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Spio missing - see Bick et al 2010.

Keys to Spionidae (Annelida) species from shallow waters around the British Islands

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Running head. Spionidae from British Islands

Abstract

Identification keys are provided to 00 species of 20 genera of Spionidae reported from or likely to be found around the British Islands.

Key words. polychaete, taxonomy, morphology, key to species

Introduction

In waters around the British Islands there are approximately 80 known spionid species of at least 20 genera reported during long history of investigations in the region. The species total of this important family may however be further increased as additional taxonomic studies are conducted.

Taxonomic account

Spionidae Grube, 1850

Aonides Claparède, 1864

Aonides Claparède, 1864: 505; Pettibone 1963: 90; Foster 1971: 65–66; Blake & Kudenov 1978: 189; Imajima 1989: 214; Blake 1996: 100; Brito *et al.* 2006: 60.

Type species. *Aonides auricularis* Claparède, 1864 [=*Nerine oxycephala* Sars, 1862], by monotypy.

Remarks. *Aonides* Claparède, 1864 is a small group of spionid polychaetes currently comprising 9 species. The oldest and the type species of the group, *A. oxycephala* (Sars, 1862) originally described from Norway, has been reported worldwide and considered cosmopolitan. These reports, however, likely comprise a series of similar or sibling species.

Key to *Aonides* from around the British Islands

1 Up to 23 pairs of branchiae. Occipital antenna present. Hooks bidentate. Pygidium with up to 10 cirri ..... ***Aonides oxycephala*** (Sars, 1862)

– Up to 12 pairs of branchiae. Occipital antenna absent. Hooks quadridentate. Pygidium with 4 cirri ..... ***Aonides paucibranchiata*** Southern, 1914

Atherospio Mackie & Duff, 1986

Atherospio Mackie & Duff, 1986: 140. Meißner & Bick, 2005: 116.

Type species. *Atherospio disticha* Mackie & Duff, 1986. By monotypy.

Remarks. *Atherospio* Mackie & Duff, 1986 is a small group of spionid polychaetes currently comprising two species. Adults have up to seven pairs of branchiae beginning from chaetiger 7; branchiae fused to notopodial postchaetal lamellae. Pygidium with up to nine filiform cirri.

Key to *Atherospio* from around the British Islands

1 Occipital antenna present. Modified chaetae present in chaetiger 4 and 5. Hooks in neuropodia from chaetigers 13-15 ..... ***A. disticha*** Mackie & Duff, 1986

- Occipital antenna absent. Modified chaetae present in chaetiger 5 only. Hooks in neuropodia from chaetigers 15-16 ..... ***A. guillei*** (Laubier & Ramos, 1974)

Aurospio Maciolek, 1981

Aurospio Maciolek, 1981a: 229-230.

Type species. *Aurospio dibranchiata* Maciolek, 1981a. By monotypy.

Remarks. *Aurospio* Maciolek, 1981 is a small group of spionid polychaetes currently comprising six species. A member of the *Prionospio*-complex *sensu lato*, this genus was described for a deep-water Atlantic species *A. dibranchiata* Maciolek, 1981. Adults have apinnate branchiae (2 or 3 pairs) from chaetiger 3, not chaetiger 2, as most of *Prionospio*. *Prionospio ockelmanni* Pleijel, 1985 described from Öresund, Sweden, was considered a junior synonym of *Prionospio banyulensis* Laubier, 1966 by Sigvaldadóttir (1992). Later, Sigvaldadóttir (1998) transferred *P. banyulensis* to *Aurospio*. Paterson et al. (2016) described two new deep-water *Aurospio* species, one from the north-eastern Atlantic and another from the Mediterranean, and discussed the status of the genus.

Key to *Aurospio* from around the British Islands

1 Two pairs of branchiae on chaetigers 3 and 4; branchiae on chaetiger 3 longer than those on chaetiger 4. Hooks in neuropodia from chaetigers 9-11 .... ***A. dibranchiata*** Maciolek, 1981

- Three pairs of branchiae on chaetigers 3-5 almost equal in length. Hooks in neuropodia from chaetigers 12-13 ..... ***A. banyulensis*** (Laubier, 1966)

Dispio Hartman, 1951

Dispio Hartman, 1951: 86. Foster 1971a: 72. Blake & Kudenov 1978: 191.

Type species. *Dispio uncinata* Hartman, 1951. By monotypy.

Remarks. *Dispio* Hartman, 1951 is a small group of spionid polychaetes currently comprising nine species. *Dispio uncinata* Hartman, 1951 is the only *Dispio* species reported in grey literature from waters around the British Islands.

Laonice Malmgren, 1867

Laonice Malmgren, 1867: 200. Söderström 1920: 220. Foster 1971a: 69. Blake & Kudenov 1978: 204. Maciolek 2000: 533-536. Sikorski 2003a: 317; 2003b: 1179-1180; 2011: 201. Radashevsky & Lana 2009: 268.

Type species. *Nerine cirrata* M. Sars, 1851. By Malmgren, 1867: 200.

Remarks. *Laonice* Malmgren, 1867 is a large group of spionid polychaetes currently comprising 32 species. Adults usually have occipital antenna on the prostomium, large pair of median eyes, long U-shaped nuchal organs, branchiae from chaetiger 2 free from notopodial lamellae, only capillary chaetae in notopodia, hooded hooks in neuropodia with various number of upper teeth, and pygidium with various number of cirri.

Key to *Laonice* from around the British Islands

1 Prostomium not fused with peristomium at anterior margin or it is not visible in dorsal view 2

– Prostomium fused with peristomium at anterior margin, clearly visible in dorsal view 5

2(1) Lateral pouches always start between chaetigers 3 and 4 .... ***L. blakei*** Sikorski & Jirkov in Sikorski et al., 1998

– Lateral pouches start after chaetiger 4 3

3(2) Large complete dorsal transverse membranes connecting bases of notopodial postchaetal lamellae exist in post-branchial region ..... ***L. norgensis*** Sikorski, 2003

– No complete dorsal transverse membranes connecting bases of notopodial postchaetal lamellae 4

4(3) Body widened anteriorly on 12-15 chaetigers; capillary chaetae arranged in three to four rows on several of most anterior 15-17 chaetigers ..... ***L. appelloefi*** Söderström, 1920

– Body not widened anteriorly; capillary chaetae arranged in two rows on anterior chaetigers ..... ***L. sarsi*** Söderström, 1920

5(1) Branchiae on chaetiger 3 twice as short as notopodial post-lamellae or even shorter ..... ***L. shamrockensis*** Sikorski 2003

– Branchiae on chaetiger 3 longer (more or less similar to notopodial post-chaetal lamellae in length) 6

6(5) Complete dorsal transverse membranes connecting bases of notopodial post-chaetal lamellae in last branchiate and several following segments. Hooded hook with two apical teeth in lateral view ..... ***L. bahusiensis*** Söderström, 1920

– No complete dorsal transverse membrane connecting bases of notopodial post-chaetal lamellae in very last branchiate and several following segments. Hooded hook with one apical tooth in lateral view ..... ***L. cirrata*** (M. Sars, 1851)

Laubieriellus Maciolek, 1981

Laubieriellus Maciolek, 1981b: 829-831.

Type species. *Laubieriellus grasslei* Maciolek, 1981. By author's designation.

Remarks. *Laubieriellus* Maciolek, 1981 is a small group of spionid polychaetes currently comprising two species. *Laubieriellus salzi* (Laubier, 1970) is the only *Laubieriellus* species reported in grey literature from waters around the British Islands.

Malacoceros Quatrefages, 1843

Malacoceros Quatrefages, 1843: 8-10. Fauchald, 1977: 24. Blake & Kudenov, 1978: 195. Imajima, 1991a: 5. Sikorski, 1994a: 21-22. Hourdez et al., 2006: 594. Delgado-Blas & Díaz-Díaz, 2013: 182. Meißner & Götting, 2015: 382.

Type species. *Spio vulgaris* Johnston, 1827. By Pettibone 1963b: 98.

Remarks. *Malacoceros* Quatrefages, 1843 is apparently a polyphyletic group of spionid polychaetes currently comprising 15 species. The new combination *Spio jirkovi* (Sikorski, 1992) proposed by Sikorski (2013) is not accepted and the species was assigned back to *Malacoceros* by Meißner & Götting (2015).

Key to *Malacoceros* from around the British Islands

1 Hooks tridentate, with two upper teeth one above the other 2

– Hooks tridentate, with two upper teeth arranged side by side. Base of palps free, without sheath. Nuchal organs including a pair of U-shaped ciliary bands on sides of caruncle and short paired segmental metamers from chaetiger 2 and on some succeeding chaetigers. Hooks

tridentate, with two upper teeth arranged side by side, accompanied by only alternating capillaries and inferior sabre chaetae 3

2(1) Base of palps enveloped in a thin sheath. Nuchal organs including a pair of straight ciliary bands on sides of caruncle and a pair of entire serpentine ciliary bands on dorso-lateral sides near notopodial bases from front of chaetiger 1 almost to end of body. Hooks tridentate, with two upper teeth one above the other, accompanied by anterior row of capillaries, alternating capillaries between hooks, and inferior sabre chaetae. Pygidium with up to six pairs of cirri ..... ***M. girardi*** Quatrefages, 1843

– Branchiae and post-chaetal lamellae (notopodial and neuropodial) on chaetiger 1 with pointed ends; branchiae on chaetiger 1 completely free from notopodial post-chaetal lamellae ***M. jirkovi*** Sikorski, 1992

3(1) Body pigmentation absent. Segmental nuchal metamers single semi-oval ciliary bands. Hooks up to 10 per neuropodium. Pygidium with up to six pairs of cirri .... ***M. tetracerus*** (Schmarda, 1861)

– Dark pigmentation intense on anterior chaetigers (may be absent on small individuals). Segmental nuchal metamers double oval ciliary bands. Hooks up to 7 (usually 3-5) per neuropodium. Pygidium with up to six pairs of cirri .... ***M. vulgaris*** (Johnston, 1827)

Marenzelleria Mesnil, 1896

Marenzelleria Mesnil, 1896: 120. Sikorski & Buzhinskaya, 1998: 1111-1112. Sikorski & Bick, 2004: 255. Blank & Bastrop, 2009: 311-318.

Type species. *Marenzelleria wireni* Augener, 1913. By Augener, 1913: 265.

Remarks. *Marenzelleria* Mesnil, 1896 is a small group of spionid polychaetes currently comprising 5 species.

Key to *Marenzelleria* from around the British Islands

1 Notochaetae of chaetigers 1 and 2 include some very long and conspicuous capillaries. Branchiae absent from posterior half of body ..... ***M. viridis*** (Verrill, 1873)

– Notochaetae of chaetigers 1 and 2 include only 2 or 3 long, but inconspicuous, capillaries. Branchiae absent from posterior third of body at most . ***M. wireni*** Augener, 1913

Microspio Mesnil, 1896

Microspio Mesnil, 1896: 119, 174. Fauvel 1927: 42. Blake & Kudenov 1978: 231. Maciolek 1990: 1128. Blake 1996a: 160.

Spio (*Microspio*): Foster 1971a: 33.

Type species. *Microspio mecznikowiana* (Claparède, 1868). By Söderström, 1920: 247.
Remarks. *Microspio* Mesnil, 1896 is a small group of spionid polychaetes currently comprising 18 species.

Key to *Microspio* from around the British Islands

1 Hooded hooks in neuropodia from chaetiger 11 ***M. mecznikowiana*** (Claparède, 1868)
– Hooded hooks in neuropodia from chaetiger 9 ..... ***M. atlantica*** (Langerhans, 1881)

Prionospio Malmgren, 1867 *sensu lato*

Prionospio Malmgren, 1867: 201; Blake & Kudenov 1978: 211–212; Maciolek 1985: 329, 332; Wilson 1990: 245–246.
Type species. *Prionospio steenstrupi* Malmgren, 1867, by monotypy.
Remarks. *Prionospio* Malmgren, 1867 and closely related spionids constitute the most diverse and complicated group within the Spionidae. The group currently comprises more than one hundred species occurring worldwide from the intertidal to deep sea. Historically treated together and referred to as a generic *Prionospio* complex, for a long time the genus was not explicitly defined and no single character or group of characters was suggested to support its monophyly. Systematic treatments of the complex were overviewed by Foster (1971), Blake & Kudenov (1978), Maciolek (1985), Wilson (1990), Blake (1996), and Sigvaldadóttir (1998). Different generic breakdowns of the complex were suggested by various authors based on different suits of external morphological characteristics of adults and ideas about their weight for taxonomy. All those groupings were considered artificial, convenient for identification purposes rather than reflecting phylogenetic relationships.

Sigvaldadóttir *et al.* (1997) and Sigvaldadóttir (1998) provided the first attempts to elucidate phylogenetic relationships within the *Prionospio* complex with explicit cladistic methodology. The analyses resulted in essentially different hypotheses and, as it was concluded by Sigvaldadóttir (1998: 185) herself, were based on "a too small number of characters to obtain reliable estimates". Preliminary phylogenies of spioniform polychaetes shown by Blake & Arnofsky (1999: fig. 13C) suggested *Prionospio* complex as a monophyletic group comprising *Prionospio*, *Paraprionospio* Caullery, 1914, and *Streblospio* Webster, 1879 but no single character was noted for its support.

The generic analysis by Sigvaldadóttir (1998) suggested monophyly of the group containing *Prionospio* Malmgren, 1867 *sensu stricto*, *Minuspio* Foster, 1971, *Aquilaspio* Foster, 1971, and *Apoprionospio* Foster, 1969. More than 80 valid species of these taxa were referred to *Prionospio* Malmgren, 1867 *sensu lato* which further generic division based on branchial form was suggested to be avoided. Ultimately, Sigvaldadóttir (1998: 185)

concluded that future study of *Prionospio* "should endeavor to identifying natural groups rather than disputing Linnean ranking of taxa". Being in agreement with this conclusion, I suggest that in the absence of phylogenetic analyses of broader suits of diverse characters, it is useful to revise various groups of the *Prionospio* complex based at least on their superficial similarities, not necessarily following subgeneric categories established by Foster (1971) and subsequently modified by Maciolek (1985). Description of additional characters including internal anatomy and reproductive characteristics, and taxonomic revisions of certain groups of species with keys to their identification would clarify the diversity and composition of the complex in total. Good examples of those revisions are by Hylleberg & Nateewathana (1991) of the *Prionospio* with both pinnate and apinnate branchiae on chaetigers 2–5 from the Andaman Sea, Dagli & Çinar (2011) of the *Prionospio* with only apinnate branchiae, and Delgado-Blas (2014, 2015) of the *Prionospio* with five pairs of branchiae, and *Prionospio* with both pinnate and apinnate branchiae on chaetigers 2–5 from the Grand Caribbean Region.

The two characters in support of *Prionospio sensu lato* in the analysis by Sigvaldadóttir (1998), the neuropodial lamellae of segment 2 pointed ventrally, and neuropodial hooks starting at segments 14–19, appear rather ambiguous. Nevertheless, this grouping is used in the present study, the subgenera are dispensed, and corresponding species from around the Lizard Island Group are referred to *Prionospio sensu lato*.

Foster (1971) clarified the terms "dorsal crest" and "dorsal fold" with regard to structures between notopodial postchaetal lamellae on the dorsal side of segments, and Maciolek (1985) clarified the terms used to describe branchial appearance (pinnate vs. apinnate) and shape of the pinnae (pinnules; digitiform vs. plate-like) on their surface. These terms are used in the present study.

Sigvaldadóttir & Mackie (1993) highlighted the importance of investigating size-related variability of *Prionospio* worms, and this importance is stressed again in the present study. Many crucial taxonomic characters, such as dentition of hooks, arrangement of hooks, sabre chaetae and branchiae, and the presence of pinnae on branchiae, are shown to modify during individual ontogenesis. Correct identification of certain stages is therefore problematic or even impossible without knowledge of the entire transformation series.

Key to *Prionospio* from around the British Islands

1 Branchiae all apinnate **2**

– Branchiae apinnate and pinnate **3**

2(1) Neuropodial postchaetal lamellae of chaetiger 2 ventrally prolonged; branchiae 4 to 7 pairs; sabre chaetae from chaetiger 9 ..... ***P. cirrifera*** Wirén, 1883

– Neuropodial postchaetal lamellae of chaetiger 2 not ventrally prolonged; branchiae 6 to 13 pairs; sabre chaetae from chaetiger 12-17 ..... ***P. multibranchiata*** E. Berkeley, 1927

pinnate = plumose

3(1) Branchiae on chaetigers 2 and 5 pinnate, on chaetigers 3 and 4 apinnate **4**

– Pinnate/apinnate branchiae in other combination **6**

4(3) Median eyes very large. Pinnate branchiae of similar length. High dorsal crest present on chaetiger 7 ..... ***P. fallax*** Söderström, 1920

– Median eyes similar size as lateral eyes **5**

5(4) Branchiae on chaetiger 2 much longer than on successive chaetigers. Dorsal crest absent on chaetiger 7. Sabre chaetae in neuropodia after chaetiger 13. Hooks without inner subdistal hood ***P. dubia*** Maciolek, 1985

– Branchiae on chaetiger 5 longest. Sabre chaetae in neuropodia before chaetiger 13. Hooks with inner subdistal hood ..... ***P. steenstrupi*** Malmgren, 1867

6(3) Three pairs of pinnate branchiae on chaetigers 2, 3 and 5 ..... ***P. plumosa*** (M. Sars, 1872)

– One pair of pinnate branchiae **7**

7(6) Branchiae pinnate on chaetiger 2, apinnate on chaetigers 3-5 ..... ***P. ehlersi*** Fauvel, 1928

– Branchiae pinnate on chaetiger 5, apinnate on chaetigers 2-4 ..... ***P. caspersi*** Laubier, 1965

Pygospio Claparède, 1863

Pygospio Claparède, 1863: 37. Fauvel, 1927: 45. Uschakov 1955: 268. Foster, 1971a: 28-29. Fauchald, 1977b: 25. Blake, 1996a: 164. Hartmann-Schröder, 1996: 330.

Type species. *Pygospio elegans* Claparède, 1863. By monotypy.

Remarks. *Pygospio* Claparède, 1863 is a small group of spionid polychaetes currently comprising two species. Adults have branchiae on middle chaetigers, only capillary chaetae in notopodia, bidentate hooded hooks in neuropodia, and pygidium with four conical cirri.

Pygospio elegans Claparède, 1863 is the only *Pygospio* species reported from waters around the British Islands. Adults are unique among spionids in having spoon-like hooded hooks in anterior neuropodia.

Scolelepis Blainville, 1828

Scolelepis Blainville, 1828: 492. Foster, 1971a: 58-59. Blake & Kudenov, 1978: 195. Maciolek, 1987: 17.

Type species. *Lumbricus squamatus* Müller, 1806. By monotypy.

Remarks. *Scolelepis* Blainville, 1828 is one of the largest and most problematic groups of spionid polychaetes currently comprising about 80 species.

Key to *Scolelepis* from around the British Islands

1 Neuropodial postchaetal lamellae entire throughout **2**

– Neuropodial postchaetal lamellae indented to bilobed on middle and posterior chaetigers **4**

2(1) Branchiae posteriorly swollen distally ("flag-like"); neuropodial hooks from ca. chaetiger 18, with four teeth visible in frontal view ..... ***S. korsuni*** Sikorski, 1994

– Branchiae posteriorly not swollen distally; neuropodial hooks with less than four teeth **3**

3(2) Prostomium blunt; neuropodial hooks bidentate from chaetiger 20 - 45; anterior branchiae fused to the notopodial pre-chaetal lamellae by webbing; no pigment; occipital antenna not raised ..... ***S. cantabra*** (Rioja, 1918)

– Prostomium pointed; neuropodial hooks tridentate from chaetiger 14 - 16; branchiae fused to notopodial pre-chaetal lamellae; dark pigment anteriorly; small raised occipital antenna ..... ***S. tridentata*** (Southern, 1914)

4(1) Prostomium blunt; anterior branchiae completely fused to the notopodial post-chaetal lamellae; large raised occipital tentacle; hooks unidentate ..... ***S. foliosa*** (Audouin & Milne-Edwards, 1833)

– Prostomium pointed; anterior branchiae only partially fused to the notopodial post-chaetal lamellae; no occipital tentacle, attached flattened caruncle may be raised; hooks unidentate or bidentate **5**

5(4) Anterior notopodial post-chaetal lamellae not equal in length to branchiae. Hooks bidentate, from ca. chaetiger 40 in neuropodia (60 in notopodia). Prostomium posteriorly fused to dorsum and shorter than long thin prostomium ..... ***S. squamata*** (Müller, 1806)

– Anterior notopodial post-chaetal lamellae equal or sub-equal, in form and length, to branchiae. Hooks not normally bidentate. Prostomium posteriorly long and thin, free not fused to dorsum, longer than triangular prostomium **6**

6(5) Hooks unidentate (posterior bidentate in juveniles), from ca. chaetiger 31 in neuropodia (ca. 55 in notopodia) ..... ***S. bonnieri*** (Mesnil, 1896)

– Hooks tridentate (no specimens confirmed) ..... ***S. mesnili*** (Bellan & Lagardère, 1971)

Spio Fabricius, 1785

Spio Fabricius, 1785: 264. Cuvier 1817a: 525. Savigny 1822: 45. Fauvel 1927: 43. Blake & Kudenov 1978: 226-227. Maciolek 1990: 1111. Blake 1996a: 157.

Type species. *Nereis filicornis* O.F. Müller, 1776. By Söderström, 1920: 245.

Remarks. *Spio* Fabricius, 1785 is one of the largest and most problematic groups of spionid polychaetes currently comprising about 35 species.

Key to *Spio* from around the British Islands

Under construction

1 AA **2**

– AA **3**

***Spiophanes* Grube, 1860**

Spiophanes Grube, 1860: 88. Pettibone, 1962: 77. Foster, 1971: 40. Blake & Kudenov, 1978: 224. Imajima, 1991b: 115. Maciolek, 2000: 539-540. Meißner & Hutchings, 2003: 118-120. Meißner, 2005: 6. Meißner & Blank, 2009: 6-7.

Type species. *Spiophanes kroyeri* Grube, 1860. By monotypy.

Remarks. *Spiophanes* Grube, 1860 is one of the largest groups of spionid polychaetes currently comprising about 31 species.

Key to *Spiophanes* from around the British Islands

1 Prostomium anteriorly T-shaped, with fronto-lateral horns. Nuchal organs metameric, comprising first pair of metamers oblique ciliary bands extending from posterior part of prostomium to middle of chaetiger 3, and a series of short metamers on succeeding chaetigers ..... ***S. bombyx*** (Claparède, 1870)

– Prostomium without fronto-lateral horns. Nuchal organs entire, not metameric **2**

2 Prostomium anteriorly truncate. Occipital antenna present on prostomium. Nuchal organs two parallel ciliary bands extending to chaetigers 14-16 ..... ***S. kroyeri*** Grube, 1860

– Prostomium anteriorly rounded. Occipital antenna absent on prostomium. Nuchal organs U-shaped, to end of chaetiger 3 ..... ***S. wigleyi*** Pettibone, 1962

***Streblospio* Webster, 1879**

Streblospio Webster, 1879: 120. Foster 1971a: 112. Rice & Levin 1998: 694.

Type species. *Streblospio benedicti* Webster, 1879. By monotypy.

Remarks. *Streblospio* Webster, 1879 is a small group of spionid polychaetes currently comprising 3 species.

Key to *Streblospio* from around the British Islands

1 Hooks in neuropodia from chaetigers 8-10. No epithelial brooding structures in females – gametes released directly into water ..... ***S. shrubsolii*** (Buchanan, 1890)

– Hooks in neuropodia from chaetiger 7 ..... **2**

2 Oocytes from chaetigers 9-11; sperm from chaetigers 8-9. Females brooding larvae in epithelial pouches on dorsal side from chaetigers 18-23 to chaetigers 23-38 ..... ***S. benedicti*** Webster, 1879

– Oocytes from chaetigers 8; sperm from chaetigers 7. Females with dorso-lateral digitiform epithelial extensions from chaetigers 19-21 to chaetigers 26-32 ..... ***S. gynobranchiata*** Rice & Levin, 1998

Polydorini Benham, 1896

Polydoridae Benham, 1896: 323.

Polydorini Benham, 1896. Radashevsky, 2012: 13.

Type genus. *Polydora cornuta* Bosc, 1802.

Remarks. Benham (1896) distinguished the family **Polydorinae** to encompass spionids with heavy spines in chaetiger 5. The family rank was not accepted by the following authors and ***Polydora*** Bosc, 1802 was for a long time in use to encompass those spionids. *Pseudopolydora* Czerniavsky, 1881, *Boccardia* Carazzi, 1893 and *Carazzia* Mesnil, 1896 established to distinguish different groups among polydorins, were mainly used as subgenera until Blake & Kudenov (1978) revised the group and assigned the *Polydora* species to five genera of the ***Polydora* complex**: *Boccardia* Carazzi, 1893, *Boccardiella* Blake & Kudenov, 1978, *Carazziella* Blake & Kudenov, 1978, *Polydora* Bosc, 1802, *Pseudopolydora* Czerniavsky, 1881 and *Tripolydora* Woodwick, 1964. Following Benham's (1896) idea, Radashevsky (2012) established a **tribe Polydorini** Benham, 1896 for the spionids with heavy falcate spines in the posterior row of notochaetae on chaetiger 5.

Boccardia Carazzi, 1893

Polydora (*Boccardia*) Carazzi, 1893: 15. Fauvel, 1927: 48. Hartmann-Schröder, 1971: 314.

Boccardia: Chamberlin, 1919a: 369. Blake & Woodwick, 1971: 31. Blake & Kudenov 1978: 235. Light, 1978: 133-134. Blake, 1996a: 203.

Type species. *Boccardia polybranchia* (Haswell, 1885). By monotypy.

Remarks. *Boccardia* Carazzi, 1893 is a group of polydorin spionids currently comprising 25 species. Adults of *Boccardia* share the presence of two kinds of heavy modified spines (simple falcate spines + heavy spines with expanded distal end bearing bristles on top) in notopodia of chaetiger 5, and branchiae beginning from chaetiger 2 (chaetiger 7 in small juveniles).

Key to *Boccardia* from around the British Islands

1 Caruncle to end of chaetiger 1. Mid-dorsal longitudinal ridge present from chaetiger 5 to middle of chaetiger 8 ..... ***B. pseudonatrix*** Day, 1961

- Caruncle to end of chaetiger 3. Mid-dorsal ridge absent on anterior chaetigers .....
..... ***B. proboscidea*** Hartman, 1940
INVASIVE SPECIES; NOW IN KENT

Boccardiella Blake & Kudenov, 1978

Boccardiella Blake & Kudenov, 1978: 264–265. Blake, 1996a: 202.
Polydora (*Boccardiella*): Hartmann-Schröder 1996: 320.
Type species. *Polydora hamata* Webster, 1879. By Blake & Kudenov 1978: 274.
Remarks. *Boccardiella* Blake & Kudenov, 1978 is a small group of polydorin spionids currently comprising 4 species. Adults have one kind of heavy modified spines (simple falcate spines) in notopodia of chaetiger 5, and branchiae beginning from chaetiger 2 (chaetiger 7 in small juveniles).

Boccardiella ligerica (Ferronnière, 1898) is the only *Boccardiella* species reported from waters around the British Islands.

Dipolydora Verrill, 1881

Dipolydora Verrill, 1881: 320; Blake 1996: 181, resurrected and redefined.
Type species. *Polydora concharum* Verrill, 1879. Designated by Verrill (1881), by monotypy.
Remarks. *Dipolydora* Verrill, 1881 currently comprises about forty species of polydorin spionids that occupy diverse habitats from the intertidal to deep water. The name *Dipolydora* was not in use after its designation by Verrill (1881) until Blake (1996) resurrected it and assigned to it a series of *Polydora* Bosc, 1802 species that, in contrast to species of *Polydora,* had notochaetae on chaetiger 1 and lacked a constriction or manubrium on the shaft of the hooded hooks.

Key to *Dipolydora* from around the British Islands

1 Branchiae from chaetiger 7, fused to notopodial postchaetal lamellae **2**
– Branchiae after chaetiger 7, free from notopodial postchaetal lamellae **4**
2(1) Boring into shells, corals and coralline algae. Falcate spines of chaetiger 5 each with large lateral tooth and an apical transverse flange on the convex side of the main fang. Pygidium cup-shaped to bilobed ..... ***D. armata*** (Langerhans, 1880)
– Inhabiting tubes on soft sediments. Falcate spines of chaetiger 5 without apical transverse flange; lateral tooth present or absent. Pygidium with four lobes **3**
3(2) Falcate spines of chaetiger 5 distally bifurcated, each with two short massive unequal teeth and fine bristles between them ..... ***D. quadrilobata*** (Jacobi, 1883)

– Falcate spines of chaetiger 5 each with a long pointed main fang bearing dense bristles on the convex side ..... ***D. caulleryi*** (Mesnil, 1897)

4(1) Tight packets of needle-like spines present in notopodia from chaetigers 8-9 in addition to capillaries ..... ***D. flava*** (Claparède, 1870)

– Packets of needle-like spines absent in notopodia 5

5(4) Up to 4 awl-like spines present in posterior notopodia in addition to capillaries ..... ***D. saintjosephi*** (Eliason, 1920)

– Awl-like spines absent in notopodia ..... ***D. coeca*** (Örsted, 1843)

Polydora Bosc, 1802

Polydora Bosc, 1802: 150. Savigny 1822: 45. Blake & Kudenov 1978: 245–247. Blake 1996: 167.

Polydora (*Polydora*): Fauvel 1927: 48. Hartmann-Schröder 1971: 304; 1996: 310.

Type species. *Polydora cornuta* Bosc, 1802. By monotypy.

Remarks. The name *Polydora* Bosc, 1802 was for a long time in use to encompass all spionids with heavy spines in chaetiger 5. *Pseudopolydora* Czerniavsky, 1881, *Boccardia* Carazzi, 1893 and *Carazzia* Mesnil, 1896 established to distinguish different groups among polydorins, were mainly used as subgenera until Blake & Kudenov (1978) revised the group and assigned the *Polydora* species to five genera of the *Polydora* complex: *Boccardia* Carazzi, 1893, *Boccardiella* Blake & Kudenov, 1978, *Carazziella* Blake & Kudenov, 1978, *Polydora* Bosc, 1802, *Pseudopolydora* Czerniavsky, 1881 and *Tripolydora* Woodwick, 1964. *Polydora* currently comprises about sixty species of polydorin spionids that occupy diverse habitats from the intertidal to deep water.

Key to *Polydora* from around the British Islands

1 Occipital antenna present on prostomium 2

– Occipital antenna absent on prostomium 3

2(1) Inhabits silty tubes. Chaetiger 5 without dorsal superior and ventral capillaries. Posterior notopodia with only capillary chaetae ..... ***P. cornuta*** Bosc, 1802

– Bores into shells. Chaetiger 5 with dorsal superior and ventral capillaries. Posterior notopodia with heavy recurved spines in addition to capillary chaetae ..... ***P. hoplura*** Claparède, 1868

3(1) Posterior notopodia with needle-like spines in addition to capillary chaetae; spines loosely held in a tuft and greatly protruding out of body wall ..... ***P. hermaphroditica*** Hannerz, 1956

– Posterior notopodia with only capillary chaetae 4

4(3) Bores into shells and coralline algae ..... ***P. calcarea*** (Templeton, 1836)

– Inhabits silty tubes ..... ***P. ciliata*** (Johnston, 1838)

Pseudopolydora Czerniavsky, 1881

Pseudopolydora Czerniavsky, 1881: 362; Blake & Kudenov, 1978: 267; Blake, 1996: 202.
Polydora (*Carazzia*): Fauvel, 1927: 48.
Polydora (*Pseudopolydora*): Hartmann-Schröder, 1971: 317; 1996: 322.

Type species. *Polydora antennata* Claparède, 1868, by monotypy.

Remarks. *Pseudopolydora* Czerniavsky, 1881 currently comprises 18 species of polydorin spionids that usually inhabit tubes on the intertidal and in shallow waters in estuarine environments.

Key to *Pseudopolydora* from around the British Islands

1 Prostomium narrow and rounded anteriorly. Occipital antenna absent on prostomium . ***P.* aff. *paucibranchiata*** (Okuda, 1937)

– Prostomium bilobed anteriorly. Occipital antenna present on prostomium **2**

2 Prostomium weakly incised. Caruncle to end of chaetiger 1. Small individuals without pigmentation; large individuals with black pigment diffused on dorso-lateral sides of prostomium, peristomium and 5-7 anterior chaetigers. Up to 50 narrow transverse black bands regularly arranged on each palp, fewer bands in small individuals. Pygidium large thin disc to cup with wide dorsal gap ..... ***P. pulchra*** (Carazzi, 1893)

– Prostomium deeply incised. Caruncle to end of chaetiger 6. Pigmentation absent. Pygidium with two fleshy lateral lobes separated by distinct dorsal and ventral incisions .... ***P. antennata*** (Claparède, 1868)