



NMQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

Laboratory Reference Module Summary Report

Benthic Invertebrate Component - 2022/23

LR27

19 July 2023

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MODULE / EXERCISE DETAILS

Module:	Laboratory Reference (LR)
Exercises:	LR27
Data/Sample Request Circulated:	28th October 2022
Sample Submission Deadline:	23rd December 2022
Number of Subscribing Laboratories:	6
Number of LR Received:	4

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Summary

The Laboratory Reference module is a training module to encourage laboratories to build reference collections to improve identification consistency and to seek additional opinions for difficult specimens. The value of reference material in assisting identification cannot be over-emphasized; the creation and use of reference collections is viewed as best practice. Accordingly, the Laboratory Reference (LR) module of the Scheme was introduced in Scheme Year 3 (1996 / 1997). This module can help participating laboratories to assess their ability to identify material from their own samples. Laboratories are also able to use this exercise to obtain second opinion identifications for difficult or problematic taxa. The relatively high number of taxonomic edits and mismatches in the LR27 Laboratory Reference submissions highlights the usefulness of these exercises. This is especially so when laboratories are compiling voucher material for Reference Collections. There is great value in gaining a second opinion from experienced taxonomists on identifications of selected specimens. Range expansions and arrivals of alien taxa may bring new unfamiliar fauna into many areas. In addition, taxonomy is always changing with revisions of various groups, leading to nomenclatural changes or descriptions of new species. For example, the recent descriptions of two new amphipod species included here, *Cheirocratus pseudosundevalii* Gouillieux, 2019 and *Pontocratus moorei* Myers & Ashelby, 2022, highlight the need for everyday lab taxonomists to keep abreast of taxonomic updates.

Table 1. Summary of mis-identified taxa in the Laboratory Reference Module (LR27) (erroneous identifications in brackets).

LabCode	Taxonomic Edits	Major Taxonomic Group				
		Polychaeta	Oligochaeta	Crustacea	Mollusca	Other
BI_2905	5	<i>Ampharete octocirrata</i> (Terrebelidae sp)	-	<i>Ampelisca tenuicornis</i> in part (<i>Ampelisca typica</i>)	<i>Chamelea striatula</i> & <i>Lucinoma borealis</i> (<i>Dosina exoleta</i>)	-
		<i>Parapionosyllis</i> (<i>Brania arminii</i>)	-	-	-	-
		<i>Harmothoe extenuata</i> (<i>Harmothoe impar</i>)	-	-	-	-
BI_2908	7	<i>Mysta picta</i> (<i>Hypereteone foliosa</i>)	-	<i>Centraloecetes kroeyanus</i> (<i>Centraloecetes striatus</i>)	-	-
		<i>Tharyx</i> Species A (<i>Aphelochoeta</i> spp)	-	<i>Axius stiryinchus</i> juv. (<i>Callianassa subterranea</i>)	-	-
		<i>Eusyllis blomstrandii</i> (<i>Odontosyllis</i> spp)	-	<i>Diogenes</i> (<i>Anapagurus hyndmanni</i>)	-	-
		-	-	<i>Pontocrates moorei</i> (<i>Pontocrates arenarius</i>)	-	-
BI_2914	7	<i>Cirratulus</i> juv. (<i>Caulleriella</i>)	-	<i>Caprella tuberculata</i> (<i>Caprella septentrionalis</i> (spp))	<i>Simnia patula</i> (<i>Roxania utriculus</i>)	<i>Acanthocephala</i> (<i>Priapulius caudatus</i>)
		<i>Dipolydora saintjosephi</i> ? (<i>Dipolydora coeca</i>)	-	-	<i>Trivia</i> juv. (<i>Philine</i>)	-
		-	-	-	<i>Lamellaria latens</i> (Pleurobranchidae)	-
BI_2915	12	<i>Melinna elisabethae</i> ? (<i>Melinnopsis rostrata</i>)	-	<i>Akanthophoreus gracilis</i> (<i>Typhlotanais brevicornis</i>)	<i>Astarte borealis</i> (<i>Astarte sulcata</i>)	Nemertea (Actiniaria sp)
		<i>Harmothoe fernandi</i> (<i>Harmothoe mariannae</i>)	-	<i>Cheirocratus pseudosundevallii</i> (<i>Cheirocratus sundevallii</i>)	<i>Propebela bergensis</i> (<i>Curtitoma trevelliana</i>)	-
		<i>Tharyx</i> (<i>Kirkegaardia serrata</i>)	-	<i>Gammaropsis maculata</i> (<i>Gammaropsis melanops</i>)	-	-
		<i>Syllides</i> (<i>Eusyllis assimilis</i>)	-	-	-	-
		<i>Phyllodoce rosea</i> (<i>Phyllodoce longipes</i>)	-	-	-	-
		<i>Syllis fasciata</i> ? (<i>Trypanosyllis zebra</i>)	-	-	-	-
TOTAL	31	14	0	9	6	2
% Error	22	45	0	29	19	6

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 (LR27) (original identifications in brackets).

LabCode	Number of differences	Identification policy difference explanations (participant original identifications in brackets)
BI_2905	2	<i>Sigalion squamosus</i> juv. (<i>Sigalion squamosus</i>) - Recording policy difference
		<i>Capitella</i> (<i>Capitella capitata</i>) - Taxonomic resolution reduced
BI_2908	6	[Advisory Comment: <i>Loimia ramzega</i> (<i>Loimia ramzega</i>) - Now <i>L. gigantea</i> but not yet on WoRMS]
		<i>Monocorophium</i> (<i>Monocorophium uenoi</i>) - Taxonomic resolution reduced (no antenna 2)
		<i>Tharyx</i> Species A (<i>Tharyx</i> spp.) - Taxonomic resolution increased
		<i>Eurynome</i> juv. (<i>Eurynome</i> spp.) - Recording policy difference
		<i>Syllis licheri</i> ? (<i>Syllis</i> spp.) - Taxonomic resolution increased
		<i>Petricolaria pholadiformis</i> juv. (<i>Petricolaria pholadiformis</i>) - Recording policy difference
		<i>Polycirrus</i> (<i>Polycirrus</i> spp.) - Recording policy difference
BI_2914	4	<i>Aequipecten opercularis</i> juv. (<i>Aequipecten opercularis</i> (Pectinidae)) - Recording policy difference
		<i>Onoba semicostata</i> (Rissoidae) - Taxonomic resolution increased
		<i>Cirratulus</i> juv. (<i>Cirratulus cirratus</i>) - Taxonomic resolution reduced
		Fionoidea (Eubbranchidae) - Taxonomic resolution reduced
BI_2915	2	<i>Callipallene</i> (<i>Callipallene spectrum</i>) - Taxonomic resolution reduced
		<i>Polycirrus</i> (<i>Polycirrus plumosus</i>) - Taxonomic resolution reduced

APPENDIX

LR27 individual summary reports for participating laboratories



NMBAQC Scheme Laboratory Reference Interim Results

Laboratory reference: LR27

Audit Completion Date: 12 July 2023

Date received: 30 June 2023

Auditor (lead): Tim Worsfold

Laboratory Code: BL_2905

Auditor (review): Marta Kazubek

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

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (12/07/2023)
1	Micronereis variegata	Micronereis variegata		Micronereis variegata Claparède, 1863
2	Colomastix pussila	Colomastix pusilla	Spelling error	Colomastix pusilla Grube, 1861
3	Leucothoe spinicarpa	Leucothoe spinicarpa		Leucothoe spinicarpa (Abildgaard, 1789)
4	Ammothea hilgendorfi	Ammothea hilgendorfi		Ammothea hilgendorfi (Böhm, 1879)
5	Eurydice affinis	Eurydice affinis		Eurydice affinis Hansen, 1905
6	Sigalion squamosus	Sigalion squamosus juv.	Recording policy difference	Sigalion squamosus Delle Chiaje, 1830
7	Terrebelidae sp	Ampharete octocirrata	Taxonomic edit	Ampharete octocirrata (Sars, 1835)
8	Podoceras variegatas	Podocerus variegatus	Spelling error	Podocerus variegatus Leach, 1814
9	Marenzelleria viridis	Marenzelleria viridis		Marenzelleria viridis (Verrill, 1873)
10	Brania arminii	Parapionosyllis	Taxonomic edit	Parapionosyllis Fauvel, 1923
11	Maera grossimana	Maera grossimana		Maera grossimana (Montagu, 1808)
12	Amphiura chiajie	Amphiura chiajei	Spelling error	Amphiura chiajei Forbes, 1843
13.1	Ampelisca typica	Ampelisca typica	Mixture	Ampelisca typica (Spence Bate, 1857)
13.2		Ampelisca tenuicornis	Taxonomic edit	Ampelisca tenuicornis Liljeborg, 1856
14	Alitta virens	Alitta virens		Alitta virens (M. Sars, 1835)
15	Arenicola marina	Arenicola marina		Arenicola marina (Linnaeus, 1758)
16	Bathyporeia sarsi	Bathyporeia sarsi		Bathyporeia sarsi Watkin, 1938
17	Bodotria arenosa	Bodotria arenosa		Bodotria arenosa Goodsir, 1843
18.1	Capitella capitata	Capitella	Taxonomic resolution reduced	Capitella Blainville, 1828
18.2		Abra tenuis	Mixture	Abra tenuis (Montagu, 1803)
19.1	Dosina exoleta	Chamelea striatula	Mixture; Taxonomic edit	Chamelea striatula (da Costa, 1778)
19.2		Lucinoma borealis	Mixture; Taxonomic edit	Lucinoma borealis (Linnaeus, 1767)
20	Exogone verugera	Exogone verugera		Exogone verugera (Claparède, 1868)
21	Glycera tridactyla	Glycera tridactyla		Glycera tridactyla Schmarda, 1861
22	Harmothoe impar	Harmothoe extenuata	Taxonomic edit	Harmothoe extenuata (Grube, 1840)
23	Spiophanes kroyeri	Spiophanes kroyeri		Spiophanes kroyeri Grube, 1860
24	Nephtys caeca	Nephtys caeca		Nephtys caeca (Fabricius, 1780)
25	Nephtys kersivalensis	Nephtys kersivalensis		Nephtys kersivalensis McIntosh, 1908



NMBAQC Scheme Laboratory Reference Interim Results

Laboratory reference: LR27

Audit Completion Date: 01 March 2023

Date received: 23rd January 2023

Auditor (lead): Tim Worsfold

Laboratory Code: BI_2908

Auditor (review): Marta Kazubek, Chris Ashelby

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

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (02/03/23)
1	Centraloecetes striatus	Centraloecetes kroyeranus	Taxonomic edit	Centraloecetes kroyeranus (Spence Bate, 1857)
2	Megamphopus cornutus	Megamphopus cornutus		Megamphopus cornutus Norman, 1869
3	Caprella equilibra	Caprella equilibra		Caprella equilibra Say, 1818
4	Loimia ramzega	Loimia ramzega	Now <i>L. gigantea</i> but not yet on WoRMS	Loimia ramzega Lavesque, Bonifácio, Londoño-Mesa, Le Garrec & Grall, 2017
5	Macomangulus tenuis	Macomangulus tenuis		Macomangulus tenuis (da Costa, 1778)
6	Phaxas pellucidus	Phaxas pellucidus		Phaxas pellucidus (Pennant, 1777)
7	Monocorophium uenoi	Monocorophium	Taxonomic resolution reduced (no antenna 2)	Monocorophium Bousfield & Hoover, 1997
8	Eupolymnia nebulosa	Eupolymnia nebulosa		Eupolymnia nebulosa (Montagu, 1819)
9	Hypereteone foliosa	Mysta picta	Taxonomic edit	Mysta picta (Quatrefages, 1866)
10	Tharyx spp.	Tharyx Species A	Taxonomic resolution increased	Tharyx Webster & Benedict, 1887
11	Aphelochaeta spp.	Tharyx Species A	Taxonomic edit	Tharyx Webster & Benedict, 1887
12	Eurynome spp.	Eurynome juv.	Recording policy difference	Eurynome Leach, 1814
13	Lygdamis muratus	Lygdamis muratus		Lygdamis muratus (Allen, 1904)
14	Lanice conchilega	Lanice conchilega		Lanice conchilega (Pallas, 1766)
15	Callianassa subterranea	Axius stirensis juv.	Taxonomic edit	Axius stirensis Leach, 1816
16	Syllis spp.	Syllis licheri ?	Taxonomic resolution increased	Syllis licheri Ravara, San Martín & Moreira, 2004
17	Eualus cranchii	Eualus cranchii		Eualus cranchii (Leach, 1817)
18	Caprella linearis	Caprella linearis		Caprella linearis (Linnaeus, 1767)
19	Odontosyllis spp.	Eusyllis blomstrandii	Taxonomic edit	Eusyllis blomstrandii Malmgren, 1867
20	Pontocrates moorei	Pontocrates moorei		Pontocrates moorei Myers & Ashelby, 2022
21	Ditrupa arietina	Ditrupa arietina		Ditrupa arietina (O. F. Müller, 1776)
22	Petricolaria pholadiformis	Petricolaria pholadiformis juv.	Recording policy difference	Petricolaria pholadiformis (Lamarck, 1818)
23	Anapagurus hyndmanni	Diogenes	Taxonomic edit	Diogenes Dana, 1851
24	Polycirrus spp.	Polycirrus	Recording policy difference	Polycirrus Grube, 1850
25	Pontocrates arenarius	Pontocrates moorei	Taxonomic edit	Pontocrates moorei Myers & Ashelby, 2022



NMBAQC Scheme Laboratory Reference Interim Results

Laboratory reference: LR27

Audit Completion Date: 26 June 2023

Date received: 19 June 2023

Auditor (lead): Tim Worsfold

Laboratory Code: BI_2914

Auditor (review): Rachel Jacobson

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

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (26/06/2023)
1	Callipallene tiberii	Callipallene tiberii		Callipallene tiberii (Dohrn, 1881)
2	Cressa dubia	Cressa dubia		Cressa dubia (Spence Bate, 1857)
3	Stenopleustes nodifer	Stenopleustes nodifer		Stenopleustes nodifer (G.O. Sars, 1883)
4	Stenothoe marina	Stenothoe marina		Stenothoe marina (Spence Bate, 1857)
5	Modiolula phaseolina (Mytilidae)	Modiolula phaseolina		Modiolula phaseolina (R. A. Philippi, 1844)
6	Aequipecten opercularis (Pectinidae)	Aequipecten opercularis juv.	Recording policy difference	Aequipecten opercularis (Linnaeus, 1758)
7	Roxania utriculus	Simnia patula	Taxonomic edit	Simnia patula (Pennant, 1777)
8	Pododesmus patelliformis	Pododesmus patelliformis		Pododesmus patelliformis (Linnaeus, 1761)
9	Pandalina brevisrostris	Pandalina brevisrostris		Pandalina brevisrostris (Rathke, 1843)
10	Caprella tuberculata	Caprella tuberculata		Caprella tuberculata Guérin-Meneville, 1836
11	Caprella septentrionalis (spp)	Caprella tuberculata	Taxonomic edit	Caprella tuberculata Guérin-Meneville, 1836
12	Pseudoprotella phasma	Pseudoprotella phasma		Pseudoprotella phasma (Montagu, 1804)
13	Perkinsiana rubra	Perkinsiana rubra		Perkinsiana rubra (Langerhans, 1880)
14	Parasabella langerhansi	Parasabella langerhansi ?		Parasabella langerhansi (Knight-Jones, 1983)
15	Rissoidae	Onoba semicostata	Taxonomic resolution increased	Onoba semicostata (Montagu, 1803)
16	Cauleriella	Cirratulus juv.	Taxonomic edit	Cirratulus Lamarck, 1818
17	Cirratulus cirratus	Cirratulus juv.	Taxonomic resolution reduced	Cirratulus Lamarck, 1818
18	Dipolydora coeca	Dipolydora saintjosephi ?	Taxonomic edit	Dipolydora saintjosephi (Eliason, 1920)
19	Epitonium clathratulum	Epitonium clathratulum		Epitonium clathratulum (Kanmacher, 1798)
20	Philine	Trivia juv.	Taxonomic edit	Trivia Gray, 1837
21	Eubranchidae	Fionoidea	Taxonomic resolution reduced	Fionoidea Gray, 1857
22	Pleurobranchidae	Lamellaria latens	Taxonomic edit	Lamellaria latens (O. F. Müller, 1776)
23	Corambe obscura	Corambe obscura		Corambe obscura (A. E. Verrill, 1870)
24	Priapulul caudatus	Acanthocephala	Taxonomic edit	Acanthocephala
25	Hypereteone lighti	Hypereteone lighti		Hypereteone lighti (Hartman, 1936)



NMBAQC Scheme Laboratory Reference Interim Results

Laboratory reference: LR27

Audit Completion Date: 14 June 2023

Date received: 01 June 2023

Auditor (lead): Tim Worsfold

Laboratory Code: BI_2915

Auditor (review): Rachel Jacobson

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

No.	Original Data (OD) Identification	Edited Data (ED) Identification	Comment	WoRMS List Reference (14/06/2023)
1	Typhlotanais brevicornis	Akanthophoreus gracilis	Taxonomic edit	Akanthophoreus gracilis (Krøyer, 1842)
2	Melinnopsis rostrata	Melinna elisabethae ?	Taxonomic edit	Melinna elisabethae McIntosh, 1885
3	Euspira montagui	Euspira montagui		Euspira montagui (Forbes, 1838)
4	Callipallene spectrum	Callipallene	Taxonomic resolution reduced	Callipallene Flynn, 1929
5	Eclysippe vanelli	Eclysippe vanelli		Eclysippe vanelli (Fauvel, 1936)
6	Polititapes rhomboides	Polititapes rhomboides		Polititapes rhomboides (Pennant, 1777)
7	Yoldiella philippiana	Yoldiella philippiana		Yoldiella philippiana (Nyst, 1845)
8	Astarte sulcata	Astarte borealis	Taxonomic edit	Astarte borealis (Schumacher, 1817)
9	Harmothoe mariannae	Harmothoe fernandi	Taxonomic edit	Harmothoe fernandi Barnich & Fiege, 2009
10	Kirkegaardia serrata	Tharyx	Taxonomic edit	Tharyx Webster & Benedict, 1887
11	Eusyllis assimilis	Syllides	Taxonomic edit	Syllides Örsted, 1845
12	Phyllodoce longipes	Phyllodoce rosea	Taxonomic edit	Phyllodoce rosea (McIntosh, 1877)
13	Nereiphylla lutea	Nereiphylla lutea		Nereiphylla lutea (Malmgren, 1865)
14	Akanthophoreus gracilis	Akanthophoreus gracilis		Akanthophoreus gracilis (Krøyer, 1842)
15	Parvicardium pinnulatum	Parvicardium pinnulatum		Parvicardium pinnulatum (Conrad, 1831)
16	Curtitoma trevelliana	Propebela bergensis	Taxonomic edit	Propebela bergensis (Friele, 1886)
17	Euspira pallida	Euspira pallida		Euspira pallida (Broderip & G. B. Sowerby I, 1829)
18	Polycirrus plumosus	Polycirrus	Taxonomic resolution reduced	Polycirrus Grube, 1850
19	Cheirocratus sundevallii	Cheirocratus pseudosundevallii	Taxonomic edit	Cheirocratus pseudosundevallii Gouillieux, 2019
20	Gammaropsis melanops	Gammaropsis maculata	Taxonomic edit	Gammaropsis maculata (Johnston, 1828)
21	Rullierinereis faroensis	Rullierinereis faroensis		Rullierinereis faroensis Kirkegaard, 1998
22	Trypanosyllis zebra	Syllis fasciata ?	Taxonomic edit	Syllis fasciata Malmgren, 1867
23	Eusyllis lamelligera	Eusyllis lamelligera		Eusyllis lamelligera Marion & Bobretzky, 1875
24	Actiniaria sp.	Nemertea	Taxonomic edit; fragment	Nemertea
25	Edwardsiidae sp.	Edwardsiidae	Probably Edwardsia claparedii	Edwardsiidae Andres, 1881