



NMQAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

Laboratory Reference Module Summary Report

Benthic Invertebrate Component - 2017/18

LR22

26 March 2018

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MODULE / EXERCISE DETAILS

Module:	Laboratory Reference (LR)
Exercises:	LR22
Data/Sample Request Circulated:	10th July 2017
Sample Submission Deadline:	31st August 2017
Number of Subscribing Laboratories:	7
Number of LR Received:	4

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Table 1. Summary of mis-identified taxa in the Laboratory Reference Module (LR22) (erroneous identifications in brackets).

LabCode	Taxonomic Edits	Major Taxonomic Group				
		Polychaeta	Oligochaeta	Crustacea	Mollusca	Other
BI_2402	5	<i>Spio symphyta</i> (<i>Spio filicornis</i>)	-	<i>Leucothoe procera</i> (<i>Leucothoe ?richardii</i>)	-	-
		<i>Scoletelepis bonnieri</i> (<i>Scoletelepis squamata</i>)	-	-	-	-
		<i>Laonice</i> (<i>Laonice sarsi</i>)	-	-	-	-
		<i>Dipolydora</i> (<i>Dipolydora flava</i>)	-	-	-	-
BI_2403	7	<i>Goniada emerita</i> (<i>Goniadella bobrezkii</i>)	-	<i>Nebalia reboredae</i> (<i>Nebalia bipes</i>)	-	-
		<i>Polydora</i> sp. A (<i>Polydora cornuta</i>)	-	<i>Diastylis rathkei</i> (<i>Diastylis cornuta</i>)	-	-
		<i>Syllides?</i> (<i>Anoplosyllis edentula</i>)	-	<i>Abludomelita obtusata</i> (<i>Tryphosa nana</i>) - in mixture	-	-
		Spirorbinae (<i>Ditrupea arietina</i>)	-	-	-	-
BI_2404	10	<i>Branchiommoma bombyx</i> (<i>Branchiommoma bairdi</i>)	<i>Tubificoides diazi</i> agg. (<i>Tubificoides pseudogaster</i>)	-	-	-
		<i>Chone</i> (<i>Panousea africana</i>)	<i>Tubificoides benedii</i> (<i>Tubificoides pseudogaster</i>)	-	-	-
		<i>Serpulidae</i> (<i>Parasabella</i>)	-	-	-	-
		<i>Sphaerosyllis</i> cf. <i>taylori</i> (<i>Sphaerosyllis hystrix</i>)	-	-	-	-
		<i>Myrianida</i> (<i>Odontosyllis fulgurans</i>)	-	-	-	-
		<i>Spiophanes kroyeri</i> (<i>Laonice appelloefi</i>)	-	-	-	-
		<i>Apistobranchnus tenuis</i> (Paraonidae)	-	-	-	-
		<i>Cirratulus caudatus</i> (<i>Dodecaceria</i>)	-	-	-	-
BI_2422	15	<i>Spio armata</i> (<i>Spio gonioccephala</i>)	-	-	<i>Onoba semicostata</i> (<i>Alvania</i> sp.) - in mixture	-
		<i>Spio symphyta</i> (<i>Spio decorata</i> small) - in mixture	-	-	<i>Pusillina inconspicua</i> (<i>Rissoa?</i>)	-
		-	-	-	<i>Rissoa parva</i> - dead-collected (<i>Hyala vitrea</i>)	-
		-	-	-	<i>Eulima bilineata</i> (<i>Eulimella</i> sp.)	-
		-	-	-	<i>Clelandella miliaris</i> (<i>Calliostoma granulatum</i>)	-
		-	-	-	<i>Gibbula tumida</i> (<i>Gibbula cineraria?</i>)	-
		-	-	-	<i>Jujubinus montagui</i> (<i>Gibbula cineraria?</i>) - in mixture	-
		-	-	-	<i>Gibbula cineraria</i> (<i>Gibbula umbilicus?</i>)	-
		-	-	-	<i>Polititapes rhomboides</i> - juvenile (<i>Kurtiella</i> sp. - Large)	-
		-	-	-	<i>Polititapes</i> - juvenile (<i>Kurtiella</i> sp. - small) - in mixture	-
		-	-	-	<i>Rissoa parva</i> (<i>Crisilla</i> (<i>Alvania</i>) <i>semistriata</i>)	-
		-	-	-	<i>Arcopagia crassa</i> (<i>Lucinidae</i> sp.)	-
-	-	-	<i>Rissoa parva</i> (<i>Pusillina sarsi?</i>)	-		
TOTAL	37	18	2	4	13	0
% Error	38	49	5	11	35	0



NB: % errors for taxonomic groups are percentages of the total errors generated by each taxon (not percentages of errors within each taxon)

Table 2. Summary of identification policy differences in the Laboratory Reference Module (LR22) (original identifications in brackets).

LabCode	Number of differences	Identification policy difference explanations (participant original identifications in brackets)
BI_2402	8	<i>Dipolydora saintjosephi</i> (' <i>Dipolydora santjosephi</i>) - Spelling error
		<i>Spio decoratus</i> (<i>Spio decorata</i>) - Nomenclature update
		<i>Spio</i> (<i>Spio filicornis</i>) - Taxonomic resolution reduced; as <i>S. decoratus</i> , but keel and colour atypical
		<i>Chaetozone elakata</i> (<i>Chaetozone</i> "species D") - Nomenclature update
		<i>Nucula nucleus</i> (<i>Nucula ?nucleus</i>) - Taxonomic resolution increased
		<i>Hypsicomus stichophthalmos?</i> (<i>Hypsicomus stichophthalmos</i>) - Taxonomic resolution reduced; uncertain
		Ampharetidae (<i>Anoborthus sp.</i>) - Taxonomic resolution reduced; probably not <i>Anoborthus</i> (spelling error in original data); possible undescribed sp.
		<i>Malacoceros girardi</i> (<i>Malacoceros giardi</i>) - Spelling error
BI_2403	1	<i>Kroyera carinata</i> (<i>Monoculodes carinatus</i>) - Nomenclature update
BI_2404	7	<i>Myrianida</i> (<i>Myrianida quindecimdentata</i>) - Taxonomic resolution decreased; species identification features for <i>Myrianida</i> typically require fresh material
		<i>Cumella pygmaea</i> (<i>Cumella</i> (<i>Cumella</i>) <i>pygmaea</i>) - Recording policy difference; APEM do not record subgenera
		<i>Polycirrus</i> (<i>Polycirrus denticulatus</i>) - Taxonomic resolution decreased; tails are typically required for <i>Polycirrus</i> , so APEM leave all to genus to avoid condition-dependant variation
		<i>Eurynome juv.</i> (<i>Eurynome</i>) - Recording policy difference; APEM record <i>Eurynome</i> as juvenile below 5mm
		<i>Ampharete cf. acutifrons</i> (<i>Ampharete acutifrons</i>) - Recording policy difference; UK specimens that key out to <i>A. acutifrons</i> may not be this sp.
		<i>Spio martinensis</i> (<i>Spio</i>) - Taxonomic resolution increased; APEM identify <i>Spio</i>
BI_2422	11	<i>Alvania punctura</i> (<i>Alvania sp.</i>) - Mixture; Taxonomic resolution increased
		<i>Alvania beani</i> (<i>Alvania sp.</i>) - Mixture; Taxonomic resolution increased
		<i>Raphitoma linearis</i> (<i>Raphitoma linearis</i>) - Spelling error
		<i>Acanthochitona crinita</i> (<i>Acanthochitonida crinitis</i>) - Spelling error
		<i>Myriochele danielsseni</i> (<i>Galathowenia danielssenia</i>) - Spelling error; Nomenclature update
		<i>Kurtiella bidentata</i> (<i>Kurtiella sp.</i> - small) - Mixture; Taxonomic resolution increased
		<i>Eualus pusiolus</i> (Decapoda sp. - Shrimps) - Taxonomic resolution increased
		<i>Heteromysoides cf. cotti</i> (Mysidacea sp.) - Taxonomic resolution increased
		<i>Spio</i> 'species A' (' <i>Spio filicornis</i> ' - large) - Recording policy difference (taxonomy to be resolved)
		<i>Limatula subauriculata</i> (<i>Lima subauriculata</i>) - Nomenclature update
		<i>Tectura virginea</i> (<i>Tectura sp.</i>) - Taxonomic resolution increased

APPENDIX

LR22 individual summary reports for participating laboratories

	NMBQC Scheme Laboratory Reference Interim Results		
	Laboratory reference: LR22	Audit Completion Date: 13 October 2017	
	Date received: 25 September 2017 Laboratory Code: BI_2402	Auditor (lead): Tim Worsfold Auditor (review): David Hall	

Key: Blue text = no change, Green text = change

No.	Original Data (OD)	Edited Data (ED)	Comment	WoRMS List Reference (13/10/17)
1	Dipolydora santjosephi	Dipolydora saintjosephi	Spelling error	Dipolydora saintjosephi (Eliason, 1920)
2	Scoelelepis squamata	Scoelelepis squamata		Scoelelepis (Scoelelepis) squamata (O.F. Muller, 1806)
3	Scoelelepis bonnieri	Scoelelepis bonnieri		Scoelelepis bonnieri (Mesnil, 1896)
4	Spio decoratus	Spio decorata	Nomeclature update	Spio decorata Bobretzky, 1870
5	Spio filicornis	Spio symphyta	Taxonomic edit	Spio symphyta Meißner, Bick & Bastrop, 2011
6	Spio filicornis	Spio	Taxonomic resolution reduced; as <i>S. decorata</i> , but keel and colour atypical	Spio Fabricius, 1785
7	Scoelelepis squamata	Scoelelepis squamata		Scoelelepis (Scoelelepis) squamata (O.F. Muller, 1806)
8	Scoelelepis squamata	Scoelelepis bonnieri	Taxonomic edit	Scoelelepis bonnieri (Mesnil, 1896)
9	Laonice sarsi	Laonice	Taxonomic edit; not <i>L. sarsi</i>	Laonice Malmgren, 1867
10	Aphelochaeta sp	Aphelochaeta sp		Aphelochaeta Blake, 1991
11	Chaetozone "species D"	Chaetozone elakata	Nomeclature update	Chaetozone elakata Blake & Lavesque, 2017
12	Dipolydora flava	Dipolydora sp.	Taxonomic edit; not <i>D. flava</i> , possibly <i>D. saintjosephi</i> or undescribed sp.	Dipolydora Verrill, 1881
13	Pholoe pallida	Pholoe pallida		Pholoe pallida Chambers, 1985
14	Nebalia ?reboredae	Nebalia reboredae?	Uncertain, due to male specimen	Nebalia reboredae Moreira & Urgorri, 2009
15	Leucothoe ?richardii	Leucothoe procera	Taxonomic edit	Leucothoe procera Spence Bate, 1857
16	Nucula ?nucleus	Nucula nucleus	Taxonomic resolution increased	Nucula nucleus (Linnaeus, 1758)
17	Hypsicomus stichophthalmos	Hypsicomus stichophthalmos?	Taxonomic resolution reduced; uncertain	Hypsicomus stichophthalmos (Grube, 1863)
18	Anoborthus sp.	Ampharetidae	Taxonomic resolution reduced; probably not <i>Anoborthus</i> (spelling error in original data); possible undescribed sp.	Ampharetidae Malmgren, 1866
19	Malacoceros giardi	Malacoceros girardi	Spelling error	Malacoceros girardi Quatrefages, 1843
20	Polydora calcarea	Polydora calcarea		Polydora calcarea (Templeton, 1836)
21	Aurospio banyulensis	Aurospio banyulensis		Aurospio banyulensis (Laubier, 1966)
22	Euclymeninae " species A"	Euclymeninae " species A"		Euclymeninae Arwidsson, 1906
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-



NMBAC Scheme Laboratory Reference Interim Results



Laboratory reference: LR22

Audit Completion Date: 03 November 2017

Date received: 24 August 2017

Auditor (lead): Tim Worsfold/Chris Ashelby

Laboratory Code: BI_2403

Auditor (review): David Hall

Key: Blue text = no change, Green text = change

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (10/11/17)
1	Megamphopus cornutus	Megamphopus cornutus		Megamphopus cornutus Norman, 1869
2	Mysta picta	Mysta picta		Mysta picta (Quatrefages, 1866)
3	Goniadella bobrezkii	Goniada emerita	Taxonomic edit	Goniada emerita Audouin & H Milne Edwards, 1833
4	Nebalia bipes	Nebalia reboredae	Taxonomic edit	Nebalia reboredae Moreira & Urgorri, 2009
5	Diastylis cornuta	Diastylis rathkei	Taxonomic edit	Diastylis rathkei (Krøyer, 1841)
6	Ampelisca typica	Ampelisca typica		Ampelisca typica (Spence Bate, 1856)
7	Gammarus crinicornis	Gammarus crinicornis		Gammarus crinicornis Stock, 1966
8	Monoculodes carinatus	Kroyera carinata	Nomenclature update	Kroyera carinata Spence Bate, 1857
9	Macomangulus tenuis	Macomangulus tenuis		Macomangulus tenuis (da Costa, 1778)
10	Nephtys caeca	Nephtys caeca		Nephtys caeca (Fabricius, 1780)
11	Spio goniocephala	Spio goniocephala		Spio goniocephala Thulin, 1957
12	Spirobranchus triqueter	Spirobranchus triqueter		Spirobranchus triqueter (Linnaeus, 1758)
13	Harmothoe glabra	Harmothoe glabra		Harmothoe glabra (Malmgren, 1866)
14	Macropodia parva	Macropodia parva		Macropodia parva Van Noort & Adema, 1985
15	Phaxas pellucidus	Phaxas pellucidus		Phaxas pellucidus (Pennant, 1777)
16	Orbinia sertulata	Orbinia sertulata		Orbinia sertulata (Savigny, 1822)
17.1	Tryphosa nana	Tryphosa nana		Tryphosa nana (Krøyer, 1846)
17.2		Abludomelita obtusata	Mixture	Abludomelita obtusata (Montagu, 1813)
18	Ebalia tumefacta	Ebalia tumefacta		Ebalia tumefacta (Montagu, 1808)
19	Gibbula tumida	Gibbula tumida		Gibbula tumida (Montagu, 1803)
20	Microdeutopus gryllotalpa	Microdeutopus gryllotalpa		Microdeutopus gryllotalpa Costa, 1853
21	Polydora cornuta	Polydora sp. A	Taxonomic edit; undescribed species distinct from P. cornuta and with differing ecology	Polydora Bosc, 1802
22	Sphaerodorum gracilis	Sphaerodorum gracilis		Sphaerodorum gracilis (Rathke, 1843)
23	Pseudopolydora pulchra	Pseudopolydora pulchra		Pseudopolydora pulchra (Carazzi, 1893)
24	Anoplosyllis edentula	Syllides?	Taxonomic edit; tail fragment	Syllides Örsted, 1845
25	Ditrupe arietina	Spirorbinae	Taxonomic edit	Spirorbinae Chamberlin, 1919



NMBQC Scheme Laboratory Reference Interim Results



Laboratory reference: LR22

Audit Completion Date: 28 September 2017

Date received: 19 July 2017

Auditor (lead): Tim Worsfold

Laboratory Code: BI_2404

Auditor (review): David Hall

Key: Blue text = no change, Green text = change

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (28/09/17)
1	Myrianida quindecimdentata	Myrianida	Taxonomic resolution decreased; species identification features for Myrianida typically require fresh material	Myrianida Milne Edwards, 1845
2	Cumella (Cumella) pygmaea	Cumella pygmaea	Recording policy difference; APEM do not record subgenera	Cumella (Cumella) pygmaea G.O. Sars, 1865
3	Devonia perrieri	Devonia perrieri		Devonia perrieri (Malard, 1904)
4	Cumopsis goodsir	Cumopsis goodsir		Cumopsis goodsir (Van Beneden, 1861)
5	Malmgrenia mcintoshi	Malmgrenia mcintoshi		Malmgrenia mcintoshi (Tebble & Chambers, 1982)
6	Branchiomma bairdi	Branchiomma bombyx	Taxonomic edit	Branchiomma bombyx (Dalyell, 1853)
7	Polycirrus denticulatus	Polycirrus	Taxonomic resolution decreased; tails are typically required for Polycirrus, so APEM leave all to genus to avoid condition-dependant variation	Polycirrus Grube, 1850
8	Eurynome	Eurynome juv.	Recording policy difference; APEM record Eurynome as juvenile below 5mm	Eurynome Leach, 1814
9	Panousea africana	Chone	Taxonomic edit	Chone Krøyer, 1856
10	Parasabella	Serpulidae	Taxonomic edit	Serpulidae Rafinesque, 1815
11	Sphaerosyllis hystrix	Sphaerosyllis cf. taylori	Taxonomic edit	Sphaerosyllis taylori Perkins, 1981
12	Oxydromus pallidus	Oxydromus pallidus		Oxydromus pallidus Claparède, 1864
13	Mysta picta	Mysta picta		Mysta picta (Quatrefages, 1866)
14	Odontosyllis fulgurans	Myrianida	Taxonomic edit	Myrianida Milne Edwards, 1845
15	Pseudomystides limbata	Pseudomystides limbata		Pseudomystides limbata (Saint-Joseph, 1888)
16	Ampharete acutifrons	Ampharete cf. acutifrons	Recording policy difference; UK specimens that key out to A. acutifrons may not be this sp.	Ampharete acutifrons (Grube, 1860)
17	Myrianida	Myrianida		Myrianida Milne Edwards, 1845
18	Spio	Spio martinensis	Taxonomic resolution increased; APEM identify all Spio	Spio martinensis Mesnil, 1896
19	Laonice appelloefi	Spiophanes kroyeri	Taxonomic edit	Spiophanes kroyeri Grube, 1860
20	Paraonidae	Apistobranchnus tenuis	Taxonomic edit	Apistobranchnus tenuis Orrhage, 1962
21	Tubificoides benedii	Tubificoides benedii		Tubificoides benedii (d'Udekem, 1855)
22.1	Tubificoides pseudogaster	Tubificoides diazi agg.	Mixture (see below); Taxonomic edit; these worms were not the true T. pseudogaster; APEM now separate that from the remainder of the aggregate, now named as shown, though records of 'T. pseudogaster agg.' would be treated as recording policy differences	Tubificoides diazi Brinkhurst & Baker, 1979
22.2	Tubificoides pseudogaster	Tubificoides benedii	Taxonomic edit	Tubificoides benedii (d'Udekem, 1855)
23	Tubificoides amplivasatus	Tubificoides amplivasatus		Tubificoides amplivasatus (Erséus, 1975)
24	Aphelochaeta marioni	Aphelochaeta marioni sensu MARLIN	Recording policy difference; the species is not the true A. marioni but that which has traditionally been named as this sp.	Aphelochaeta marioni (Saint-Joseph, 1894)
25	Dodecaceria	Cirratulus caudatus	Taxonomic edit	Cirratulus caudatus Levinsen, 1893



NMBQC Scheme Laboratory Reference Interim Results



Laboratory reference: LR22

Audit Completion Date: 24 November 2017

Date received: 23/11/2017

Auditor (lead): Tim Worsfold

Laboratory Code: BI_2422

Auditor (review): David Hall

Key: Blue text = no change, Green text = change

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (24/11/17)
1	Buccinum undatum juvs.	Buccinum undatum (juvenile)		Buccinum undatum Linnaeus, 1758
2.1	Alvania sp.	Alvania punctura	Mixture; Taxonomic resolution increased	Alvania punctura (Montagu, 1803)
2.2		Alvania beanii	Taxonomic resolution increased	Alvania beanii (Hanley in Thorpe, 1844)
2.3		Onoba semicostata	Taxonomic edit	Onoba semicostata (Montagu, 1803)
3	Rissoa?	Pusillina inconspicua	Taxonomic edit	Pusillina inconspicua (Alder, 1844)
4	Hyalia vitrea	Rissoa parva (dead-collected)	Taxonomic edit	Rissoa parva (da Costa, 1778)
5	Eulimella sp.	Eulima bilineata	Taxonomic edit	Eulima bilineata Alder, 1848
6	Calliostoma granulatum	Clelandella miliaris	Taxonomic edit	Clelandella miliaris (Brocchi, 1814)
7.1	Gibbula cineraria?	Gibbula tumida	Taxonomic edit	Gibbula tumida (Montagu, 1803)
7.2		Jujubinus montagui	Taxonomic edit	Jujubinus montagui (Wood, 1828)
8	Gibbula umbilicus?	Gibbula cineraria	Taxonomic edit	Steromphala cineraria (Linnaeus, 1758)
9	Raphitoma linearis	Raphitoma linearis	Spelling error	Raphitoma linearis (Montagu, 1803)
10	Acanthochitonida crinitis	Acanthochitona crinita	Spelling error	Acanthochitona crinita (Pennant, 1777)
11	Galathowenia oculata	Galathowenia oculata		Galathowenia oculata (Zachs, 1923)
12	Galathowenia danielssenia	Myriochele danielsseni	Spelling error; Nomenclature update	Myriochele danielsseni Hansen, 1878
13	Eulalia mustela	Eulalia mustela		Eulalia mustela Pleijel, 1987
14	Kurtiella sp. (Large)	Polititapes rhomboides (juvenile)	Taxonomic edit	Polititapes rhomboides (Pennant, 1777)
15.1	Kurtiella sp. (small)	Kurtiella bidentata	Mixture; Taxonomic resolution increased	Kurtiella bidentata (Montagu, 1803)
15.2		Polititapes (juvenile)	Taxonomic edit	Polititapes Chiamenti, 1900
16	Decapoda sp. (Shrimps)	Eualus pusiolus	Taxonomic resolution increased	Eualus pusiolus (Krøyer, 1841)
17	Mysidacea sp.	Heteromysoides cf. cotti	Taxonomic resolution increased	Heteromysoides cotti (Calman, 1932)
18	Spio goniocephala	Spio armata	Taxonomic edit	Spio armata (Thulin, 1957)
19	Spio filicornis' (large)	Spio species A	Recording policy difference (taxonomy to be resolved)	Spio Fabricius, 1785
20.1	Spio decorata' (small)	Spio decorata	Mixture	Spio decorata Bobretzky, 1870
20.2		Spio symphyta	Taxonomic edit	Spio symphyta Meißner, Bick & Bastrop, 2011
21	Crisilla (Alvania) semistriata	Rissoa parva	Taxonomic edit	Rissoa parva (da Costa, 1778)
22	Pusillina sarsi?	Rissoa parva	Taxonomic edit	Rissoa parva (da Costa, 1778)
23	Lucinidae sp.	Arcopagia crassa	Taxonomic edit	Arcopagia crassa (Pennant, 1777)
24	Lima subauriculata	Limatula subauriculata	Nomenclature update	Limatula subauriculata (Montagu, 1808)
25	Tectura sp.	Tectura virginea	Taxonomic resolution increased	Tectura virginea (O. F. Müller, 1776)