

Identification guides for the NMBAQC Scheme: 1. Scalibregmatidae (Polychaeta) from shallow seas around the British Isles

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The National Marine Biological Analytical Quality Control (NMBAQC) Scheme aims to ensure the quality of marine biological data and has had an emphasis on the processing of benthic macrofaunal samples, particularly for the U.K. National Marine Monitoring Programme (NMMP). The Scheme has highlighted differences in recording practice between laboratories (Worsfold & Hall, 2001) and differences in identification skills for various groups. One of the problems is the lack of a standard guide to marine fauna, such that each laboratory has a different literature collection, often including in-house identification guides.

As an attempt to help the situation, the NMBAQC Co-ordinating Committee has commissioned a literature database for distribution to its members and organises workshops on difficult taxa, for which identification keys are generally produced. In the past, such keys have remained unpublished and often difficult to obtain or even trace their origins. We now intend to publish workshop and in-house laboratory keys to help with data standardisation.

Identification keys are compilations of features found to be useful in the recognition of different taxa. Additional features may exist and some will always be subjective or difficult to find; no key is perfect. It is important to refer to original descriptions and reference material when in doubt. Keys are also subject to revision and it is hoped that this and possible future publications will stimulate corrections and new observations for future circulation. We would also like to request that taxonomists tell us about their new publications so that they can be included in the Scheme's literature database.

Scalibregmatidae

The Scalibregmatidae (or Scalibregmidae), sometimes called maggot worms (Rouse & Pleijel, 2000) are sedentary polychaete worms for which there is no single guide suitable for British species. Most have short bodies with biramous parapodia and no mobile appendages; some have branched gills. They are mostly found in marine subtidal sediments, though the epitokes have been reported swarming in the plankton (Clark, 1954). The Species Directory (Howson & Picton, 1997) lists five species in four genera for shallow water (<200m depth) around the British Isles. Four of these are included in Fauvel (1927) and three in Hartmann-Schroder (1996), which both include *Lipobranchius jeffreysii*, as an additional species; a new species, *Scalibregma celticum*, was described by Mackie (1991).

The following key is adapted from one made at Unicomarine in 2003, which was compiled from the literature detailed above, with the addition of observations made at Unicomarine and feedback through the NMBAQC Scheme. The literature covering each species is indicated by a list of single initials following the authority. Colours refer to alcohol preserved specimens.

1. Body with tapering abdomen; filiform anal cirri; prostomium T-shaped (may appear bilobed in juveniles).....2
 - Body short and broad with blunt ended abdomen; pygidium without elongated anal cirri; prostomium rounded or bilobed.....5
 2. Branchiae on anterior segments; abdomen with dorsal and ventral cirri, on flattened parapodia; body strongly expanded anteriorly; acicular chaetae absent or blunt spines on first two chaetigers; white or yellowish (*Scalibregma*).....3
 - No branchiae; no dorsal cirri; bluntly projecting posterior parapodia; body not strongly expanded anteriorly; strong acicular chaetae on up to three anterior chaetigers; usually white4
 3. Head with eyes, partly covered by hooded peristomium; short, fine blunt chaetae in parapodia of chaetigers 1 and 2; usually white or cream coloured..... *Scalibregma celticum* Mackie, 1991; M (but see below)
 - Head without eyes or hooded peristomium; no blunt chaetae in anterior parapodia; usually yellowish in colour
.....*Scalibregma inflatum* Rathke, 1843; F, H, M
 4. Eyes present; ventral cirri on posterior segments
.....*Sclerocheilus minutus* Grube, 1863; F
 - Without eyes; no ventral cirri
.....*Asclerocheilus intermedius* (Saint-Joseph, 1894); F, H
 5. 4 (to 6) pairs of branched branchiae on chaetigers 2 – 5; no anal papillae; usually yellowish in colour
.....*Polyphysia crassa* (Oersted, 1843); F (as *Eumenia*), H
 - Without branchiae; anus surrounded by short papillae; usually yellowish in colour
.....*Lipobranchius jeffreysi* (McIntosh, 1869); F, H
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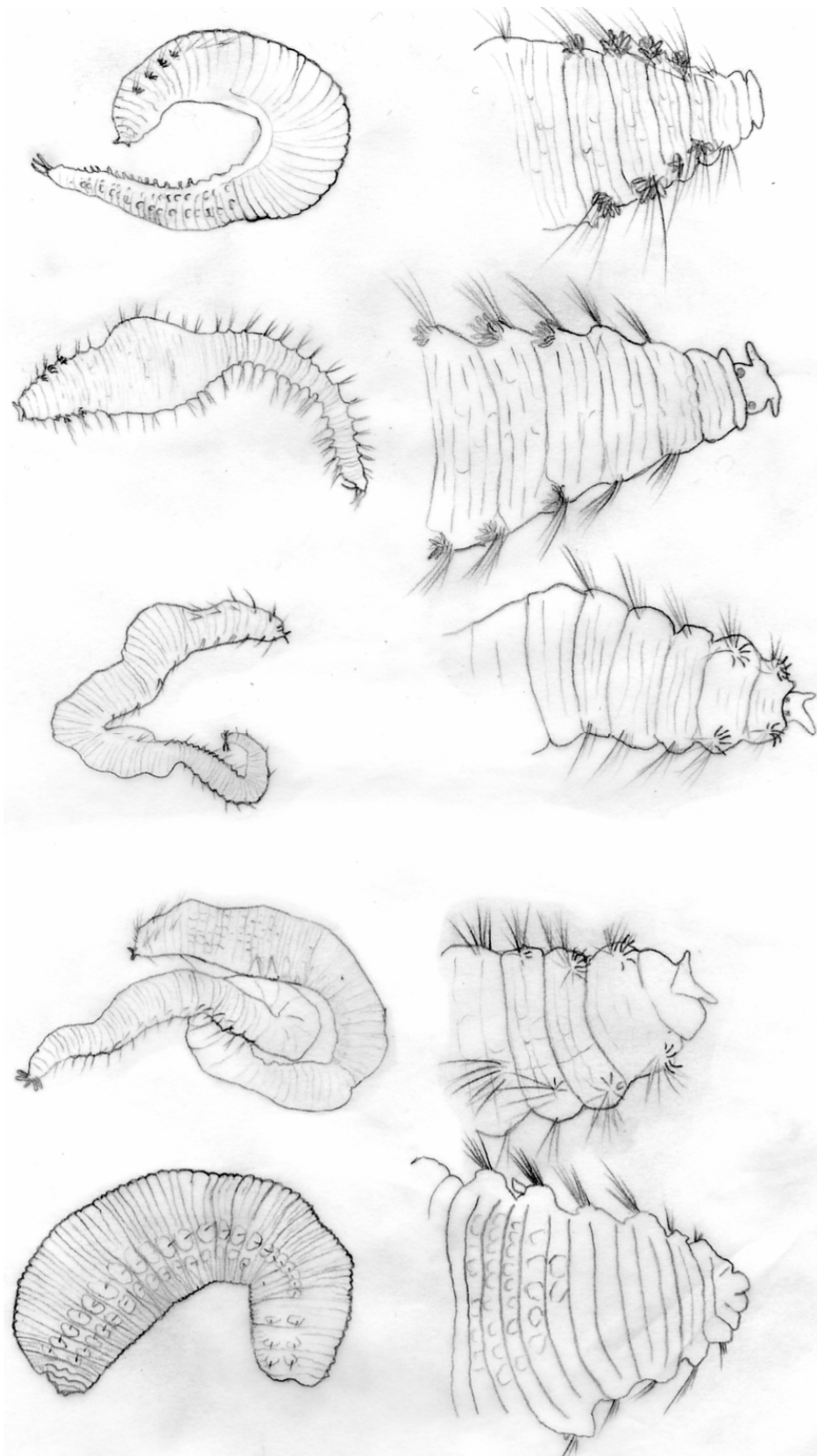


Fig. 1 British shallow-water scalibregmatids. Two views of each of (from top to bottom): *Scalibregma inflatum*, *S. celticum* (3-gill-pair form), *Sclerocheilus minutus*, *Asclerocheilus intermedius* and *Polyphysia crassa*; whole worms on left; dorsal head views on right.

The most well-known scalibregmatid is *Scalibregma inflatum*, which is common all around the coast, mainly in subtidal mud, where it may be dominant. *S. celticum* also appears to be ubiquitous but is found in coarser sediments, including gravels, where it is a small component of the fauna. The two other white scalibregmatids, *Sclerocheilus minutus* and *Asclerocheilus intermedius*, are often found together and with *S. celticum* in gravel, mixed sediment or hard substrata. *S. minutus* appears to be a southern species, absent from the east coast. *Polyphysia crassa* is found in relatively deep, stable muddy sediments and does not seem to be widespread. *Lipobranchius jeffreysi* is treated as a synonym of *P. crassa* in the Species Directory, as it may be the abbranchiate juvenile form (Eliason, 1920). However, a small, abbranchiate worm found to be morphologically distinct from *L. jeffreysi* was assigned to *P. crassa* by Clark & Dawson (1963), who argued that they were distinct. The taxa are retained as separate in the above key as the issue does not seem to have been resolved but it might be best to combine records for data analysis.

Taxonomic issues remain with the family and other species may be present around the British Isles. Other *Asclerocheilus* species have been suggested (Mackie *et al.*, 1995) and there are discrepancies between published and observed counts of chaetigers with stout chaetae. There may also be other *Scalibregma* species (Mackie, 1991). In particular, animals resembling *S. celticum* but with 3, rather than 4, pairs of gills from the Irish Sea (Mackie *et al.*, 1995) are similar to the American *S. stenocerum* (Bertelsen & Weston, 1980); they are also present in the English Channel, as figured above. The identification of deeper water scalibregmatids requires additional literature (*e.g.* Hartman & Fauchald, 1971; Persson & Pleijel, 2005). The European Register (Costello *et al.*, 2001) lists two additional species: *Pseudoscalibregma parvum* (Hansen, 1878) and *Sclerobregma branchiata* Hartman, 1965, both mapped for deep water in the Celtic Sea on the MarBEF website. The NEAT polychaete list (Hansson, 1998) also includes the genera *Axiokebuita* and *Hyboscolex* and the species *Scalibregma robusta* Zachs, 1925 and *Sclerocheilus deriugeni* Zachs, 1925, both Arctic. It is also possible that the opheliid genus *Travisia* may be transferred to the Scalibregmatidae (Persson & Pleijel, 2005).

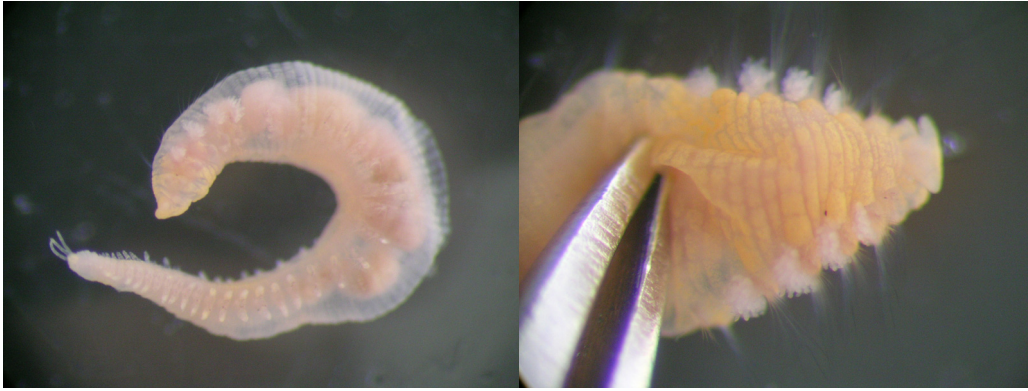
Most NMBAQC Scheme participants are able to recognise *Scalibregma inflatum*, which has been sent on the following five ring tests (numbers of participants in brackets): RT2(23), RT8(16), RT14(16), RT18(13) and RT20(15); only two discrepancies were recorded in total, both as *S. celticum*. *Asclerocheilus intermedius* has appeared in one ring test (RT22) and four discrepancies were recorded for 13 participants; one laboratory recorded each of the following: *Sclerocheilus minutus*, *Polyphysia crassa*, *Lipobranchius jeffreysi* and *Paradoneis eliasoni*. None of the other scalibregmatid species has yet been found in sufficient numbers for a ring test.

Acknowledgements

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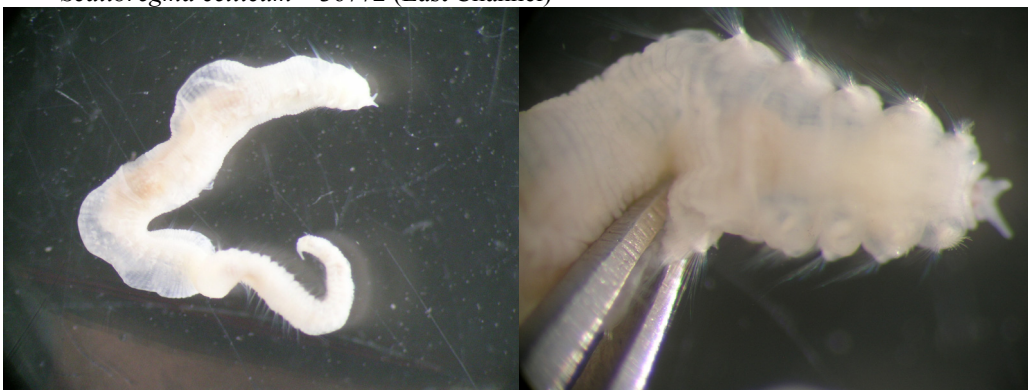
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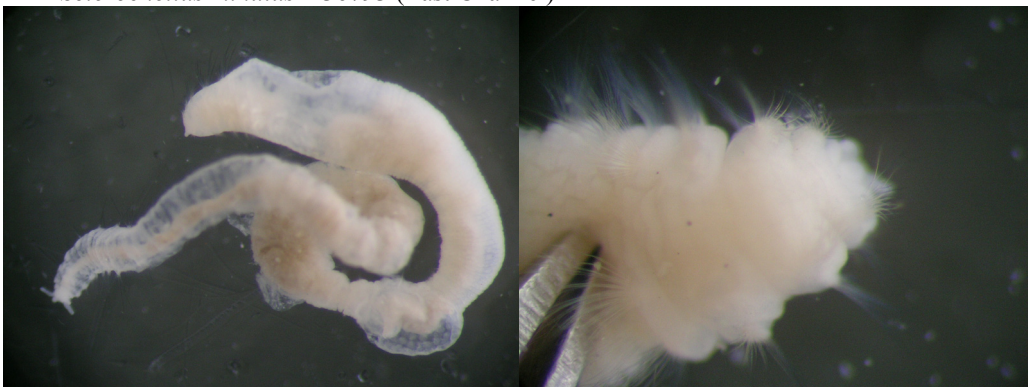
Scalibregma inflatum – 36445 (Torbay)



Scalibregma celticum – 36772 (East Channel)



Sclerocheilus minutus – 36793 (East Channel)



Asclerocheilus intermedius – 36793 (East Channel)



Polyphysia crassa – 9742 (Loch Spelve) & NMBAQCS MB04 (Oban)
