



NMBAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

Laboratory Reference Module Summary Report

Benthic Invertebrate Component - 2025/26

LR30

11 September 2026

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MODULE / EXERCISE DETAILS

Module:	Laboratory Reference (LR)
Exercises:	LR30
Data/Sample Request Circulated:	31 st October 2025
Sample Submission Deadline:	8 th September 2026
Number of Subscribing Laboratories:	4
Number of LR Received:	2

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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 LR30 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.

Table 1. Summary of mis-identified taxa in the Laboratory Reference Module (LR30) (erroneous identifications in brackets).

LabCode	Taxonomic Edits	Major Taxonomic Group				
		Polychaeta	Oligochaeta	Crustacea	Mollusca	Other
BI_3201	7	<i>Spio symphyta</i> (<i>Spio filicornis</i>)	-	<i>Ampithoe rubricata</i> (<i>Pleonexes helleri</i>)	<i>Propebela rufa</i> (<i>Bela nebula</i>)	-
		<i>Syllides</i> (<i>Odontosyllis gibba</i>)	-	-	<i>Philinissima denticulata</i> (<i>Akera bullata</i>)	-
		<i>Lagis koreni</i> (<i>Cistenides granulata</i>)	-	-	<i>Ondina divisa</i> (<i>Ondina diaphana</i>)	-
BI_3217	8	Arenicolidae (Maldanidae)	-	<i>Microdeutopus versiculatus</i> (<i>Leptocheirus pilosus</i>)	<i>Lepidochitona cinerea</i> (<i>Boreochiton ruber</i>)	-
		<i>Dialychone</i> (<i>Amphiglena mediterranea</i>)	-	<i>Megamphopus cornutus</i> (<i>Gammaropsis lobata</i>): X2 (X3 correct)	<i>Rissoa parva</i> (<i>Cingula trifasciata</i>)	-
		-	-	-	<i>Akera bullata</i> (<i>Philine</i>)	-
		-	-	-	<i>Thyasira flexuosa</i> (<i>Thyasira polygona/biplicata</i>)	-
TOTAL	15	5	0	3	7	0
% Error	20	33	0	20	47	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 recording policy and taxonomic resolution changes in the Laboratory Reference Module (LR30) (original identifications in brackets).

LabCode	Number of differences	Identification policy difference explanations (participant original identifications in brackets)
BI_3201	4	<i>Petaloproctus</i> (<i>Petaloproctus borealis</i>) - Taxonomic resolution decreased
		<i>Prionospio cf. cirrifera</i> (<i>Prionospio cirrifera</i>) - Taxonomic resolution decreased
		<i>Ampharete lindstroemi</i> agg. (<i>Ampharete lindstroemi</i>) - Taxonomic resolution decreased
		<i>Golfingia vulgaris</i> (<i>Golfingia sp</i>) - Taxonomic resolution increased
BI_3217	10	<i>Leiochone</i> (Maldanidae) - Taxonomic resolution increased
		<i>Leptochiton asellus</i> (Polyplacophora) - Taxonomic resolution increased
		Amphiuridae juv. (<i>Amphipholis squamata</i>) - Taxonomic resolution decreased, as policy for smallest
		<i>Malmgrenia ljunmani</i> (<i>Malmgrenia</i>) - Taxonomic resolution increased
		<i>Aplysia</i> juv. (<i>Aplysia punctata</i>) - Taxonomic resolution decreased: juvenile
		Aoridae female (<i>Leptocheirus pilosus</i>) - Taxonomic resolution decrease, as policy
		<i>Syllis parapari</i> (<i>Syllis sp.</i>) - Taxonomic resolution increased
		<i>Terebellides</i> (<i>Terebellides shetlandica</i>) - Taxonomic resolution decreased
		<i>Nebalia reboredae</i> (<i>Nebalia</i>) - Taxonomic resolution increased
		<i>Cirrophorus branchiatus</i> (<i>Cirriphorus branchiatus</i>) - Spelling error

Taxonomic Comments

The Lab Ref 30 exercises revealed several taxa that are infrequently, or only recently recorded, in British seas, are recent non-native arrivals to European seas or possible new taxa that have not yet been fully described. These are highlighted below along with relevant references.

Annelida

Spio symphyta – problematic species complex; see Bick et al. (2010); Meißner et al. (2011).

Ampharete lindstroemi – likely species complex, identity of true *A. lindstroemi* uncertain (Parapar et al., 2017).

Eupolymnia lacazei – recently described (Lavesque et al., 2021).

Dialychone – difficult genus; see Giangrande et al. (2015).

Arthropoda

Nebalia reboredae – British species reviewed by McCormack et al. (2016).

Mollusca

Philinissima denticulata – recently redescribed (Ohnheiser et al., 2013), then removed from Philinidae (Chaban et al., 2023).

References

Bick, A., Otte, K & Meißner, K., 2010. A contribution to the taxonomy of *Spio* (Spionidae, Polychaeta, Annelida) occurring in the North and Baltic Seas, with a key to species recorded in this area. *Marine Biodiversity*, 40, 161-180.

Chaban, E.M., Ekimova, I., Lubin, P., Nikitenko, E. & Schepetov, D., 2023. Bizarre morphology obscures real affiliation: an integrative study of enigmatic cephalaspid Philine denticulata from Arctic waters reveals its unique phylogenetic position. *Diversity*, 15, 395, 1-18.

Giangrande, A., Licciano, M. & Wasson, B., 2015. *Guide to Identification of Sabellidae and Fabriciidae (Polychaeta) in north east Atlantic and Mediterranean waters*. NMBAQC 2014 taxonomic workshop, Dove Marine Laboratory, 91pp. (unpublished)

Lavesque, N., Daffe, G., Londoño-Mesa, M.H. & Hutchings, P., 2021. Revision of the French Terebellidae sensu stricto (Annelida, Terebelliformia), with descriptions of nine new species. *Zootaxa*, 5038(1), 1-63. <https://doi.org/10.11646/zootaxa.5038.1.1>

McCormack, E., Ashelby, C.W. & McGrath, D., 2016. A review of the Leptostraca of the British Isles with discussion of the genus *Sarsinebalia* Dahl. *Nauplius*, 24, e2016006, 1-19.

Meißner, K., Bick, A. & Bastrop, R., 2011. On the identity of *Spio filicornis* (O.F. Müller, 1776) - with the designation of a neotype, and the description of two new species from the North East Atlantic Ocean based on morphological and genetic studies. *Zootaxa*, 2815, 1-27.

Ohnheiser, L.T. & Malaquias, M.A.E., 2013. Systematic revision of the family Philinidae (Mollusca, Cephalaspidea) in the north-east Atlantic Ocean with emphasis on the Scandinavian Peninsula. *Zoological Journal of the Linnean Society*, 167, 273-326, with 33 figures.

Parapar, J., Kongsrud, J.A., Kongshavn, K. Alvestad, T., Aneiros, F. & Moreira, J., 2017. A new species of *Ampharete* (Annelida: Ampharetidae) from the NW Iberian Peninsula, with a synoptic table comparing NE Atlantic species of the genus. *Zoological Journal of the Linnean Society*, 20, 1-30.

APPENDIX

LR30 individual summary reports for participating laboratories



NMBAQC Scheme Laboratory Reference Interim Results

Laboratory reference: LR30

Audit Completion Date: 09 March 2026

Date received: 13 February 2026

Auditor (lead): Tim Worsfold

Laboratory Code: BI_3201

Auditor (review): Rachel Jacobson

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

No.	Original Data (OD)	Edited Data (ED)		
	Identification	Identification	Comment	WoRMS List Reference (11/03/26)
1	Aricidea cerrutii	Aricidea cerrutii		Aricidea (Acмира) cerrutii Laubier, 1966
2	Spio filicornis	Spio symphyta	Taxonomic edit	Spio symphyta Meißner, Bick & Bastrop, 2011
3	Bela nebula	Propebela rufa	Taxonomic edit	Propebela rufa (Montagu, 1803)
4	Ensis magnus	Ensis magnus		Ensis magnus Schumacher, 1817
5	Akera bullata	Philinissima denticulata	Taxonomic edit	Philinissima denticulata (J. Adams, 1800)
6	Aricidea antennata	Aricidea antennata		Aricidea (Strelzovia) antennata Annenkova, 1934
7	Ondina diaphana	Ondina divisa	Taxonomic edit	Ondina divisa (J. Adams, 1797)
8	Cylichna alba	Cylichna alba		Cylichna alba (T. Brown, 1827)
9	Thyasira obsoleta	Thyasira obsoleta		Thyasira obsoleta (A. E. Verrill & K. J. Bush, 1898)
10	Eupolymnia lacazei	Eupolymnia lacazei		Eupolymnia lacazei Lavesque, Daffe, Londoño-Mesa & Hutchings, 2021
11	Nicolea zostericola	Nicolea zostericola		Nicolea zostericola (Grube, 1860)
12	Petaloproctus borealis	Petaloproctus	Taxonomic resolution reduced	Petaloproctus Quatrefages, 1866
13	Pleonexes helleri	Ampithoe rubricata	Taxonomic edit	Ampithoe rubricata (Montagu, 1808)
14	Eualus pusiulus	Eualus pusiulus		Eualus pusiulus (Krøyer, 1841)
15	Leptochiton arcticus	Leptochiton arcticus		Leptochiton arcticus (G. O. Sars, 1878)
16	Thoracophelia flabellifera	Thoracophelia flabellifera		Thoracophelia flabellifera Ziegelmeier, 1955
17	Prionospio cirrifera	Prionospio cf. cirrifera	Taxonomic resolution reduced	Prionospio cirrifera Wirén, 1883
18	Ampharete lindstroemi	Ampharete lindstroemi agg.	Taxonomic resolution reduced	Ampharete lindstroemi Hessle, 1917
19	Phascolion strombus	Phascolion strombus		Phascolion (Phascolion) strombus strombus (Montagu, 1804)
20	Golfingia sp	Golfingia vulgaris	Taxonomic resolution increased	Golfingia (Golfingia) vulgaris vulgaris (de Blainville, 1827)
21	Odontosyllis gibba	Syllides	Taxonomic edit	Syllides Örsted, 1845
22	Spio symphyta	Spio symphyta		Spio symphyta Meißner, Bick & Bastrop, 2011
23	Liljeborgia kinahani	Liljeborgia kinahani		Liljeborgia (Liljeborgia) kinahani (Spence Bate & Westwood, 1862)
24	Scolecopsis tridentata	Scolecopsis tridentata		Scolecopsis tridentata (Southern, 1914)
25	Cistenides granulata	Lagis koreni	Taxonomic edit	Lagis koreni Malmgren, 1866



NMBAQC Scheme Laboratory Reference Interim Results

Laboratory reference: LR30

Audit Completion Date: 09 March 2026

Date received: 06 February 2026

Auditor (lead): Tim Worsfold

Laboratory Code: BI_3019

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 (11/03/26)
1	Maldanidae	Arenicolidae	Taxonomic edit	Arenicolidae Johnston, 1835
2	Maldanidae	Leiochone	Taxonomic resolution increased	Leiochone Grube, 1868
3	Polyplochophora	Leptochiton asellus	Taxonomic resolution increased	Leptochiton asellus (Gmelin, 1791)
4	Boreochiton ruber	Lepidochitona cinerea	Taxonomic edit	Lepidochitona cinerea (Linnaeus, 1767)
5	Cingula trifasciata	Rissoa parva	Taxonomic edit	Rissoa parva (da Costa, 1778)
6	Amphipholis squamata	Amphipholis squamata	would leave smallest as Amphiuridae juv.	Amphipholis squamata (Delle Chiaje, 1828)
7	Malmgrenia	Malmgrenia ljunmani	Taxonomic resolution increased	Malmgrenia ljunmani (Malmgren, 1867)
8	Procerastea halleziana	Procerastea halleziana		Procerastea halleziana Malaquin, 1893
9	Aplysia punctata	Aplysia juv.	Taxonomic resolution reduced	Aplysia Linnaeus, 1767
10	Aricidea minuta	Aricidea minuta		Aricidea (Aricidea) minuta Southward, 1956
11	Cochlodesma praetenue	Cochlodesma praetenue		Cochlodesma praetenue (Pulteney, 1799)
12	Leptocheirus pilosus	Microdeutopus versiculatus	Taxonomic edit; would leave as Aoridae female	Microdeutopus versiculatus (Spence Bate, 1857)
13	Amphiglena mediterranea	Dialychone	Taxonomic edit	Dialychone Claparède, 1868
14	Diaphana minuta	Diaphana minuta		Diaphana minuta T. Brown, 1827
15	Gammaropsis lobata	Gammaropsis lobata	X3; mixture	Gammaropsis lobata (Chevreux, 1920)
		Megamphopus cornutus	X2; Taxonomic edit	Megamphopus cornutus Norman, 1869
16	Philine sp.	Akera bullata	Taxonomic edit	Akera bullata O. F. Müller, 1776
17	Dosinia exoleta	Dosinia exoleta		Dosinia exoleta (Linnaeus, 1758)
18	Syllis sp.	Syllis parapari	Taxonomic resolution increased	Syllis parapari San Martín & López, 2000
19	Terebellides shetlandica	Terebellides	Taxonomic resolution reduced	Terebellides Sars, 1835
20	Thyasira polygona/ Thyasira biplicata	Thyasira flexuosa	Taxonomic edit	Thyasira flexuosa (Montagu, 1803)
21	Lepidochitona cinerea	Lepidochitona cinerea		Lepidochitona cinerea (Linnaeus, 1767)
22	Amphicorina	Amphicorina		Amphicorina Claparède, 1864
23	Nebalia	Nebalia reboredae	Taxonomic resolution increased	Nebalia reboredae Moreira & Ugorri, 2009
24	Cirriphorus branchiatus	Cirrophorus branchiatus	Spelling error	Cirrophorus branchiatus Ehlers, 1908
25	Apolochus spencebatei	Apolochus spencebatei		Apolochus spencebatei (Stebbing, 1876)