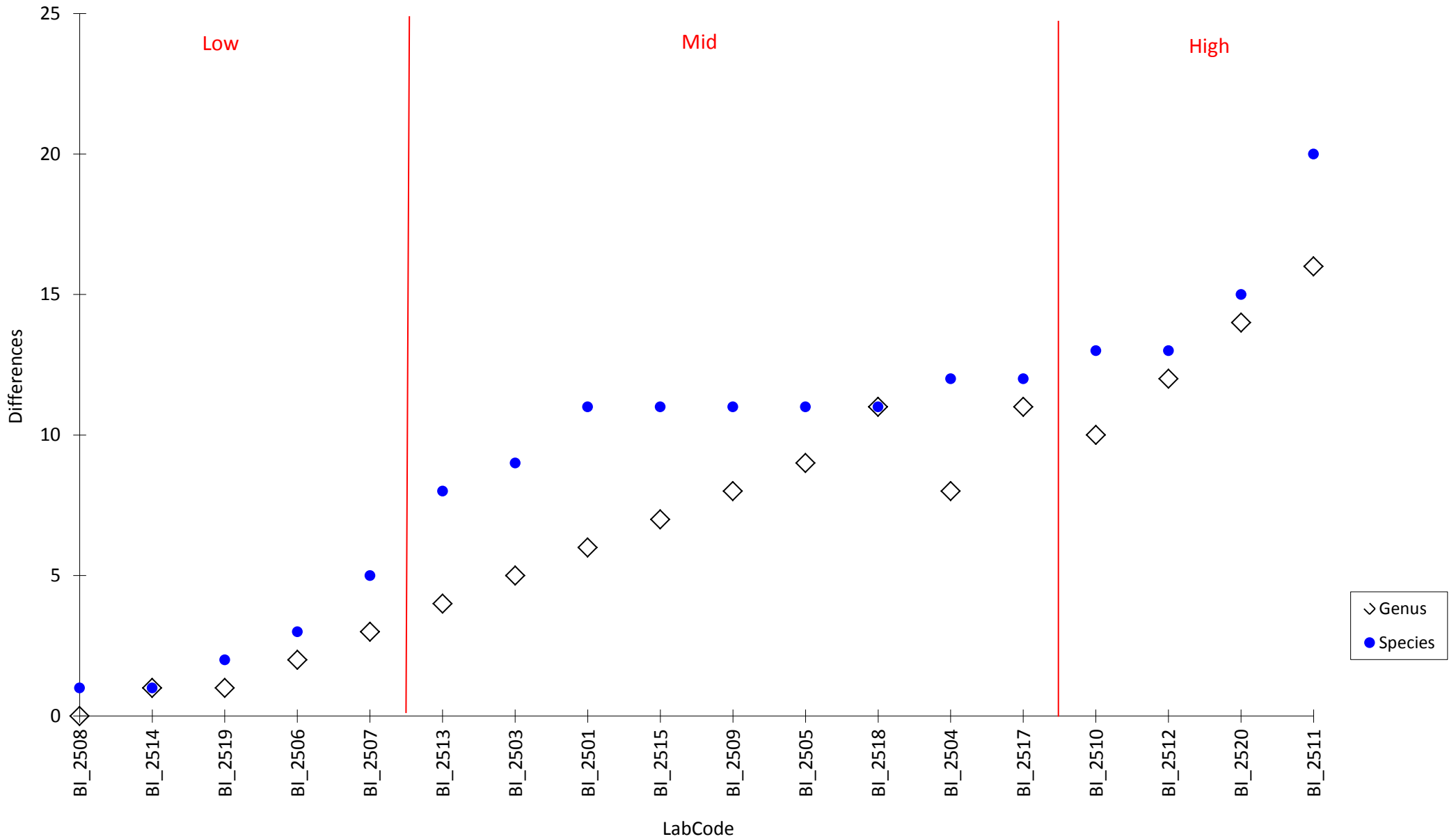


Table 1. The identification of fauna made by participating laboratories for RT56 (arranged by specimen). Names are given only where different from the AQC identification.

| | RT5601 | RT5602 | RT5603 | RT5604 | RT5605 |
|--------------|----------------------------------|---------------------------|-----------------------------|----------------------------------|--------------------------------|
| Taxon | <i>Tubificoides amplivasatus</i> | <i>Paranais litoralis</i> | <i>Tubificoides benedii</i> | <i>Clitellio arenarius</i> | <i>Psammoryctides barbatus</i> |
| BI_2501 | -- | -- | -- | -- | -- |
| BI_2503 | -- | -- | -- | Tubificoides heterochaetus | -- |
| BI_2504 | - parapectinatus | -- | -- | -- | -- |
| BI_2505 | -- | Tubificoides pseudogaster | -- | Tubificoides heterochaetus | -- |
| BI_2506 | -- | -- | -- | Tubificoides pseudogaster (agg.) | -- |
| BI_2507 | -- | -- | -- | Limnodriloides scandinavicus | -- |
| BI_2508 | -- | -- | -- | -- | -- |
| BI_2509 | -- | -- | -- | Tubificoides pseudogaster agg. | -- |
| BI_2510 | -- | -- | -- | Heterodrilus subtilis | Tubificoides swirencoides |
| BI_2511 | - parapectinatus | Nais elinguis | - insularis | Heterodrilus subtilis | Baltidrilus costatus |
| BI_2512 | - pseudogaster agg. | -- | -- | -- | Potamothrix bavaricus |
| BI_2513 | - parapectinatus | -- | -- | -- | -- |
| BI_2514 | -- | -- | -- | -- | -- |
| BI_2515 | - parapectinatus | - frici | -- | Monopylephorus limosus | -- |
| BI_2517 | -- | -- | -- | Tubificoides diazi | -- |
| BI_2518 | -- | -- | -- | Tubificoides pseudogaster | -- |
| BI_2519 | -- | -- | -- | -- | -- |
| BI_2520 | -- | -- | -- | Tubificoides heterochaetus | Tubificoides parapectinatus |

Table 1. The identification of fauna made by participating laboratories for RT56 (arranged by specimen). Names are given only where different from the AQC identification.

| | RT5606 | RT5607 | RT5608 | RT5609 | RT5610 |
|--------------|-----------------------------|--------------------------------|-----------------------------|---------------------------------|----------------------------------|
| Taxon | <i>Mediomastus fragilis</i> | <i>Psammorectides barbatus</i> | <i>Tubificoides brownae</i> | <i>Tubificoides galiciensis</i> | <i>Quistadrilus multisetosus</i> |
| BI_2501 | -- | -- | - pseudogaster | - [cf. galiciensis] | Peloscolex ferox |
| BI_2503 | -- | -- | - pseudogaster (Aggregate) | - [cf. galiciensis] | Spirosperma ferox |
| BI_2504 | -- | -- | - pseudogaster | - insularis | Tubificoides insularis |
| BI_2505 | -- | -- | - diazi | - swirencoides | Potamothenix bavaricus |
| BI_2506 | -- | -- | -- | - [cf. galiciensis] | -- |
| BI_2507 | -- | -- | Limnodrilus hoffmeisteri | - [cf. galiciensis] | Tubifex tubifex |
| BI_2508 | -- | -- | -- | - [cf. galiciensis] | -- |
| BI_2509 | -- | -- | - heterochaetus | -- | Nais elinguis |
| BI_2510 | -- | -- | -- | - [cf. galiciensis] | Limnodrilus spp. |
| BI_2511 | Capitella minima | Tubificoides amplivastus | - pseudogaster agg | -- | Nais elinguis |
| BI_2512 | Peresiella clymenoides | Potamothenix bavaricus | -- | - [cf. galiciensis] | Spirosperma ferox |
| BI_2513 | -- | -- | - pseudogaster | -- | Potamothenix bavaricus |
| BI_2514 | -- | -- | -- | -- | -- |
| BI_2515 | -- | -- | - pseudogaster | - insularis | -- |
| BI_2517 | -- | Potamothenix bavaricus | -- | -- | Tubificoides insularis |
| BI_2518 | -- | -- | Baltidrilus costatus | - [cf. galiciensis] | Tubificoides insularis |
| BI_2519 | -- | -- | - heterochaetus | - [cf. galiciensis] | -- |
| BI_2520 | -- | Tubifex tubifex | - pseudogaster | - [cf. galiciensis] | Paranais frici |

Table 1. The identification of fauna made by participating laboratories for RT56 (arranged by specimen). Names are given only where different from the AQC identification.

| | RT5611 | RT5612 | RT5613 | RT5614 |
|--------------|------------------------------|-------------------------------|---------------------------------------|------------------------------|
| Taxon | <i>Manayunkia aestuarina</i> | <i>Chaetogaster diaphanus</i> | <i>Psammodrillus balanoglossoides</i> | <i>Ophidonais serpentina</i> |
| BI_2501 | -- | - langi | Grania maricola | [Ophidoneis] - |
| BI_2503 | -- | - cristallinus | Glossobalanus sarniensis | -- |
| BI_2504 | -- | Paranais litoralis | Tubificoides heterochaetus | Paranais frici |
| BI_2505 | - [aesturina] | -- | Lumbricillus lineatus | Nais elinguis |
| BI_2506 | -- | -- | -- | -- |
| BI_2507 | -- | - langi | -- | -- |
| BI_2508 | - [aesturina] | -- | -- | -- |
| BI_2509 | -- | Amphichaeta sannio | Pseudofabricia aberrans | Nais communis |
| BI_2510 | -- | Nais communis | -- | 0 0 |
| BI_2511 | -- | Amphichaeta sannio | Tubificoides heterochaetus | Monopylephorus rubroniveus |
| BI_2512 | Aulophorus furcatus | Paranais litoralis | -- | Nais elinguis |
| BI_2513 | -- | -- | Ctenodrillus serratus | -- |
| BI_2514 | -- | -- | Saccoglossus ruber | -- |
| BI_2515 | -- | -- | Jasmineira schaudinni | -- |
| BI_2517 | -- | 0 0 | Saccoglossus 0 | Nais elinguis |
| BI_2518 | -- | Paranais frici | Marionina achaeta | Nais elinguis |
| BI_2519 | -- | -- | -- | -- |
| BI_2520 | Fabriciola baltica | Oligochaeta? 0 | Grania postclitellochaeta agg. | Paranais frici |

Table 1. The identification of fauna made by participating laboratories for RT56 (arranged by specimen). Names are given only where different from the AQC identification.

| | RT5615 | RT5616 | RT5617 | RT5618 |
|--------------|----------------------------------|------------------------|------------------------------|--|
| Taxon | <i>Tubificoides pseudogaster</i> | <i>Grania maricola</i> | <i>Slavina appendiculata</i> | <i>Tubificoides pseudogaster</i> <i>agg.</i> |
| BI_2501 | Monopylephorus rubroniveus | - postclitellochaeta | Nais elinguis | Tubificidae sp. |
| BI_2503 | - [pseudogaster (Aggregate)] | -- | -- | - [pseudogaster (Aggregate)] |
| BI_2504 | - diazi | -- | Spirosperma ferox | - [pseudogaster] |
| BI_2505 | -- | -- | Nais elinguis | - [pseudogaster] |
| BI_2506 | Limnodrilus hoffmeisteri | -- | -- | - [pseudogaster (agg.)] |
| BI_2507 | -- | -- | [Salvina] - | - [pseudogaster] |
| BI_2508 | -- | -- | -- | - [pseudogaster] |
| BI_2509 | Limnodrilus hoffmeisteri | -- | Nais elinguis | -- |
| BI_2510 | Limnodrilus hoffmeisteri | -- | -- | - diazi |
| BI_2511 | - parapectinatus | -- | Nais elinguis | Paranais litoralis |
| BI_2512 | - [pseudogaster agg.] | -- | Grania postclitellochaeta | Aktedrilus monospermathecus |
| BI_2513 | - heterochaetus | -- | Nais elinguis | - [pseudogaster] |
| BI_2514 | - [pseudogaster agg.] | -- | -- | [Baltidrilus] [costatus (errant specimen confirmed)] |
| BI_2515 | -- | -- | Pristina longiseta | Paranais litoralis |
| BI_2517 | - diazi | -- | Tubificoides insularis | - [pseudogaster] |
| BI_2518 | Nais elinguis | -- | Tubificoides insularis | - [pseudogaster] |
| BI_2519 | Baltidrilus costatus | -- | -- | - [pseudogaster] |
| BI_2520 | Thalassodrilus prostatus | -- | Tubificoides insularis | - [pseudogaster] |

Table 1. The identification of fauna made by participating laboratories for RT56 (arranged by specimen). Names are given only where different from the AQC identification.

| | RT5619 | RT5620 | RT5621 | RT5622 | RT5623 |
|--------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Taxon | <i>Stylaria lacustris</i> | <i>Aulodrilus japonicus</i> | <i>Baltidrilus costatus</i> | <i>Chaetogaster limnaei</i> | <i>Nais elinguis</i> |
| BI_2501 | -- | - pluriseta | -- | - langi | Paranais litoralis |
| BI_2503 | Pristina longiseta | - pluriseta | -- | - langi | -- |
| BI_2504 | -- | Nais elinguis | -- | Paranais frici | -- |
| BI_2505 | Pristina longiseta | Potamothrix bavaricus | -- | -- | Tubificoides insularis |
| BI_2506 | -- | -- | -- | - diastrophus-group | -- |
| BI_2507 | -- | - pluriseta | -- | -- | -- |
| BI_2508 | -- | - pluriseta | -- | -- | -- |
| BI_2509 | Pristina longiseta | - pluriseta | -- | -- | - variabilis |
| BI_2510 | Pristina longiseta | 0 0 | -- | 0 0 | - variabilis |
| BI_2511 | Potamothrix bavaricus | Tubifex tubifex | -- | Paranais frici | Tubificoides parapectinatus |
| BI_2512 | -- | Monopylephorus irroratus | -- | Aeolosoma quaternarium | -- |
| BI_2513 | -- | - pluriseta | -- | Paranais frici | -- |
| BI_2514 | -- | -- | -- | -- | -- |
| BI_2515 | -- | Pristina sima | -- | -- | -- |
| BI_2517 | Polychaeta!!! 0 | Tubificoides parapectinatus | -- | 0 0 | -- |
| BI_2518 | -- | Potamothrix bavaricus | -- | Amphichaeta sannio | -- |
| BI_2519 | -- | -- | -- | -- | -- |
| BI_2520 | Nais elinguis | Tubificoides parapectinatus | -- | Oligochaeta? 0 | -- |

Table 1. The identification of fauna made by participating laboratories for RT56 (arranged by specimen). Names are given only where different from the AQC identification.

| | RT5624 | RT5625 |
|--------------|----------------------------------|---------------------------------|
| Taxon | <i>Tubificoides swirencoides</i> | <i>Lumbriculus variegatus</i> |
| BI_2501 | -- | - [variagatus] |
| BI_2503 | -- | Clitellio (Clitellio) arenarius |
| BI_2504 | -- | Monopylephorus limosus |
| BI_2505 | -- | -- |
| BI_2506 | -- | -- |
| BI_2507 | -- | -- |
| BI_2508 | -- | -- |
| BI_2509 | -- | -- |
| BI_2510 | - cf. galiciensis | Clitellio (Clitellio) arenarius |
| BI_2511 | -- | Tubificoides pseudogaster agg |
| BI_2512 | -- | Paranais frici |
| BI_2513 | -- | -- |
| BI_2514 | -- | -- |
| BI_2515 | Spirosperma ferox | Stylodrilus brachystylus |
| BI_2517 | -- | Clitellio arenarius |
| BI_2518 | -- | Clitellio arenarius |
| BI_2519 | -- | -- |
| BI_2520 | -- | Clitellio (Clitellio) arenarius |

Table 2. The identification of fauna made by participating laboratories for RT56 (arranged by participant). Names are given only where different from the AQC identification.

| | Taxon | BI_2501 | BI_2503 | BI_2504 | BI_2505 | BI_2506 |
|--------|---------------------------------------|----------------------------|---------------------------------|----------------------------|----------------------------|----------------------------------|
| RT5601 | <i>Tubificoides amplivasatus</i> | -- | -- | - parapectinatus | -- | -- |
| RT5602 | <i>Paranais litoralis</i> | -- | -- | -- | Tubificoides pseudogaster | -- |
| RT5603 | <i>Tubificoides benedii</i> | -- | -- | -- | -- | -- |
| RT5604 | <i>Clitellio arenarius</i> | -- | Tubificoides heterochaetus | -- | Tubificoides heterochaetus | Tubificoides pseudogaster (agg.) |
| RT5605 | <i>Psammoryctides barbatus</i> | -- | -- | -- | -- | -- |
| RT5606 | <i>Mediomastus fragilis</i> | -- | -- | -- | -- | -- |
| RT5607 | <i>Psammoryctides barbatus</i> | -- | -- | -- | -- | -- |
| RT5608 | <i>Tubificoides brownae</i> | - pseudogaster | - pseudogaster (Aggregate) | - pseudogaster | - diazi | -- |
| RT5609 | <i>Tubificoides galiciensis</i> | - [cf. galiciensis] | - [cf. galiciensis] | - insularis | - swirencoides | - [cf. galiciensis] |
| RT5610 | <i>Quistadrilus multisetosus</i> | Peloscoclex ferox | Spirosperma ferox | Tubificoides insularis | Potamothenrix bavaricus | -- |
| RT5611 | <i>Manayunkia aestuarina</i> | -- | -- | -- | - [aesturina] | -- |
| RT5612 | <i>Chaetogaster diaphanus</i> | - langi | - cristallinus | Paranais litoralis | -- | -- |
| RT5613 | <i>Psammodrillus balanoglossoides</i> | Grania maricola | Glossobalanus sarniensis | Tubificoides heterochaetus | Lumbricillus lineatus | -- |
| RT5614 | <i>Ophidonais serpentina</i> | [Ophidoneis] - | -- | Paranais frici | Nais elinguis | -- |
| RT5615 | <i>Tubificoides pseudogaster</i> | Monopylephorus rubroniveus | - [pseudogaster (Aggregate)] | - diazi | -- | Limnodrilus hoffmeisteri |
| RT5616 | <i>Grania maricola</i> | - postclitellochaeta | -- | -- | -- | -- |
| RT5617 | <i>Slavina appendiculata</i> | Nais elinguis | -- | Spirosperma ferox | Nais elinguis | -- |
| RT5618 | <i>Tubificoides pseudogaster agg.</i> | Tubificidae sp. | - [pseudogaster (Aggregate)] | - [pseudogaster] | - [pseudogaster] | - [pseudogaster (agg.)] |
| RT5619 | <i>Stylaria lacustris</i> | -- | Pristina longiseta | -- | Pristina longiseta | -- |
| RT5620 | <i>Aulodrilus japonicus</i> | - pluriseta | - pluriseta | Nais elinguis | Potamothenrix bavaricus | -- |
| RT5621 | <i>Baltidrillus costatus</i> | -- | -- | -- | -- | -- |
| RT5622 | <i>Chaetogaster limnaei</i> | - langi | - langi | Paranais frici | -- | - diastrophus-group |
| RT5623 | <i>Nais elinguis</i> | Paranais litoralis | -- | -- | Tubificoides insularis | -- |
| RT5624 | <i>Tubificoides swirencoides</i> | -- | -- | -- | -- | -- |
| RT5625 | <i>Lumbriculus variegatus</i> | - [variagatus] | Clitellio (Clitellio) arenarius | Monopylephorus limosus | -- | -- |

Table 2. The identification of fauna made by participating laboratories for RT56 (arranged by participant). Names are given only where different from the AQC identification.

| | Taxon | BI_2507 | BI_2508 | BI_2509 | BI_2510 | BI_2511 |
|--------|---------------------------------------|------------------------------|---------------------|--------------------------------|---------------------------------|-------------------------------|
| RT5601 | <i>Tubificoides amplivasatus</i> | -- | -- | -- | -- | - parapectinatus |
| RT5602 | <i>Paranais litoralis</i> | -- | -- | -- | -- | Nais elinguis |
| RT5603 | <i>Tubificoides benedii</i> | -- | -- | -- | -- | - insularis |
| RT5604 | <i>Clitellio arenarius</i> | Limnodriloides scandinavicus | -- | Tubificoides pseudogaster agg. | Heterodrilus subtilis | Heterodrilus subtilis |
| RT5605 | <i>Psammoryctides barbatus</i> | -- | -- | -- | Tubificoides swirencoides | Baltidrilus costatus |
| RT5606 | <i>Mediomastus fragilis</i> | -- | -- | -- | -- | Capitella minima |
| RT5607 | <i>Psammoryctides barbatus</i> | -- | -- | -- | -- | Tubificoides amplivastus |
| RT5608 | <i>Tubificoides brownae</i> | Limnodrilus hoffmeisteri | -- | - heterochaetus | -- | - pseudogaster agg |
| RT5609 | <i>Tubificoides galiciensis</i> | - [cf. galiciensis] | - [cf. galiciensis] | -- | - [cf. galiciensis] | -- |
| RT5610 | <i>Quistadrilus multisetosus</i> | Tubifex tubifex | -- | Nais elinguis | Limnodrilus spp. | Nais elinguis |
| RT5611 | <i>Manayunkia aestuarina</i> | -- | - [aesturina] | -- | -- | -- |
| RT5612 | <i>Chaetogaster diaphanus</i> | - langi | -- | Amphichaeta sannio | Nais communis | Amphichaeta sannio |
| RT5613 | <i>Psammodrillus balanoglossoides</i> | -- | -- | Pseudofabricia aberrans | -- | Tubificoides heterochaetus |
| RT5614 | <i>Ophidonais serpentina</i> | -- | -- | Nais communis | 0 0 | Monopylephorus rubroniveus |
| RT5615 | <i>Tubificoides pseudogaster</i> | -- | -- | Limnodrilus hoffmeisteri | Limnodrilus hoffmeisteri | - parapectinatus |
| RT5616 | <i>Grania maricola</i> | -- | -- | -- | -- | -- |
| RT5617 | <i>Slavina appendiculata</i> | [Salvina] - | -- | Nais elinguis | -- | Nais elinguis |
| RT5618 | <i>Tubificoides pseudogaster agg.</i> | - [pseudogaster] | - [pseudogaster] | -- | - diazi | Paranais litoralis |
| RT5619 | <i>Stylaria lacustris</i> | -- | -- | Pristina longiseta | Pristina longiseta | Potamothrix bavaricus |
| RT5620 | <i>Aulodrilus japonicus</i> | - pluriseta | - pluriseta | - pluriseta | 0 0 | Tubifex tubifex |
| RT5621 | <i>Baltidrilus costatus</i> | -- | -- | -- | -- | -- |
| RT5622 | <i>Chaetogaster limnaei</i> | -- | -- | -- | 0 0 | Paranais frici |
| RT5623 | <i>Nais elinguis</i> | -- | -- | - variabilis | - variabilis | Tubificoides parapectinatus |
| RT5624 | <i>Tubificoides swirencoides</i> | -- | -- | -- | - cf. galiciensis | -- |
| RT5625 | <i>Lumbriculus variegatus</i> | -- | -- | -- | Clitellio (Clitellio) arenarius | Tubificoides pseudogaster agg |

Table 2. The identification of fauna made by participating laboratories for RT56 (arranged by participant). Names are given only where different from the AQC identification.

| | Taxon | BI_2512 | BI_2513 | BI_2514 | BI_2515 | BI_2517 |
|--------|---------------------------------------|-------------------------------|-------------------------|------------------------------|--------------------------|-----------------------------|
| RT5601 | <i>Tubificoides amplivasatus</i> | - pseudogaster agg. | - parapectinatus | -- | - parapectinatus | -- |
| RT5602 | <i>Paranais litoralis</i> | -- | -- | -- | - frici | -- |
| RT5603 | <i>Tubificoides benedii</i> | -- | -- | -- | -- | -- |
| RT5604 | <i>Clitellio arenarius</i> | -- | -- | -- | Monopylephorus limosus | Tubificoides diazi |
| RT5605 | <i>Psammoryctides barbatus</i> | Potamothenrix bavaricus | -- | -- | -- | -- |
| RT5606 | <i>Mediomastus fragilis</i> | Peresiella clymenoides | -- | -- | -- | -- |
| RT5607 | <i>Psammoryctides barbatus</i> | Potamothenrix bavaricus | -- | -- | -- | Potamothenrix bavaricus |
| RT5608 | <i>Tubificoides brownae</i> | -- | - pseudogaster | -- | - pseudogaster | -- |
| RT5609 | <i>Tubificoides galiciensis</i> | - [cf. galiciensis] | -- | -- | - insularis | -- |
| RT5610 | <i>Quistadrilus multisetosus</i> | Spirosperma ferox | Potamothenrix bavaricus | -- | -- | Tubificoides insularis |
| RT5611 | <i>Manayunkia aestuarina</i> | Aulophorus furcatus | -- | -- | -- | -- |
| RT5612 | <i>Chaetogaster diaphanus</i> | Paranais litoralis | -- | -- | -- | 0 0 |
| RT5613 | <i>Psammodrillus balanoglossoides</i> | -- | Ctenodrillus serratus | Saccoglossus ruber | Jasmineira schaudinni | Saccoglossus 0 |
| RT5614 | <i>Ophidonais serpentina</i> | Nais elinguis | -- | -- | -- | Nais elinguis |
| RT5615 | <i>Tubificoides pseudogaster</i> | - [pseudogaster agg.] | - heterochaetus | - [pseudogaster agg.] | -- | - diazi |
| RT5616 | <i>Grania maricola</i> | -- | -- | -- | -- | -- |
| RT5617 | <i>Slavina appendiculata</i> | Grania postclitellochaeta | Nais elinguis | -- | Pristina longiseta | Tubificoides insularis |
| RT5618 | <i>Tubificoides pseudogaster agg.</i> | Akteredrilus monospermathecus | - [pseudogaster] | [costatus (errant specimen)] | Paranais litoralis | - [pseudogaster] |
| RT5619 | <i>Stylaria lacustris</i> | -- | -- | -- | -- | Polychaeta!!! 0 |
| RT5620 | <i>Aulodrilus japonicus</i> | Monopylephorus irroratus | - pluriseta | -- | Pristina sima | Tubificoides parapectinatus |
| RT5621 | <i>Baltidrilus costatus</i> | -- | -- | -- | -- | -- |
| RT5622 | <i>Chaetogaster limnaei</i> | Aelosoma quaternarium | Paranais frici | -- | -- | 0 0 |
| RT5623 | <i>Nais elinguis</i> | -- | -- | -- | -- | -- |
| RT5624 | <i>Tubificoides swirencoides</i> | -- | -- | -- | Spirosperma ferox | -- |
| RT5625 | <i>Lumbriculus variegatus</i> | Paranais frici | -- | -- | Stylodrilus brachystylus | Clitellio arenarius |

Table 2. The identification of fauna made by participating laboratories for RT56 (arranged by participant). Names are given only where different from the AQC identification.

| | Taxon | BI_2518 | BI_2519 | BI_2520 |
|--------|---------------------------------------|---------------------------|----------------------|---------------------------------|
| RT5601 | <i>Tubificoides amplivasatus</i> | -- | -- | -- |
| RT5602 | <i>Paranais litoralis</i> | -- | -- | -- |
| RT5603 | <i>Tubificoides benedii</i> | -- | -- | -- |
| RT5604 | <i>Clitellio arenarius</i> | Tubificoides pseudogaster | -- | Tubificoides heterochaetus |
| RT5605 | <i>Psammoryctides barbatus</i> | -- | -- | Tubificoides parapectinatus |
| RT5606 | <i>Mediomastus fragilis</i> | -- | -- | -- |
| RT5607 | <i>Psammoryctides barbatus</i> | -- | -- | Tubifex tubifex |
| RT5608 | <i>Tubificoides brownae</i> | Baltidrilus costatus | - heterochaetus | - pseudogaster |
| RT5609 | <i>Tubificoides galiciensis</i> | - [cf. galiciensis] | - [cf. galiciensis] | - [cf. galiciensis] |
| RT5610 | <i>Quistadrilus multisetosus</i> | Tubificoides insularis | -- | Paranais frici |
| RT5611 | <i>Manayunkia aestuarina</i> | -- | -- | Fabriciola baltica |
| RT5612 | <i>Chaetogaster diaphanus</i> | Paranais frici | -- | Oligochaeta? 0 |
| RT5613 | <i>Psammodrillus balanoglossoides</i> | Marionina achaeta | -- | Grania postclitellochaeta agg. |
| RT5614 | <i>Ophidonais serpentina</i> | Nais elinguis | -- | Paranais frici |
| RT5615 | <i>Tubificoides pseudogaster</i> | Nais elinguis | Baltidrilus costatus | Thalassodrillus prostatus |
| RT5616 | <i>Grania maricola</i> | -- | -- | -- |
| RT5617 | <i>Slavina appendiculata</i> | Tubificoides insularis | -- | Tubificoides insularis |
| RT5618 | <i>Tubificoides pseudogaster agg.</i> | - [pseudogaster] | - [pseudogaster] | - [pseudogaster] |
| RT5619 | <i>Stylaria lacustris</i> | -- | -- | Nais elinguis |
| RT5620 | <i>Aulodrilus japonicus</i> | Potamothrix bavaricus | -- | Tubificoides parapectinatus |
| RT5621 | <i>Baltidrilus costatus</i> | -- | -- | -- |
| RT5622 | <i>Chaetogaster limnaei</i> | Amphichaeta sannio | -- | Oligochaeta? 0 |
| RT5623 | <i>Nais elinguis</i> | -- | -- | -- |
| RT5624 | <i>Tubificoides swirencoides</i> | -- | -- | -- |
| RT5625 | <i>Lumbriculus variegatus</i> | Clitellio arenarius | -- | Clitellio (Clitellio) arenarius |

Specimen Images and Detailed Breakdown of Identifications

RT56 was designed to test and assist with the development of identification literature for oligochaetes and to test the compatibility of oligochaete records from northern Europe. A translation of a paper on Dutch marine and brackish water oligochaetes (Van Haaren, 2016) was circulated to ring test participants (30th November 2018), along with the RT documentation. Six of the specimen source pots were supplied by Ton van Haaren (TVH) and additional ring test source pots were sent to TVH for examination; details are included in the explanations below each circulated specimen entry. For oligochaetes, the title line of each circulated specimen entry also includes abbreviated references to three standard oligochaete guides: Van Haaren & Soors (2013) – **VHS13**, Van Haaren (2016) - **VH16**, Timm (2009) – **T09**; other literature required for identification is added to the box text for the circulated specimen. There were some edits from the originally circulated identifications. The results have identified several areas that require further research and we hope that a new guide will be produced along with a future workshop on the group.

LabCodes are abbreviated in this report to exclude the Scheme year, *e.g.* BI_2501 = 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)

RT5601 – *Tubificoides amplivasatus* (Erséus, 1975) (Figures 1a-c); VH16

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: Southwest England. Condition: Fair, small. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 1a. *Tubificoides amplivasatus* (RT5601; 4744) – L

Five specific differences: Labs 04, 11, 13 and 15 identified as *Tubificoides parapectinatus* (Figures 1d-e) (in which the anterior dorsal bifid chaetae have divergent teeth); Lab 12 identified as *T. pseudogaster* agg. (Figures 15a-b; 18a-b) (which lacks hair chaetae).



Fig. 1b. *Tubificoides amplivasatus* (RT5601; 4744) – L, showing hair chaetae

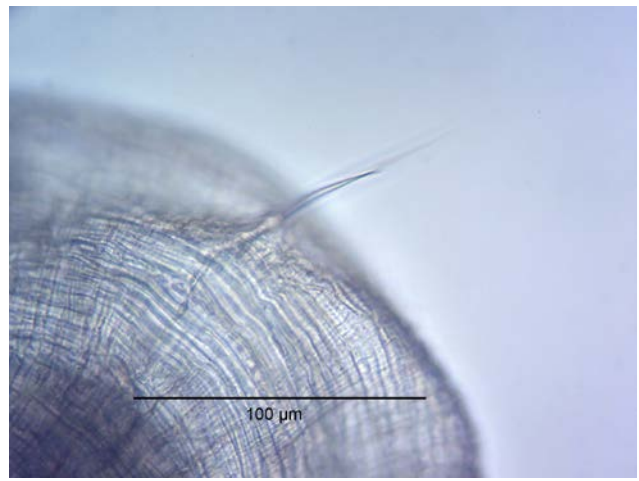


Fig. 1c. *Tubificoides amplivasatus* (RT5601; 4744) – Posterior dorsal chaetae



Fig. 1d. *Tubificoides parapectinatus* (T. van Haaren) – L



Fig. 1e. *Tubificoides parapectinatus* (T. van Haaren) – Anterior dorsal chaetae

RT5602 – *Paranais litoralis* (Müller, 1784) (Figure 2a); VH16, VHS13, T09

Substratum: Mud. Salinity: Reduced (Mesohaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair, small. Specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 2a. *Paranais litoralis* (RT5102; 56019) – L

Two generic and three specific differences: Lab 05 identified as *Tubificoides pseudogaster* agg. (Figures 15a-b; 18a-b) (which has dorsal chaetae on all chaetigers); Lab 11 identified as *Nais elinguis* (Figure 23a) (which has hair chaetae); Lab 15 identified as *Paranais frici* (Figure 2b) (which has the upper tooth longer than the lower tooth for all ventral chaetae and the body wall encrusted with organic material).



Fig. 2b. *Paranaïs frici* (536, 57645) – L

RT5603 – *Tubificoides benedii* (Udekem, 1855) (Figures 3a-b); VH16, VHS13

Substratum: Mud. Salinity: Full (Euhaline). Depth: Infralittoral. Geography: Western Scotland. Condition: Good, medium. Specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 3a. *Tubificoides benedii* (RT5603; 61497) - L

One specific difference: Lab 11 identified as *T. insularis* (Figure 3c) (which has hair chaetae).



Fig. 3b. *Tubificoides benedii* (RT5603; 61497) -

L



Fig. 3c. *Tubificoides insularis* (412692, 6920) – L

RT5604 – *Clitellio arenarius* (Müller, 1776) (Figures 4a-b); VH16, VHS13

Substratum: Sand. Salinity: Full (Euhaline). Depth: Infralittoral. Geography: Southwest England. Condition: Fair, medium. Specimens from two samples; one RT specimen reviewed by T. van Haaren.



Fig. 4a. *Clitellio arenarius* (RT5604; 7754) - L

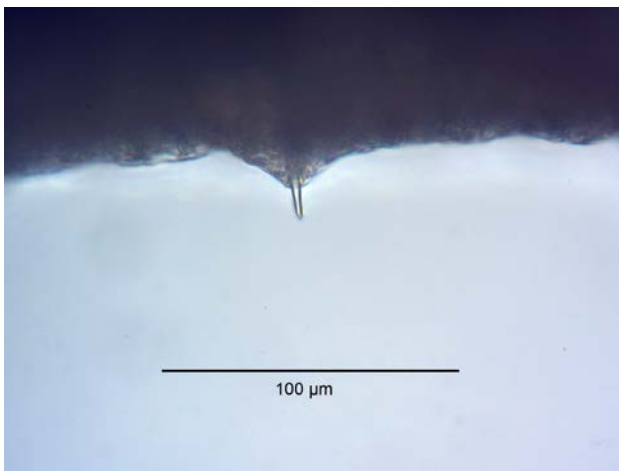


Fig. 4b. *Clitellio arenarius* (RT5604; 7754) -
Chaeta



Fig. 4d. *Tubificoides heterochaetus* (T. van Haaren) – L

Eleven generic and eleven specific differences: Lab 15 identified as *Monopylephorus limosus* (Figure 4c) (a reduced salinity species in which the ventral chaetae of Segment II are simple pointed while those of remaining segments have a minute distal tooth); Labs 03, 05 and 20 identified as *Tubificoides heterochaetus* (Figures 4d-e); Labs 06, 09 and 18 identified as *T. pseudogaster*, or 'agg.' (Figures 15a-b; 18a-b); Lab 17 identified as *T. diazi* (Figures 4f-g); Labs 10 and 11 identified as *Heterodrilus subtilis* (Figures 4h-i); Lab 17 identified as *Limnodriloides scandinavicus* (Figures 4j-k); (all of which have some distinctly bifid chaetae, at least in anterior ventral bundles).



Fig. 4c. *Monopylephorus limosus* (T. van Haaren)
– **Ventral chaetae of II**



Fig. 4e. *Tubificoides heterochaetus* (T. van Haaren) – **Posterior chaetae and papillae**



Fig. 4f. *Tubificoides diazi* (T. van Haaren) – L



Fig. 4g. *Tubificoides diazi* (T. van Haaren) –
Posterior segments



Fig. 4h. *Heterodrilus subtilis* (T. van Haaren) – L



Fig. 4i. *Heterodrilus subtilis* (T. van Haaren) –
Anterior ventral chaeta



Fig. 4j. *Limnodriloides scandinavicus* (6054) – L



Fig. 4k. *Limnodriloides scandinavicus* (6054) – L

RT5605 – *Psammoryctides barbatus* (Grube, 1861) (Figures 5a-b); VHS13, T09

Substratum: Diamicton. Salinity: Low (Oligohaline). Depth: Intertidal. Geography: Southeast England. Condition: Fair, medium. One RT specimen reviewed by T. van Haaren.



Fig. 5a. *Psammoryctides barbatus* (RT5605; 59379) – L

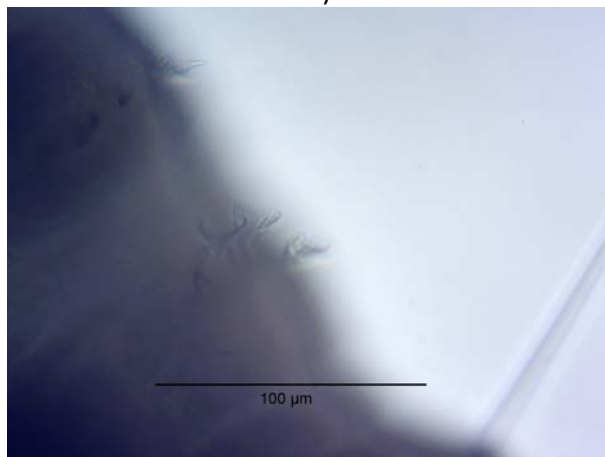


Fig. 5b. *Psammoryctides barbatus* (RT5605; 59379) – Anterior dorsal chaetae

Four generic and four specific differences: Lab 11 identified as *Baltidrilus costatus* (Figures 21a-b) (which lacks hair chaetae); Lab 12 identified as *Potamotheix bavaricus* (Figure 5c); Lab 10 identified as *Tubificoides swirencoides* (Figures 24a-b) (both of which lack palmate chaetae); Lab 20 identified as *T. parapectinatus* (Figures 1d-e) (which has simple pointed posterior dorsal crotchets).



Fig. 5c. *Potamotheix bavaricus* (T. van Haaren) – Spermathecal chaeta

RT5606 – *Mediomastus fragilis* Rasmussen, 1973 (Figure 6a)

Substratum: Diamicton. Salinity: Full (Euhaline). Depth: Circalittoral (Upper Shelf). Geography: Southwest England. Condition: Fair, medium. All specimens from one sample.



Fig. 6a. *Mediomastus fragilis* (RT5606; 4737) – L

Two generic and two specific differences: Lab 12 identified as *Peresiella clymenoides* (Figure 6b) (which has capillary chaetae on only three chaetigers); Lab 11 identified as *Capitella minima* (Figure 6c shows *Capitella* sp.) (which has a rounded prostomium).



Fig. 6b. *Peresiella clymenoides* (1469, 58918) – L



Fig. 6c. *Capitella* sp. (2682, 61167) – L

RT5607 – *Psammoryctides barbatus* (Grube, 1861) (Figures 7a-b); VHS13, T09

Substratum: Diamicton. Salinity: Low (Oligohaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair, medium. Specimens from three samples; one RT specimen reviewed by T. van Haaren.



Fig. 7a. *Psammoryctides barbatus* (RT5607; 57656) – L

Four generic and four specific differences: Lab 11 identified as *Tubificoides amplivasatus* (Figures 1a-c); Lab 20 identified as *Tubifex tubifex* (Figures 7c-d); Labs 12 and 17 identified as *Potamothrix bavaricus* (Figure 5c) (all of which lack palmate chaetae).



Fig. 7b. *Psammoryctides barbatus* (RT5607; 57656) – L



Fig. 7c. *Tubifex tubifex* (1601, 59117) – L

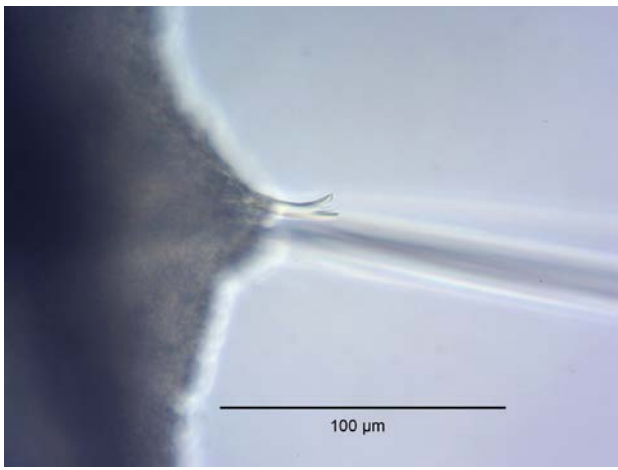


Fig. 7d. *Tubifex tubifex* (1601, 59117) –
Anterior dorsal chaetae

RT5608 – *Tubificoides brownae* Brinkhurst & Baker, 1979 (Figures 8a-b); VH16, VHS13

Substratum: Mud. Salinity: Reduced (Mesohaline). Depth: Infralittoral. Geography: North of Ireland. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 8a. *Tubificoides brownae* (RT5608; 8292) –

L

Two specific and twelve generic differences: Lab 18 identified as *Baltidrilus costatus* (Figures 21a-b) (which has palmate chaetae); Lab 07 identified as *Limnodrilus hoffmeisteri* (Figure 8c) (which has teeth of subequal length in anterior chaetae); Labs 09 and 19 identified as *Tubificoides heterochatus* (Figures 4d-e) (which has simple pointed chaetae and papillations, posteriorly); Lab 05 identified as *T. diazi* (Figures 4f-g); Labs 01, 04, 13, 15 and 20 identified as *T. pseudogaster* (Figures 15a-b; 18a-b) (both of which have two chaetae in most posterior bundles); Labs 03 and 11 identified as *T. pseudogaster* agg. (we recommend identifications at species level for this ring test).

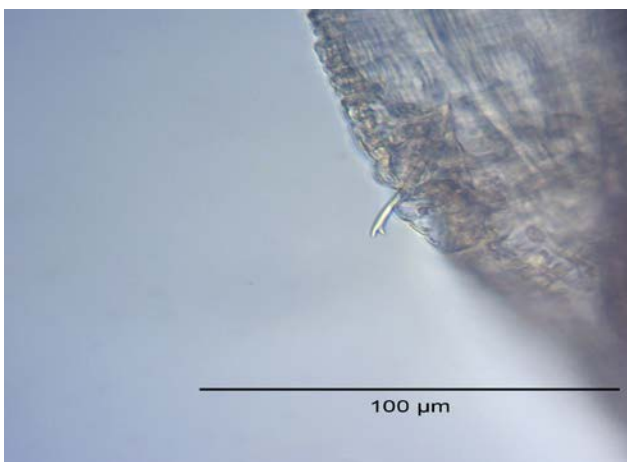


Fig. 8b. *Tubificoides brownae* (RT5608; 8292) –

Posterior chaeta



Fig. 8c. *Limnodrilus hoffmeisteri* (1906, 59363)

- L

RT5609 – *Tubificoides galiciensis* Martinez-Ansemil & Giani, 1987 (Figures 9a-c)

Substratum: Mud. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 9a. *Tubificoides galiciensis* (RT5609; 10389) – L

Three specific differences: Labs 04 and 15 identified as *Tubificoides insularis* (Figure 3c) (which has papillations from segment III or IV and chaetae with reduced distal teeth); Lab 05 identified as *T. swirencoides* (Figures 24a-b) (which has simple pointed dorsal chaetae in posterior bundles).

The circulated specimens match the original description (Martinez-Ansemil & Giani, 1987).



Fig. 9b. *Tubificoides galiciensis* (RT5609; 10389) – L

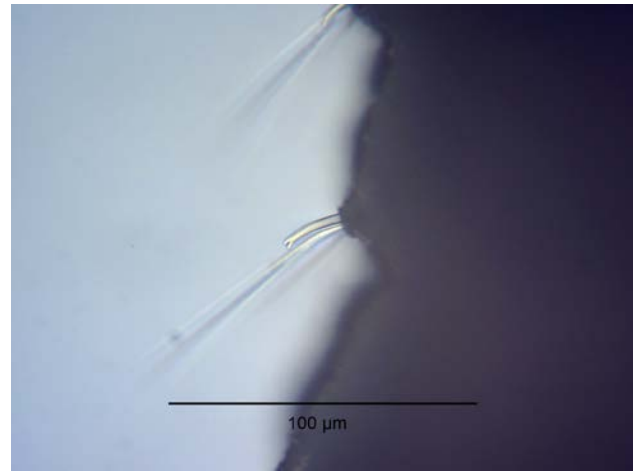


Fig. 9c. *Tubificoides galiciensis* (RT5609; 10389) – Posterior dorsal chaetae

RT5610 – *Quistadrilus multisetosus* (Johnston, 1838) (Figure 10a); VHS13, T09

Substratum: Diamicton. Salinity: Fresh. Depth: Infralittoral. Geography: Netherlands. Condition: Fair, medium. Specimens from three samples; supplied by T. van Haaren.



Fig. 10a. *Quistadrilus multisetosus* (RT5610; 428479) – L

Thirteen generic and thirteen specific differences: Lab 10 identified as *Limnodrilus* sp. (Figure 8c) (which lacks hair chaetae and papillations); Labs 09 and 11 identified as *Nais elinguis* (Figure 23a); Lab 20 identified as *Paranais frici* (Figure 2b) (both of which lack dorsal chaetae on some anterior chaetigers); Labs 05 and 13 identified as *Potamothrrix bavaricus* (Figure 5c); Lab 07 identified as *Tubifex tubifex* (Figures 7c-d) (both of which lack papillations); Labs 04, 17 and 18 identified as *Tubificoides insularis* (Figure 3c); Labs 02 and 12 identified as *Spirosperma ferox* (Figures 10b-c); Lab 01 identified as *Peloscolex ferox*, a

synonym of *Spirosperma ferox* (both of which have their papillations evenly sized and evenly distributed and not annular).



Fig. 10b. *Spirosperma ferox* (T. van Haaren) – L

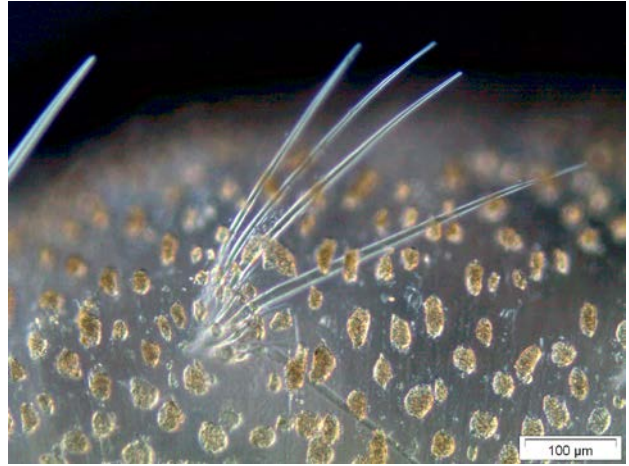


Fig. 10c. *Spirosperma ferox* (T. van Haaren) –
Anterior dorsal chaetae

RT5611 – *Manayunkia aestuarina* (Bourne, 1883) (Figure 11a)

Substratum: Mud. Salinity: Variable (Euryhaline). Depth: Intertidal. Geography: Southeast England. Condition: Good, small. Specimens from two samples.



Fig. 11a. *Manayunkia aestuarina* (RT5611;
55518) – D

Two generic and two specific differences: Lab 12 identified as *Aulophorus furcatus* (Figure 11b) (a freshwater species which lacks uncini and has bifid crotches and needles and dorsal hairs and anal gills); Lab 20 identified as *Fabriciola baltica* (no material available; Figure 13c shows *Pseudofabricia aberrans*) (which has pygidial eyes).

Labs 05 and 08 mis-spelled the specific name as '*aesturina*'.



Fig. 11b. *Aulophorus furcatus* (T. van Haaren) –
L

RT5612 – *Chaetogaster diaphanus* (Gruithuisen, 1828) (Figure 12a); VHS13, T09

Substratum: Floral turf. Salinity: Low (Oligohaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 12a. *Chaetogaster diaphanus* (RT5612; 59127) – L

Eight generic and eleven specific differences: Labs 04 and 12 identified as *Paranais litoralis* (Figure 2a); Lab 18 identified as *P. frici* (Figure 2b); Labs 09 and 11 identified as *Amphichaeta sannio* (Figure 12b); Lab 10 identified as *Nais communis* (Figure 12c) (all of which have dorsal chaetae on some segments); Labs 01 and 07 identified as *Chaetogaster langi* (no material available) (in which the mouth has a rounded opening); Lab 03 identified as *C. cristallinus* (no material available) (both of which have shorter ventral chaetae in Segment II).

Lab 20 identified as ‘Oligochaeta?’ (we recommend identifications at species level for this ring test). Lab 17 did not attempt identification of this specimen.

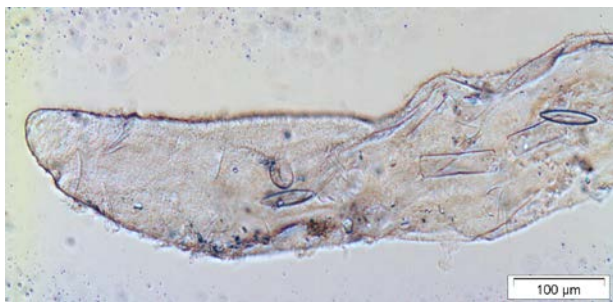


Fig. 12b. *Amphichaeta sannio* (T. van Haaren) – L



Fig. 12c. *Nais communis* (T. van Haaren) – L

RT5613 – *Psammodrillus balanoglossoides* Swedmark, 1952 (Figure 13a)

Substratum: Sand. Salinity: Full (Euhaline). Depth: Intertidal. Geography: Intertidal. Condition: Fair, small. Specimens from two samples.



Fig. 13a. *Psammodrillus balanoglossoides* (RT5613; 55614) - L

Twelve generic and twelve specific differences: Lab 03 identified as *Glossobalanus sarniensis*; Lab 14 identified as *Saccoglossus ruber*; Lab 17 identified as *Saccoglossus* sp. (Figure 13b shows an unidentified Enteropneusta) (all of which lack both annulations and chaetae); Lab 18 identified as *Marionina achaeta* (no material available) (which lacks chaetae); Lab 09 identified as *Pseudofabricia aberrans* (Figure 13c); Lab 15 identified as *Jasmineira schaudinni* (Figure 13d shows *Jasmineira* sp.) (both of which have complex collar structures); Lab 13 identified as *Ctenodrillus serratus* (Figures 13e-f) (in which all chaetae are coarsely serrated); Lab 02 identified as *Grania maricola* (Figure 16a); Lab 20 identified as *G. postclitellochaeta* agg.; Lab 05 identified as *Lumbricillus lineatus*; (Figure 13g shows an unidentified Enchytraeidae); Labs 04 and 11 identified as *Tubificoides heterochaetus* (Figures 4d-e) (which has ventral bifid chaetae).



Fig. 13b. Enteropneusta indet. (2165, 60170) - L



Fig. 13c. *Pseudofabricia aberrans* (2682, 61183) - L



Fig. 13d. *Jasmineira* sp. (1301, 58449) - V



Fig. 13e. *Ctenodrillus serratus* (412202, 4719) - L

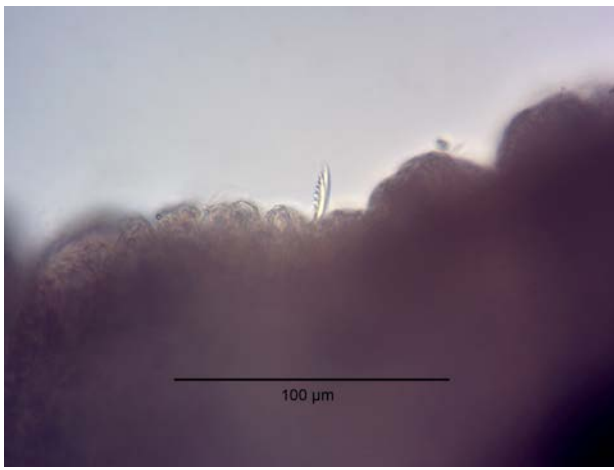


Fig. 13f. *Ctenodrilus serratus* (412202, 4719) -
Chaeta



Fig. 13g. Enchytraeidae indet. (413278, 9357) - **L**

RT5614 – *Ophidonais serpentina* Söderström, 1920 (Figure 14a); VHS13, T09

Substratum: Diamicton. Salinity: Fresh. Depth: Infralittoral. Geography: Netherlands. Condition: Fair, medium. Specimens from two samples; supplied by T. van Haaren.



Fig. 14a. *Ophidonais serpentina* (RT5614;
428469) - **L**

Nine generic and nine specific differences: Lab 11 identified as *Monopylephorus rubroniveus* (Figures 14b-c) (which has bifid chaetae in all bundles from II); Labs 04 and 20 identified as *Paranais frici* (Figure 2b) (which lacks eyes); Labs 05, 12, 17 and 18 identified as *Nais elinguis* (Figure 23a); Lab 09 identified as *N. communis* (Figure 12c) (both of which have hair chaetae).

Lab 20 identified as '*Ophidoneis*' (we recommend identifications at species level for this ring test) and mis-spelled the genus. Lab 10 did not attempt identification of this specimen.



Fig. 14b. *Monopylephorus rubroniveus* (T. van
Haaren) - **L**



Fig. 14c. *Monopylephorus rubroniveus* (T. van
Haaren) - **Anterior ventral chaetae**

RT5615 – *Tubificoides pseudogaster* agg. (Dahl, 1960) (Figures 15a-b); VH16, VHS13

Substratum: Mud. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: North of Ireland. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 15a. *Tubificoides pseudogaster* agg. (RT5615; 58771) – L

Seven generic and eleven specific differences: Lab 19 identified as *Baltidrilus costatus* (Figures 21a-b) (which has palmate anterior dorsal chaetae); Lab 18 identified as *Nais elinguis* (Figure 23a); Lab 11 identified as *Tubificoides parapectinatus* (Figures 1d-e) (both of which have hair chaetae); Lab 13 identified as *Tubificoides heterochaetus* (Figures 4d-e) (which has posterior simple pointed chaetae); Lab 20 identified as *Thalassodrilus prostatus* (Figure 15c); Labs 04 and 17 identified as *Tubificoides diazi* (Figures 4f-g) (both of which have anterior bifid chaetae in which the distal tooth is shortest); Lab 01 identified as *Monopylephorus rubroniveus* (Figures 14b-c); Labs 06, 09 and 10 identified as *Limnodrilus hoffmeisteri* (Figure 8c) (both of which lack a flattened, thickened ventral surface of the clitellum that would stain strongly with Rose Bengal).

Labs 03, 12 and 14 added 'agg.' to the species name; Labs 05, 07, 08 and 15 did not.



Fig. 15b. *Tubificoides pseudogaster* agg. (RT5615; 58771) – V



Fig. 15c. *Thalassodrilus prostatus* (T. van Haaren) – V

RT5616 – *Grania maricola* Southern, 1913 (Figures 16a, c); VH16

Substratum: Sand. Salinity: Full (Euhaline). Depth: Infralittoral. Geography: Southwest England. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.

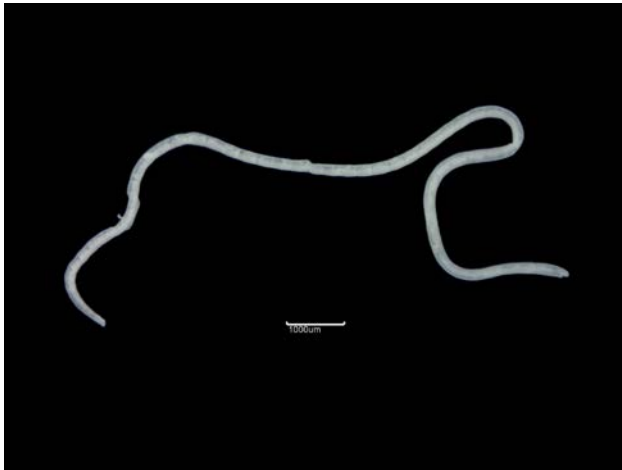


Fig. 16a. *Grania maricola* (RT5616 ; 6998) – L



Fig. 16b. *Grania postclitellochaeta* agg. (T. van Haaren) – L

One generic and one specific difference: Lab 01 identified as *Grania postclitellochaeta* (Figures 16b-c) (which lacks dorsal chaetae).



Fig. 16c. *Grania maricola* and *G. postclitellochaeta* agg. (T. van Haaren) – L

RT5617 – *Slavina appendiculata* (Jacobi, 1883) (Figure 17a); VHS13, T09

Substratum: Diamicton. Salinity: Fresh. Depth: Infralittoral. Geography: Netherlands. Condition: Fair, medium. All specimens from one sample; supplied by T. van Haaren.



Fig. 17a. *Slavina appendiculata* (RT5617) – L

Eleven generic and eleven specific differences: Lab 12 identified as *Grania postclitellochaeta* (Figures 16b-c) (which lacks dorsal chaetae); Lab 04 identified as *Spirosperma ferox* (Figures 10b-c); Labs 17, 18 and 20 identified as *Tubificoides insularis* (Figure 3c) (both of which have dorsal chaetae in all chaetigers); Lab 15 identified as *Pristina longiseta* (Figure 17b) (which has a proboscis); Labs 01, 05, 09, 11 and 13 identified as *Nais elinguis* (Figure 23a) (which has all hair chaetae of similar length and lacks encrustation of the body wall).

Lab 07 mis-spelled the genus as '*Salvina*'.



Fig. 17b. *Pristina longiseta* (T. van Haaren) – L

RT5618 – *Tubificoides pseudogaster* agg. (Dahl, 1960) (Figures 18a-b); VH16, VHS13

Substratum: Mud. Salinity: Variable (Euryhaline). Depth: Intertidal. Geography: Southwest England. Condition: Fair, medium. All specimens from one sample; remainder of source pot reviewed by T. van Haaren.



Fig. 18a. *Tubificoides pseudogaster* agg. (RT5617; 56319) – L

Four generic and five specific differences: Labs 11 and 15 identified as *Paranais litoralis* (Figure 2a) (which lacks dorsal chaetae on some anterior segments); Lab 12 identified as *Aktedrilus monospermathecus* (Figure 18c) (which does not reach the size of the specimens sent); Lab 10 identified as *Tubificoides diazi* (Figures 4g-f) (which has bifid chaetae in which the distal tooth is shortest).

Lab 01 identified as ‘Tubificidae’ (we recommend identifications at species level for this ring test; although the aggregate identification was appropriate for this specimen). Lab 14 identified as *Baltidrilus costatus*; we acknowledge that this was a misplaced specimen.

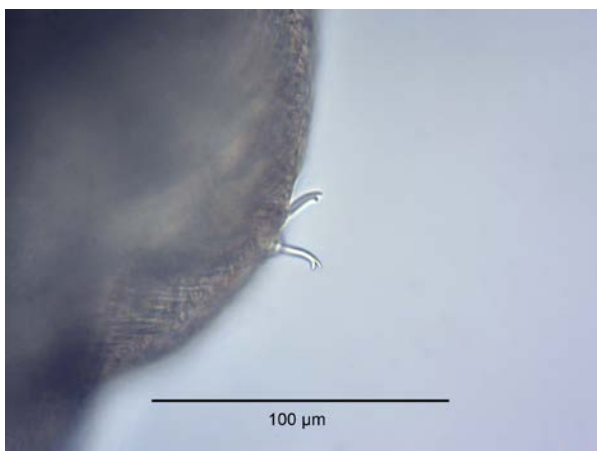


Fig. 18b. *Tubificoides pseudogaster* agg. (RT5617; 56319) – Chaetae



Fig. 18c. *Aktedrilus monospermathecus* (T. van Haaren) – L

RT5619 – *Stylaria lacustris* (Linnaeus, 1767) (Figure 19a); VHS13, T09

Substratum: Floral turf. Salinity: Low (Oligohaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 19a. *Stylaria lacustris* (RT5619; 59125) – D

Seven generic and seven specific differences: Lab 17 identified as Polychaeta (e.g. Figure 6a); Lab 11 identified as *Potamothrix bavaricus* (Figure 5c); Lab 20 identified as *Nais elinguis* (Figure 23a) (all of which lack a styliform proboscis); Labs 03, 05, 09 and 10 identified as *Pristina longiseta* (Figure 17b) (which lacks lobes alongside the proboscis).

RT5620 – *Aulodrilus japonicus* Bobretzky, 1870 (Figures 20a-b); VHS13, T09

Substratum: Diamicton. Salinity: Fresh. Depth: Infralittoral. Geography: Netherlands. Condition: Fair, medium. Specimens from four samples; supplied by T. van Haaren.



Fig. 20a. *Aulodrilus japonicus* (RT5620) – L

Nine generic and fifteen specific differences: Lab 04 identified as *Nais elinguis* (Figure 23a); Lab 15 identified as *Pristina sima* (no material available); (both of which lack dorsal chaetae in some anterior chaetigers); Lab 12 identified as *Monopylephorus irroratus* (Figure 20b); Lab 11 identified as *Tubifex tubifex* (Figure 7c,d); Labs 05 and 18 identified as *Tubificoides parapectinatus* (Figures 1d-e); Labs 05 and 18 identified as *Potamothrix bavaricus* (Figure 5c) (all of which lack an abrupt dilation of the digestive tract); Labs 01, 03, 07, 08, 09 and 13 identified as *Aulodrilus plurisetia* (Figure 20c) (which has bifid crochets only and in which the abrupt dilation of the digestive tract is in segment VII-VIII, rather than X-XI).

Lab 10 did not attempt identification of this specimen.



Fig. 20b. *Monopylephorus irroratus* (414268, 55522) - L



Fig. 20c. *Aulodrilus pluriseta* (536, 57656) - L

RT5621 – *Baltidrilus costatus* (Claparède, 1863) (Figures 21a-b); VH16, VHS13

Substratum: Mud. Salinity: Reduced (Mesohaline). Depth: Infralittoral. Geography: Southeast England. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 21a. *Baltidrilus costatus* (RT5621; 55792) –

V

No generic and no specific differences.

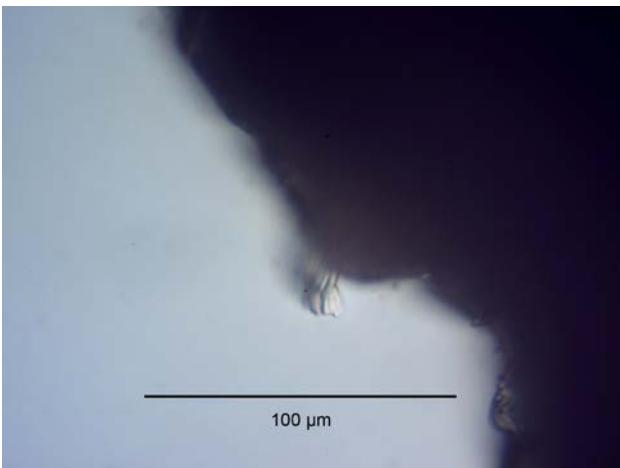


Fig. 21b. *Baltidrilus costatus* (RT5621; 55792) –
Anterior dorsal chaetae

RT5622 – *Chaetogaster limnaei* M. Sars in G.O. Sars, 1872 (Figure 22a); VHS13, T09

Substratum: Diamicton. Salinity: Fresh. Depth: Infralittoral. Geography: Netherlands. Condition: Fair, medium. All specimens from one sample; supplied by T. van Haaren.

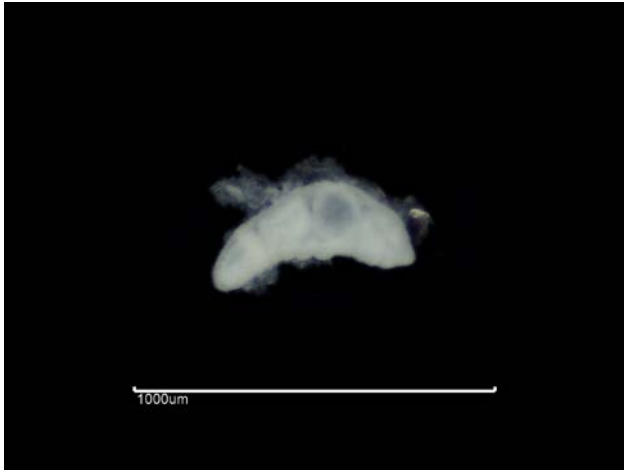


Fig. 22a. *Chaetogaster limnaei* (RT5622; 428447) – L

Eight generic and eleven specific differences: Lab 12 identified as *Aelosoma quaternarium* (no material available) (which has hair chaetae in both rami); Labs 04, 11 and 13 identified as *Paranais frici* (Figure 2b); Lab 18 identified as *Amphichaeta sannio* (Figure 12b) (both of which have dorsal chaetae on some segments); Labs 01 and 03 identified as *Chaetogaster langi* (no material available); Lab 06 identified as *C. diastrophus* group (no material available) (which have less strongly curved teeth on its bifid chaetae).

Lab 20 identified as ‘Oligochaeta?’ (we recommend identifications at species level for this ring test). Labs 10 and 17 did not attempt identification of this specimen.

RT5623 – *Nais elinguis* Müller, 1774 (Figure 23a); VH16, VHS13, T09

Substratum: Floral turf. Salinity: Low (Oligohaline). Depth: Infralittoral. Geography: North of Ireland. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.



Fig. 23a. *Nais elinguis* (RT5623; 58743) – L

Three generic and five specific differences: Lab 11 identified as *Tubificoides parapectinatus* (Figures 1d-e); Lab 05 identified as *T. insularis* (Figure 3c) (both of which have dorsal chaetae in all chaetigers); Lab 01 identified as *Paranais litoralis* (Figure 2a); (which lacks hair chaetae); Labs 09 and 10 identified as *Nais variabilis* (no material available) (which has shorter teeth on its needle chaetae).

RT5624 – *Tubificoides swirencoides* Brinkhurst, 1985 (Figures 24a-b)

Substratum: Diamicton. Salinity: Variable (Euryhaline). Depth: Infralittoral. Geography: North of Ireland. Condition: Fair, medium. All specimens from one sample; one RT specimen reviewed by T. van Haaren.

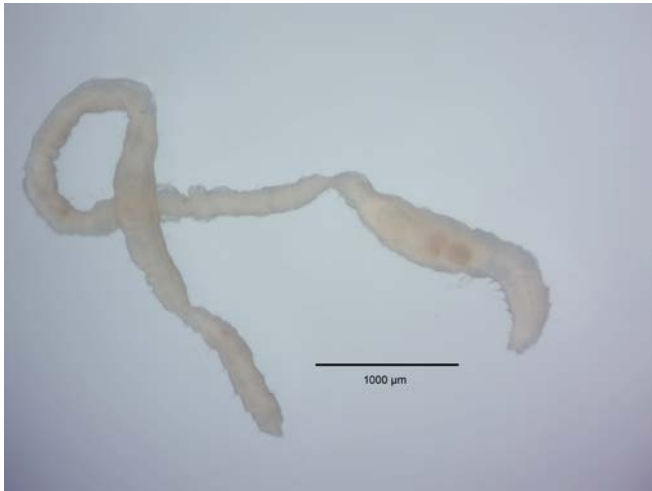


Fig. 24a. *Tubificoides swirencoides* (RT5624; 58743) – L

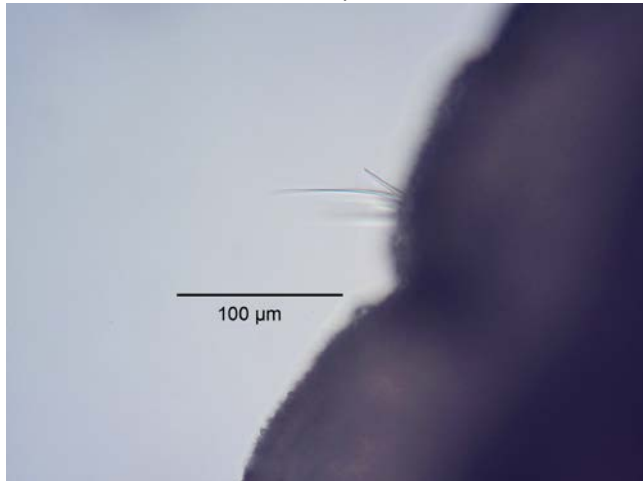


Fig. 24b. *Tubificoides swirencoides* (RT5624; 58743) – Posterior dorsal chaetae

One generic and two specific differences: Lab 15 identified as *Spirosperma ferox* (Figures 10b-c) (which is papillated from the first chaetigers); Lab 10 identified as '*Tubificoides cf. galiciensis*' (Figures 9a-c) (which has open bifid chaetae in all dorsal bundles).

The circulated specimens match the original description (Brinkhurst, 1985).

RT5625 – *Lumbriculus variegatus* (Okuda, 1937) (Figure 25a); VHS13, T09

Substratum: Diamicton. Salinity: Fresh. Depth: Infralittoral. Geography: Netherlands. Condition: Fair, medium. All specimens from one sample; supplied by T. van Haaren.



Fig. 25a. *Lumbriculus variegatus* (RT5625; 429333) – L

Nine generic and nine specific differences: Lab 12 identified as *Paranais frici* (Figure 2b); (which lacks dorsal chaetae on some anterior dorsal bundles); Lab 11 identified as *Tubificoides pseudogaster* agg. (Figure 15a-b; 18a-b); Lab 04 identified as *Monopylephorus limosus* (Figure 4c); Labs 03, 10, 17, 18 and 20 identified as *Clitellio arenarius* or *C. (Clitellio) arenarius* (Figures 4a-b) (all of which have at least some anterior dorsal bundles with more than two chaetae); Lab 15 identified as *Stylodrilus brachystylus* (no material available) (in which all chaetae are simple pointed).

Lab 01 mis-spelled the specific name as '*variagatus*'.

Taxonomic and Identification policy problems highlighted by this RT

The ring test was circulated during ongoing work on an updated key to British oligochaetes, as part of the process of developing the key. It was anticipated that it would highlight areas for further work. Some participants submitted comments following submission of the initial results and reviews of identifications and scoring policies were made after circulation of the interim results. Several taxonomic and identification problems were highlighted through this exercise, discussed above; more detail on the more complex problems is given below.

Tubificoides pseudogaster complex. This complex was previously used to include all *Tubificoides* spp. in which all chaetae were bifid. Since publication of Van Haaren (2016), more practical features for the determination of *T. brownae*, *T. diazi* and *T. pseudogaster* have been available. In this Ring Test, Specimen 15 was selected to represent *T. pseudogaster* but was considered by TVH as possibly similar to *T. mackiei* (Kvist & Erséus, 2018). Specimen 18 was originally selected as *T. diazi* but chaetal structure showed it to be closer to *T. pseudogaster*; they were, however, immature and lacked the characteristic ventral thickening.

Acknowledgements

We would like to thank all participants that have provided feedback following issue of interim results. We are especially grateful to Ton van Haaren (Eurofins, Amsterdam) for producing the translation that accompanied this ring test, for the review of the text for this bulletin and several specimens and for supply of Specimens 10, 14, 17, 20, 22 and 25 and images, as identified through this bulletin.

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Ring Test Specimen Return Instructions

Please return all ring test specimens by 15th April 2019. 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**