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A CHECKLIST OF THE SIPHONOSTOMATOIDA (CRUSTACEA: COPEPODA) OF IRELAND

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The Siphonostomatoida constitutes an Order of the Subclass Copepoda. The animals occur in marine, brackish, and freshwater habitats, and are usually found in some sort of association with other animals. They come in a variety of shapes and sizes, but they are united in having similar mouthparts. These structures are modified and formed into a sucking tube or siphon, hence the name.

Ecologically, they can be divided conveniently into two groups; the invertebrate associates, and the fish parasites. The invertebrate associates range from relatively unmodified cyclopiform species which probably have a loose association with their hosts, to much-modified and apparently degenerate forms which are undoubted parasites. They are found with a variety of invertebrate groups, including sponges, coelenterates, polychaetes, echinoderms and tunicates. Some, the nicothoids, are egg-mimics and live in the brood pouches of peracarid crustaceans or with decapod crustaceans (Gotto, 1979). Others, such as the Rataniidae, lead a wholly pelagic life (Boxshall, 1979). These are possibly not truly planktonic, but may be associated with larger planktonic organisms. For many of the species, the precise nature of any association and the appropriate host is unknown.

The fish parasites are large copepods and, like the invertebrate associates, also vary from being relatively unmodified and mobile ectoparasites to being extreme degenerate forms firmly anchored to their hosts. Many are of economic importance.

This paper is an attempt to gather together a comprehensive annotated check-list of the siphonostome copepods of Ireland. It is based primarily on a re-assessment of the published records in the scientific literature, augmented by some new data. The last complete check-list was by Pearson (1905), who listed 30 species which would belong to the present order, and a new list is now appropriate. There have been many studies done since Pearson, and a significant number of species added to the Irish fauna (e.g., Gotto, 1966; O'Riordan, 1966a,

1966b).

The species list is laid out in much the same format as in similar lists of the harpacticoid (Holmes and O'Connor, 1990) and poecilostomatoid copepods (Holmes and Gotto, 1992) of Ireland. The genera and species are listed in alphabetical order within families. Synonyms which appear in the Irish literature are given under the relevant modern names. Where a species has been recorded in the literature under a name which is not a synonym, i.e., misidentified, the original name is included for reference purposes. Material lodged in the National Museum of Ireland is indicated NMI. For each species, the records are listed county by county in alphabetical order. Offshore records or records where the county is in doubt are categorised as 'Ireland'. For each county, the records are listed in order of date with the published records first and then the new unpublished data. For the published material, usually only the original record is cited, as some papers repeat previous data. Material collected by the author is indicated by the abbreviation 'JMCH'.

The old records of William Thompson (1844, 1847, 1856) and Baird (1850) are difficult to interpret. Thompson, with characteristic generosity, passed his material on to Professor Baird, who published the distributional records in a general way (Baird, 1850). The same data, with more precise localities was later published posthumously in Thompson's (1856) *Natural History of Ireland*. For example, *Lepeophtheirus stromii* Baird from Donaghadee in Thompson (1856) is probably the same as the record from Co. Down in Baird (1850). The identity of the material can be interpreted by reference to the descriptions and illustrations in Baird (1850). Some of the species in Thompson (1856) are unrecognisable, particularly those derived from a J. V. Thompson manuscript. Names like *Entomoda canicula* J. V. Thompson and *Entomoda puella* J. V. Thompson, both from 'S. of Ireland', can not be matched with any present species. The initials for Thompson are included in the list, as there is potential for confusion between William Thompson, J. Vaughan Thompson, and Isaac C. Thompson. This problem is also exemplified by the work of Andrew Scott and Alexander Scott.

For the fish parasites, the precise locality where the copepod was taken is frequently a matter for conjecture. In many cases the only information is where the fish was landed, and localities such as Belfast or Dublin market are mentioned. Records from the Irish Sea (Scott and Scott, 1913) are based on their work in the eastern side of the Irish Sea, and so are not included,

following the guidelines in O'Riordan (1966b). The distribution of parasites may be the same as that of their hosts, but not necessarily so.

Ecological information is kept to a minimum. For each species, data are given, *inter alia*, on whether it is (a) marine, brackish or freshwater; (b) associated with a particular habitat or animal group; (c) attracted to a light-trap (Holmes and O'Connor, 1988). The parasitic nicothoids are often encountered in light-trap samples, but it is the amphipod host which is attracted and not the relatively immobile copepod. Where relevant, a brief discussion on taxonomic problems or other matters follows.

Many of the records mentioned in this paper are from the Lough Hyne Marine Nature Reserve in West Cork. The author has seen the lough referred to in print variously as 'Lough Hyne', 'Lough Hyne (Ine)', 'Loch Aidhean' 'Lough Ine', 'Loch Oighin', 'Loughine', and even 'Lough Hine'. In this list the term 'Lough Hyne' is used throughout.

The present check-list contains 90 species in 22 families. All previous records of Irish siphonostome species, both marine and freshwater, are cited. In addition, there are 141 new records. Thirteen species are new to Ireland. These are indicated by *.

Studies on the Irish fauna are far from complete. Of the 69 siphonostomatoid marine invertebrate associates listed by Gotto (1993) from the European Atlantic seaboard, only 37 (53.6%) appear in the present check-list. Similarly, of the 90 siphonostomatoid fish parasites covered by Kabata (1979) *Parasitic Copepoda of British Fishes*, only 44 (48.9%) appear here. It is hoped therefore that this list will provide a basis for future research.

Checklist of the Irish Siphonostomatoidea

Rataniidae

Ratania atlantica Farran, 1926

Mayo: 1♀, Station S.R.197. off Co. Mayo, 54°57'N. 10°51'W., coarse silk tow-net, 500 fathoms, 11 February 1905, Fisheries (NMI); Ireland: off west coast of Ireland (Farran, 1926).

Marine, planktonic (Boxshall, 1979). The single ♀ specimen from off Co. Mayo, mounted on a slide and labelled 'Lichomolgid', is part of a collection of material transferred from Fisheries to NMI in 1911. The slide was probably made by G. P. Farran.

Asterocheridae

***Acontiophorus armatus* Brady, 1880**

(= *Ascomyzon ornatum* Brady and Robertson, 1973)

Cork: Barloge Creek, near Lough Hyne (Holmes, 1996); **Down:** 2♂♂ 2juvs, Ringhaddy Sound (J5359), Strangford Lough, 20m, from *Alcyonium digitatum* L. on wreck of the 'Alisdair', 27 September 1991, I. Lawlor (NMI); **Dublin:** 1♀ 1juv., Dalkey Sound (O2726), from *Alcyonium digitatum*, 8 November 1992, I. Lawlor (NMI); **Wexford:** 1♂ 1♀, Conningbeg Light (X9188), 40m, from *Alcyonium digitatum*, April 1994, D. Minchin (NMI); **Ireland:** 1♀, Station S.R.387. Porcupine Seabight, 51°50'N. 12°14'W., cheesecloth net on trawl, 530 fathoms, 7 November 1906, Fisheries (NMI).

Marine, associated with alcyonacean *Alcyonium digitatum* (Holmes, 1996).

***Acontiophorus scutatus* (Brady and Robertson, 1873)**

(= *Solenostoma scutatum* Brady and Robertson, 1873)

Antrim: Whitehead, and Larne Lough (Pearson, 1905); **Cork:** Lough Hyne (Holmes, 1983); 1♂, the Narrows (W016258), Kinish Harbour, Sherkin Island, 30 June 1980, JMCH; 1♂, Lough Hyne (W100280), sponge on *Chlamys distorta* (da Costa), 5 July 1992, J. Nunn (NMI); several specimens, Lough Hyne (W100282), rock washing, 11 July 1993, JMCH (NMI); 1♀, Lough Hyne (W099283), rock washing, 12 July 1993, JMCH; 2♂♂ 1juv., Lough Hyne (W100283), 19 July 1983; 5♂♂ 6♀♀, Lough Hyne (W100283), sponges, 28 June 1994, JMCH (NMI); **Dublin:** 1♀, Dublin Bay (O2-3-), 3 December 1981, J. G. Wilson (NMI); 2♀♀ 6juvs, Dalkey Sound (O2726), from *Antedon bifida* (Pennant), 8 November 1992, I. Lawlor (NMI); **Galway:** Clifden Bay (Brady and Robertson, 1873; Brady, 1880); Roundstone Bay (Brady, 1880); Ballynakill (Farran, 1913); 1♂, Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor (NMI); **Galway/Mayo:** 2♀♀, Killary Harbour, *Serpula* reef, 4m, May 1984, D. Minchin (NMI); **Kerry:** 1♀, Ventry (Q3800), 3 June 1989, JMCH (NMI); **Mayo:** Westport Bay (Brady, 1880).

Marine, associated with sponges (Gotto, 1993). A listing from 'east Ireland' in Gotto (1993) is based on the record from Whitehead, Belfast Lough in Pearson (1905), which was in turn based on a manuscript record by Brady (1904).

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***Asterocheres boeckii* (Brady, 1880)**

(= *Artotrogus boeckii* Brady, 1880)

Antrim: off Whitehead, and Larne Lough (Pearson, 1905); **Cork:** Lough Hyne (Holmes, 1991); 2♂♂ 4♀♀ 1 juv., Lough Hyne (W100282), sponges, 28 June 1994, JMCH (NMI);

Galway: Roundstone Bay (Brady, 1880); **Mayo:** Westport Bay (Brady and Robertson, 1873, as *A. lilljeborgii* Boeck; Brady, 1880); **Ireland:** off south-west Ireland (Bourne, 1890).

Marine, with sponges *Haliclona oculata* (Pallas), *Halichondria panicea* (Pallas) (Gotto, 1993).

***Asterocheres latus* (Brady, 1880)**

(= *Cyclopicera lata* Brady, 1880)

Cork: Lough Hyne (Holmes, 1983); numerous specimens, Lough Hyne (W0928), light-traps, 1984-1997, JMCH (NMI); **Donegal:** Lough Swilly (Brady, 1880); several specimens, Caffard Bay (C1741), Mulroy Bay, 6m, 5 September 1980, D. Minchin (NMI); **Galway:** 5 specimens on slides, labelled *Artotrogus boeckii*, Station M.L.V (or Station CXV, Ballynakill), Fahy Bay (L6658), 1-2 fathoms, 17 January 1901, Fisheries (NMI); 1♀, off Cleggan, from *Doris* sp., 29 September 1902, Fisheries (NMI); several specimens, Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor (NMI).

Marine, associated with sponges such as *Clathrina* and *Halichondria*. Light-trap. The listing of *Asteroches echinicola* (Norman) from 'north Ireland' in Gotto (1993) is based on Giesbrecht (1899). Giesbrecht interpreted the record of *Cyclopicera lata* from Lough Swilly (Brady, 1880) as if that species was a junior synonym of *A. echinicola*. However, *A. echinicola* is a separate species which has not yet been found around Ireland.

***Asterocheres lilljeborgii* Boeck, 1859**

(= *Artotrogus lilljeborgii* (Boeck, 1859))

Down: off Chapel Island, Strangford Lough (Heaney, 1966); **Mayo:** Westport Bay (Brady, 1880).

Marine, with asteroid echinoderms such as *Henricia* spp. and *Asterias rubens* L. (Bresciani and Lützen, 1962), and a sponge (Brady, 1880).

***Asterocheres parvus* Giesbrecht, 1897**

Cork: Lough Hyne (Holmes, 1991).

Marine, associated with sponges (Gotto, 1993).

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***Asterocheres simulans* (T.Scott, 1898)**

Cork: Lough Hyne (Holmes, 1983); 1♂ 1♀, Lough Hyne (W100282), rock washing, 11 July 1993, JMCH (NMI); 1♂ 3♀♀, Lough Hyne (W100282), sponges, 28 June 1994, JMCH (NMI).

Marine, associated with sponges (Gotto, 1993).

***Asterocheres stimulans* Giesbrecht, 1897**

Cork: Lough Hyne (Holmes, 1991); 3♂♂ 2♀♀, Lough Hyne (W100282), sponges, 28 June 1994, JMCH (NMI).

Marine, associate unknown (Gotto, 1993).

***Asterocheres suberitis* Giesbrecht, 1899**

Cork: Lough Hyne (Holmes, 1991); 1♀, Lough Hyne (W099283), rock washing, 12 July 1995, JMCH (NMI).

Marine, with sponges *Amphilectus fucorum* (Esper) and *Suberites domuncula* (Olivi) (Holmes, 1991; Gotto, 1993).

***Asterocheres violaceus* (Claus, 1889)**

Cork: Lough Hyne, and off Galley Cove, near Crookhaven (Holmes, 1991); 1♂ 2♀♀, Whirlpool Cliff (W100283) Lough Hyne, from seven *Echinus esculentus* L., 13 July 1995, JMCH; Down: off Chapel Island, Strangford Lough (Heaney, 1966).

Marine, associated with a number of echinoderms, *Marthasterias glacialis* L., *Porania pulvillus* (O. F. Müller), *Solaster papposus* (L.), *Asterias rubens* and *Echinus esculentus* (Humes, 1986; Gotto, 1993).

***Collocheres elegans* A.Scott, 1896**

(= *Leptomyzon elegans* (A.Scott, 1896))

Cork: Lough Hyne (Holmes, 1996).

Marine, associated with ophiuroid *Ophiocomina nigra* (Abildgaard) (Gorzula, 1978). Sars (1915) described the oral cone of this species as having "2 remarkable diverging tentacular appendages, apparently attached to the posterior lip". The existence of these appendages was dismissed by Stock (1966), but they are clearly visible in the Lough Hyne material.

***Collocheres gracilicauda* (Brady, 1880)**

Cork: Lough Hyne (Holmes, 1985); 1♀, Lough Hyne (W099284), rock washing, 15 July 1992,

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JMCH; 1♀, Lough Hyne (W100282), rock washing, 8 August 1992, JMCH; 1♀, Lough Hyne (W0928), from *Ophiothrix fragilis* (Abildgaard), August 1992, JMCH (NMI); 4♀♀, Lough Hyne (W100282), rock washing, 5m, 19 July 1993, JMCH; **Down:** off Chapel Island, Strangford Lough (Heaney, 1966); **Galway:** 1♀, Station L.167. off Coastguard Point (L6659), Ballynakill, 4-6 fathoms, 11 October 1902, Fisheries (NMI); 1♂, Keenaunnagark (L9622), near Cashla Bay, from *Asterias rubens*, 25 April 1986, G. O'Donnell (NMI).

Marine, usually associated with the ophiuroid *Ophiothrix fragilis* (Bresciani and Lützen, 1962). Light-trap.

***Dermatomyzon nigripes* (Brady and Robertson, 1876)**

(= *Cyclopicera nigripes* Brady and Robertson, 1876)

Antrim: off Whitehead (Pearson, 1905); **Cork:** Lough Hyne (Holmes, 1983); 1♂, Sherkin Island (W006259), light-trap, 10m, 3 August 1987, JMCH (NMI); 2♂♂, Sherkin Island (W014259), light-trap, 4m, 3 August 1987, JMCH (NMI); 1♂, Lough Hyne (W095284), light-trap, 20m, 14 June 1997, JMCH (NMI); **Donegal:** Lough Swilly (Brady, 1880); **Galway:** Ballynakill (Farran, 1913); Spiddal (Holmes, 1986); **Galway/Mayo:** 1♀ 2juvs, Killary Harbour, *Serpula* reef, 4m, May 1984, D. Minchin (NMI); **Kerry:** 1♂, Knightstown (V4277), Valentia Island, light-trap, 3m, 21 July 1986, JMCH; **Waterford:** 1♂, Dunmore East (S6900), light-trap, 5m, coarse gravel, 23 June 1983, JMCH.

Marine, associate unknown (Gotto, 1993). Light-trap.

***Rhynchomyzon purpurocinctum* (T. Scott, 1893)**

Cork: Barloge, near Lough Hyne (Holmes, 1991); 1♂, Lough Hyne (095287), light-trap, 25m, 10 June 1997, JMCH (NMI); **Galway:** Ballynakill (Farran, 1913); 1♀, Station L.167. off Coastguard Point (L6659), Ballynakill, 4-6 fathoms, 11 October 1902, Fisheries (NMI); **Wexford:** 1♀, south-west of Hook Head (X701911), coll. B. E. Picton, 5 September 1996, BIOMAR Survey (NMI).

Marine, associate unknown (Gotto, 1993). Light-trap.

***Scottocheres elongatus* (T. Scott and A. Scott, 1894)**

Cork: Lough Hyne (Holmes, 1985, 1998); numerous specimens, Lough Hyne (W0928), rock washings and sponges, 1987-1997, JMCH (NMI); **Galway:** Ballynakill (Farran, 1913); 1♂, Station L.167. off Coastguard Point (L6659), Ballynakill, 4-6 fathoms, 11 October 1902,

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Fisheries (NMI).

Marine, associated with sponges, e.g., *Halichondria panicea* (Gotto, 1993). Light-trap.
****Scottomyzon gibberum* (T. Scott and A. Scott, 1894)**

Dublin: 2 ♀♀, off Sandycove (O2-2-), trawl, 30m, *Asterias rubens*, RV 'Celtic Voyager', 17 July 1998, JMCH; **Galway:** 3 ♀♀, Salt Lake (L6649), Clifden, 6m, July 1982, D. Minchin (NMI); 3 ♀♀, Keenaunnagark (L9622), near Cashla Bay, from *Asterias rubens*, 25 April 1986, G. O'Donnell (NMI).

Marine, with asteroids *Asterias rubens* and *Marthasterias glacialis* (Kim, 1992). New to Ireland.

Artotrogidae

***Artotrogus orbicularis* Boeck, 1859**

Cork: Barloge, near Lough Hyne (Holmes, 1991); **Dublin:** Sandycove (Holmes, 1991).

Marine, apparently associated with nudibranch molluscs (Gotto, 1993). Light-trap. Both the Lough Hyne and the Sandycove specimens match the *A. orbicularis* of Giesbrecht (Giesbrecht, 1899) and not the new *A. sarsi* Kim (Kim, 1996) which is based on the figure of *A. orbicularis* in Sars (1915).

***Bradypontius magniceps* (Brady, 1880)**

Antrim: Larne Lough (Pearson, 1905).

Marine, associate unknown, possibly sponges (Gotto, 1993).

***Bradypontius papillatus* (T. Scott, 1888)**

Cork: Lough Hyne (Holmes, 1985, 1998); 1 ♀, Rapids area (W100281), Lough Hyne, coll. J. A. Kitching, July 1953, K. M. Roe (NMI); numerous specimens, Lough Hyne (W0928), sponges, 1988-1997, JMCH (NMI); **Galway:** 1 ♂, Station L.172. near Coastguard Deep (L6759), 3-8 fathoms, 22 October 1902, Fisheries (NMI); 1 ♀, Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor (NMI).

Marine, associated with sponge *Hymeniacidon perleve* (Montagu) (Holmes, 1998). Males in light-trap.

***Cryptopontius brevifurcatus* (Giesbrecht, 1895)**

Cork: Lough Hyne (Holmes, 1985); 1 ♀, Barloge (W100280), near Lough Hyne, coarse shell gravel, 24 July 1986, JMCH (NMI); several specimens, Barloge (W100280) near Lough Hyne,

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gravel, 7 July 1994, JMCH (NMI); **Down:** off Chapel Island, Strangford Lough (Heaney, 1966).

Marine, associate uncertain, possibly *Echinus esculentus* (Gotto, 1993). Light-trap.

***Dyspontius striatus* Thorell, 1859**

Cork: Lough Hyne (Holmes, 1987); 1♂ 2♀♀, Lough Hyne (W100282), rock washing, 5m, 19 July 1993, JMCH (NMI); **Dublin:** 1♀, Dublin Bay (O2-3-), 3 December 1981, J. G. Wilson (NMI); **Galway:** Ballynakill (Farran, 1913).

Marine, associate uncertain (Gotto, 1993). Light-trap. In the Clare Island Survey report (Farran, 1913), species new to Ireland were marked with an asterisk. *D. striatus* was not so marked, indicating that Farran was aware of an earlier Irish record. However, the author has been unable to find any such record and the species is not mentioned in the comprehensive summary of records by Pearson (1905).

***Glannapontius maculatus* Holmes, 1998**

Cork: Lough Hyne (Holmes, 1998).

Marine, host uncertain, but possibly associated with the sponge *Haliclona cinerea* (Grant) (Holmes, 1998). Males in light-trap.

***Myzopontius pungens* Giesbrecht, 1895**

Cork: Lough Hyne (Holmes, 1991).

Marine, associated with sponges, usually *Clathrina* spp. (Schirl, 1973). Light-trap.

Nanaspidae

***Nanaspis ninae* Bresciani and Lützen, 1962**

Ireland: Porcupine Seabight, off west of Ireland (Humes, 1980).

Marine, on holothurian *Parastichopus tremulus* (Gunnerus) (Bresciani and Lützen, 1962).

Microponiidae

****Microponitius ovoides* Gooding, 1957**

Dublin: 5♂♂ 6♀♀, South Dublin Bay (O2-3-), trawl, 20m, from one *Echinocardium cordatum* (L.), RV 'Celtic Voyager', 17 July 1998, JMCH (NMI).

Marine, associated with echinoid *Echinocardium cordatum* (Gooding, 1957). New to Ireland.

Cancerillidae

Cancerilla tubulata Dalyell, 1851

Cork: Lough Hyne (Holmes, 1985; Holmes and O'Connor, 1991); 1♂, Red Strand (W358327), Dirk Bay, near Clonakilty, light-trap, 5m, 14 August 1983, JMCH (NMI); 2♂♂, Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); 9♂♂, Sherkin Island (W006259), light-trap, 10m, 3 August 1987, JMCH (NMI); 5♂♂, Sherkin Island (W014259), light-trap, 4m, 3 August 1987, JMCH; **Down:** Strangford Lough area (Williams, 1954); **Dublin:** 1♂, Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; 1♂, Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **Galway/Mayo:** Killary Harbour (Farran, 1913); **Waterford:** 6♂♂, Dunmore East (S6900), light-trap, 5m, coarse gravel, 23 June 1983, JMCH (NMI) - this occurrence is the basis of the record from 'south-east Ireland' in Gotto (1993).

Marine, females attached to underside of ophiuroids, e.g., *Amphipholis squamata* (Delle Chiaje), *Ophiocomina nigra*, *Ophiothrix fragilis* (Gotto, 1993). Males in light-trap. Although males are often encountered in light-traps set in Lough Hyne, examination of numerous specimens of the brittle-star *Amphipholis squamata* at the same locality has failed to reveal a single female copepod.

**Parartotrogus richardi* T.Scott and A.Scott, 1893

Dublin: 1♀, south Dublin Bay (O2-3-), trawl, 20m, from *Ophiura ophiura* (L.), RV 'Celtic Voyager', 17 July 1998, JMCH (NMI).

Marine, associated with ophiuroid *Ophiura ophiura* (Gotto, 1993). New to Ireland.

Family unknown

Apodomyzon brevicorne Stock, 1970

Cork: Lough Hyne (Holmes, 1991); 2♀♀, Lough Hyne (W100282), rock washing, 19 July 1993, JMCH (NMI); 1♀, Lough Hyne (W099283), rock washing, 12 July 1995, JMCH (NMI).

Marine, parasitic in sponge *Haliclona indistincta* (Bowerbank) (Stock, 1970).

Nicothoidae

Nicothoe astaci Audouin and H. Milne Edwards, 1826

Cork: 4 copepodids, Courtmacsherry Bay, from gills of *Homarus gammarus* (L.), 18 October 1986, J. Dorman (NMI); **Down:** Groomsort and Donaghadee (Gotto, 1954).

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Marine, parasitic on gills of lobster *Homarus gammarus* and spiny lobster *Palinurus elephas* (Fabricius) (Gotto, 1993).

***Sphaeronella atyli* Hansen, 1897**

Cork: 1♀ 2juvs, Sherkin Island (W006259), light-trap, 10m, from *Atylus falcatus* Metzger, 3 August 1987, JMCH (NMI) (in Costello and Myers (1989a) as *Sphaeronella* sp. with *Atylus falcatus*); Galway: Mweenish (Gotto and McGrath, 1980).

Marine, in marsupium of amphipods *Atylus* spp. (Costello and Myers, 1989a). Host amphipod in light-trap.

***Sphaeronella danica* Hansen, 1897**

Galway: Kylesalia, Kilkieran Bay (Gotto and McGrath, 1980).

Marine, in marsupium of amphipods, e.g., *Erichthonius punctatus* (Bate) (Gotto, 1993).

***Sphaeronella leuckartii* Salensky, 1868**

Cork: Lough Hyne (Holmes, 1985; Costello and Myers, 1989a, 1989b); 8♂♂ 16♀♀, Sherkin Island (W006259), light-trap, 7m, with *Apherusa bispinosa* (Bate), 2 August 1987, JMCH; several specimens, Sherkin Island (W006259), light-trap, 10m, with *Apherusa bispinosa*, 3 August 1987, JMCH (NMI) (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Apherusa bispinosa*'); 1♀, Barloge (101279), near Lough Hyne, light-trap, 5m, with *Apherusa bispinosa*, 28 July 1985, JMCH (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Apherusa bispinosa*'); Dublin: Sandycove (Costello and Myers, 1989a); 1♀, Dalkey Sound (O272265), light-trap, 5m, with *Apherusa bispinosa*, 15 September 1985, JMCH (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Apherusa bispinosa*'); Wicklow: numerous specimens, Greystones (O294129), light-trap, 3m, with *Apherusa bispinosa*, 26 September 1982, JMCH.

Marine, in marsupium of amphipods, e.g., *Aora gracilis* (Bate), *Apherusa bispinosa* (Costello and Myers, 1989a; Gotto, 1993). Host amphipods in light-trap.

***Sphaeronella longipes* Hansen, 1897**

Clare/Galway: Galway Bay (Gotto and McGrath, 1980); Cork: 1♀, Whirlpool Cliff (W100283), Lough Hyne, light-trap, 20m, with ♂ *Ampelisca diadema* (A. Costa), 22 Aug. 1983, JMCH (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Ampelisca diadema*').

Marine, in marsupium of amphipod *Ampelisca* spp. (Gotto, 1993). Host amphipod in light-

trap.

***Sphaeronella minuta* T. Scott, 1904**

Dublin: 1♀, the '40-Foot', Sandycove (O259281), light-trap, 10m, with *Periocolodes longimanus* (Bate and Westwood), 9 January 1983, JMCH (NMI) (this occurrence is the basis of the record from 'south-west Ireland' in Gotto (1993) (Gotto, pers. comm.).

Marine, in marsupium of amphipods, e.g., *Periocolodes longimanus* and *Pontocrates arenarius* (Bate) (Gotto, 1993). Host amphipod in light-trap.

***Sphaeronella paradoxa* Hansen, 1897**

Cork: Lough Hyne (Holmes, 1985; Costello and Myers, 1989a); 4♂♂ 2♀♀ 1juv., Sherkin Island (W006259), light-trap, 10m, with *Bathyporeia guilliamsoniana* (Bate), 3 August 1987, JMCH (NMI) (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Bathyporeia guilliamsoniana*'); 2♀♀, Sherkin Island (W014259), light-trap, 4m, with *Periocolodes longimanus*, 3 August 1987, JMCH (NMI) (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Periocolodes longimanus*'); **Wexford:** Pollishone (Gotto and McGrath, 1980).

Marine, in marsupium of amphipods, notably *Bathyporeia elegans* Watkin, other *Bathyporeia* spp., and *Periocolodes longimanus* (Gotto, 1993). Host amphipods in light-trap.

***Sphaeronella vararensis* T. Scott, 1905**

Cork: 1♀, Sherkin Island (W006259), light-trap, 10m, from *Megaluropus agilis* Hoek, 3 August 1987, JMCH (NMI) (in Costello and Myers (1989a) as '*Sphaeronella* sp. with *Megaluropus agilis*'); **Dublin:** Sandycove (Costello and Myers, 1989a).

Marine, marsupium of amphipod *Megaluropus agilis* (Costello and Myers, 1989a). Host amphipods in light-trap.

Boxshall and Defaye (1995) give the locality for '*Sphaeronella* sp. (Scott, 1905)' from the cumacean *Hemilamprops rosea* (Norman) as being 'Irelande'. However, the locality given in Scott (1905) is Loch Fyne, which is on the west coast of Scotland. This form may well be *S. rotundata* Hansen, a parasite of *Hemilamprops cristata* Sars, (Boxshall and Defaye, 1995).

Melinnacheridae

***Melinnacheres steenstrupi* (Bresciani and Lützen, 1961)**

Galway: Kilkieran Bay (Gotto and O'Connor, 1980).

Marine, parasitic on the gills of polychaete *Terebellides stroemi* M. Sars (Gotto, 1993).

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Phyllodicolidae

Cyclorhiza megalova Gotto and Leahy, 1988

Galway: Dunkellin area, east Galway Bay (Gotto and Leahy, 1988).

Marine, attached to polychaete *Eteone longa* (Fabricius) (Gotto and Leahy, 1988).

Herpyllobiidae

Herpyllobius polynoes (Krøyer, 1863)

Galway: inner Galway Bay (Gotto and O'Connor, 1980).

Marine, attached to polynoid polychaetes (Gotto, 1993).

Sponginticolidae

Sponginticola uncifer Topsent, 1928

(= *Clionophilus vermicularis* Silén, 1963)

Down: Strangford Lough (Gotto, 1965).

Marine, sponges, e.g., *Cliona celata* Grant (Gotto, 1965).

Caligidae

Caligus belones Krøyer, 1863

Cork: Courtmacsherry Bay (Dorman and Holmes, 1991); 1♂ 3♀, Courtmacsherry Bay, from short-beaked garfish *Belone svetovidovi* Collette and Parin, 5 August 1994, J. Dorman; several specimens, 6 miles south-west of Seven Heads (W4-2-), from garfish *Belone belone* (L.), 11 August 1995, J. Dorman; 1♂, Courtmacsherry Bay, from *Belone svetovidovi*, 30 August 1996, J. Dorman.

Marine, parasitic on garfish *Belone belone* (Cressey and Collette, 1970).

**Caligus bonito* Wilson, 1905

Kerry: 10♀♀, Brandon Bay area, from gill covers of bonito *Sarda sarda* (Bloch), 1984, F. O'Shea (NMI).

Marine, a parasite on large scombrid fishes (Kabata, 1979; Cressey and Cressey, 1980). New to Ireland.

Caligus centrodoni Baird, 1850

Dublin: Dublin (Baird, 1850); Galway/Mayo: Killary Harbour (Holmes and Minchin, 1995).

Marine, parasitic on several perciform fish, commonly red sea-bream *Pagellus bogaraveo* (Brünnich), and wrasses such as *Labrus bergylta* Ascanius (Kabata, 1979).

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***Caligus curtus* O. F. Müller, 1785**

(= *Caligus mülleri* Leach, 1816)

Antrim/Down: Belfast Bay (W. Thompson, 1847, 1856; Baird, 1850, as *C. mülleri* and *C. diaphanus*, probably this species (Kabata, 1979)); **Cork:** Bantry Bay (O'Riordan, 1966b; Minchin, 1991); Lough Hyne (Holmes, 1980; Quigley, 1986); Courtmacsherry Bay (Minchin, 1991); 6 specimens, south of Dunworly Point (W4-30), from *Molva molva* (L.), 18 July 1981, J. Dorman; 1 ♀ 3juvs, off Barloge (W0927), from two *Pollachius pollachius* (L.), 3-4 July 1994, JMCH; 3 ♂♂ 7 ♀♀, Courtmacsherry Bay, from *Molva molva*, 40-60m, 9 August 1995, J. Dorman; 7 specimens, off Old Head of Kinsale (W6-3-), from *Molva molva*, 22 August 1995, J. Dorman; 4 specimens, off Old Head of Kinsale (W6-3-), from *Pollachius pollachius*, 24 August 1995, J. Dorman; **Down:** Ardglass (Williams, 1954); **Dublin:** Dublin Bay (O'Riordan, 1966b); **Galway:** 3 ♀♀ 1juv., Station 80. off Slyne Head, 55 fathoms, from coal-fish *Pollachius virens* (L.) (as *Gadus virens*), 18 July 1890, Royal Dublin Society Fish Survey (NMI); 1 ♀, the Stags (L5067), Inishbofin, from *Pollachius pollachius*, 19 July 1995, E. J. Holmes; **Kerry:** Dingle Bay, from a 'cod' (O'Riordan, 1966b) - the material, 2 ♀♀ in NMI, is labelled 'St.7. 19 May 1890'. According to Holt (1891), Station 7 was in Dingle Bay, 22 fathoms, 12 May 1890. However, according to the Log (lodged in NMI), Station VII (emended to Station 9) was off Benacry Head, Valentia, 40 fathoms, 19 May 1890. Cod *Gadus morhua* L. were taken at both stations. The most likely locality is off Valentia on 19 May; **Ireland:** North of Ireland (W. Thompson, 1856, as *C. mülleri*); Rockall area (Calman and Wright, 1897) - vouched for by four specimens in NMI, labelled as *C. mulleri*, from coal-fish; off the west coast of Ireland (O'Riordan, 1966b).

Marine, parasitic on a wide variety of fish, notably gadoids (O'Riordan, 1966b; Parker *et. al.*, 1968). The *C. curtus* recorded by Quigley (1986) living on thick-lipped grey mullet *Chelon labrosus* (Risso) (as *Crenimugil labrosus*) from Lough Furnace, Co. Mayo is here re-identified as *C. pageti*.

***Caligus diaphanus* von Nordmann, 1832**

Down: Ardglass (Williams, 1954).

Marine, parasitic on a variety of fish, notably gurnards (Kabata, 1979). Thompson's (1847) and Baird's (1850) records of *C. diaphanus* probably represent a complex of several caligid

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species, including *C. curtus* (Kabata, 1979).

***Caligus elongatus* von Nordmann, 1832**

(= *Caligus rapax*, *sensu* Baird, 1850)

Antrim: Larne Lough (Pearson, 1905); **Antrim/Down:** Belfast Bay (Baird, 1850); **Cork:** Berehaven (Herdman, 1891; Jackson and Minchin, 1993); Bantry Bay (O’Riordan, 1966b, as *C. zeii*, in a collection from an assemblage of ‘cod, hake, skate, black pollack, turbot, grey gurnard, ling and blenny’ (NMI)); off Ballycotton (Cross and Johnson, 1976); Lough Hyne (Holmes, 1980; Holmes and O’Connor, 1991); Courtmacsherry Bay (Dorman and Holmes, 1991); entrance to Bantry Bay (Minchin, 1991); 1♀, Log 9. mouth of Kenmare River, 41-38 fathoms, August 1885, Royal Irish Academy Survey (NMI); 1♂ 10♀♀, Lough Hyne (W096284), from *Pleuronectes flesus* L., 23 July 1981, D. Minchin; 2♂♂ 3♀♀ Lough Hyne (W092283), from *Pollachius pollachius*, 30 July 1981, D. Minchin; 2♀♀, River Blackwater, Youghal, skin of *Salmo salar* L., July 1983, R. Fitzgerald (NMI); several ♂♂, Lough Hyne (W0928) light-traps, 1981-1997, JMCH (NMI); 1♂, Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; 1♂ 1♀, off Barloge (W1027), from *Pollachius pollachius*, 4 July 1994, JMCH; 3juvs, Lough Hyne (W100282), from *Sprattus sprattus* (L.), 7 July 1994, N. M. Holmes (NMI); several specimens, Courtmacsherry Bay, from *Cyclopterus lumpus* L., 14 April 1994, J. Dorman; 1 specimen, 6 miles south-west of Seven Heads (W4-2-), from *Belone belone*, 11 August 1995, J. Dorman; 13♀♀, Courtmacsherry Bay, from *Prionace glauca* (L.), 12 August 1994, J. Dorman; 1♀, Courtmacsherry Bay, from *Belone svetovidovi*, 30 August 1996, J. Dorman; **Donegal:** Lough Swilly, Mulroy Bay, and McSwyne Bay (Jackson and Minchin, 1993); **Down:** Ardglass (Williams, 1954); Dunneynell Island, Strangford Lough (Boyd, 1973); **Dublin:** Dalkey (O’Riordan, 1966a); Dublin Bay (O’Riordan, 1966b); **Galway:** Cleggan (Farran, 1903, as *Caligus*; Pearson, 1905, as *C. rapax*); Mutton Island (Fives, 1969); off Slyne Head (O’Riordan, 1966b) - 3♀♀ in NMI from the same station besides the single ♂ mentioned by O’Riordan; Ballinakill, Ardbear, and Mannin, Bertraghboy, Kilkieran Bays, Lettermullen, Ardnamackan Rocks (Jackson and Minchin, 1993); 3 copepodids, Ardmore, Kilkieran Bay, September 1986, R. Taylor; **Galway/Mayo:** Killary Harbour (Minchin, 1991; Jackson and Minchin, 1993; Costelloe *et al.*, 1996b; Holmes and Minchin, 1995); **Kerry:** Valentia (I. C. Thompson, 1897, 1900); Dinish Island, Kilmakilloge, Coulagh

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Bay (Jackson and Minchin, 1993); 1 ♀, off the Skelligs, 62-52 fathoms, 20 August 1890, Royal Dublin Society Fish Survey (NMI); **Louth/Meath:** near the Boyne Estuary (Minchin, 1991); **Mayo:** Clare Island (Jackson and Minchin, 1993); **Wexford:** south-east of Hook Head (Minchin, 1991); 2 ♂♂, 4 miles east of Great Saltee (X8796), 18 October 1978, R. Grainger (NMI); **Ireland:** mid-west coast of Ireland (Tully, 1989).

Marine, associated with a wide variety of fishes (Kabata, 1979). Light-trap. Older records refer to this species as *C. rapax*.

***Caligus labracis* T. Scott, 1902**

Galway/Mayo: Killary Harbour (Holmes and Minchin, 1995).

Marine, parasitic on wrasses *Labrus bergylta* and *L. mixtus* L. (Kabata, 1979).

***Caligus minimus* Otto, 1821**

Kerry: Dingle (Holmes and O'Connor, in press); **Wexford:** Saint Helen's Bay (Holmes and O'Connor, in press).

Marine, parasitic on bass *Dicentrarchus labrax* (L.) Scott and Scott, 1913). A record from a halibut in Belfast market (W. Thompson, 1856, as *Caligus minutus* [sic]) is regarded as extremely doubtful (Kabata, 1979), partly because the host is wrong and partly because Thompson says that "It differs very little - hardly in species - from *C. hippoglossi*, Kroyer". On 25 July 1984, the author found a single male specimen of *C. minimus* in a light-trap set at Carnac, Brittany, on the west coast of France.

****Caligus pageti* Russell, 1925**

Antrim/Down: Belfast, from *Chelon labrosus* (as *Mugil chelo*) (Baird, 1850, as *Caligus mülleri*, possibly this species); **Cork:** 1 ♀, Courtmacsherry Bay, from *Chelon labrosus*, 4 August 1995, D. Minchin (NMI); **Mayo:** Lough Furnace (Quigley, 1986, as *Caligus curtus*) (NMI); **Waterford:** 1 ♂ 1 ♀, off Helvick Head, 29 July 1995, D. Minchin.

Marine to brackish water, parasitic on mullets, e.g. thick-lipped grey mullet *Chelon labrosus*, flathead grey mullet *Mugil cephalus* L., and several *Liza* spp. in the Mediterranean (Raibaut *et al.*, 1998). On 23 July 1984, the author found a single female specimen of *Caligus pageti* in a light-trap set at Carnac, Brittany, on the west coast of France. New to Ireland.

***Caligus pelamydis* Krøyer, 1863**

Antrim/Down: Belfast Bay (Baird, 1850, as *Chalimus scombri*, possibly this species); **Cork:**

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Courtmacsherry Bay (Dorman and Holmes, 1991); Barloge Creek, near Lough Hyne (Holmes, 1991); several specimens, Barloge (W102272), *Scomber scombrus* L., 19 July 1992, JMCH (NMI); **Down**: Strangford Lough area (Williams, 1954); **Galway/Mayo**: Killary Harbour (Holmes and Minchin, 1995).

Marine, parasitic on the gills of scombrids, e.g., mackerel *Scomber scombrus* (Kabata, 1979). The record of '*Caligus scombri*, J. V. Thompson' (W. Thompson, 1856) from 'South of Ireland' might possibly refer to this species, but Pearson (1905) regarded its identity as very uncertain.

***Caligus zei* Norman and T. Scott, 1906**

Cork: Long Island Sound (O'Riordan, 1966b); **Galway/Mayo**: Killary Harbour (Holmes and Minchin, 1995).

Marine, parasitic on john dory *Zeus faber* L. (Scott and Scott, 1913). Records from Bantry Bay in O'Riordan (1966b) are not correct, as all the specimens are here re-identified as *Caligus elongatus*.

****Lepeophtheirus crassus* (Wilson and Bere, in Bere, 1936)**

Cork: 2♀♀, between Cape Clear Island and Fastnet Rock, from *Remora remora* (L.), 29 August 1991, G. Bolster (NMI).

Marine, parasitic on remoras (Yamaguti, 1963). It is a widely-distributed species, described originally from the Gulf of Mexico (Bere, 1936), but also known from the Bay of Bengal (Shiino, 1960). New to Ireland.

***Lepeophtheirus hippoglossi* (Krøyer, 1837)**

(= *Lepeophtheirus obscurus* Baird, 1850)

Mayo: off the Bills (O'Riordan, 1966b).

Marine, parasitic on halibut *Hippoglossus hippoglossus* (L.) (Scott and Scott, 1913). An early record (as *Caligus minutus* [sic], Otto) from a halibut in Belfast market in February 1837 (W. Thompson, 1847, 1856) may well have been this species.

***Lepeophtheirus nordmanni* (H. Milne Edwards, 1840)**

(= *Caligus nordmanni* Milne Edwards, 1840)

Antrim: Co. Antrim coast (Baird, 1850; W. Thompson, 1856); **Cork**: Bantry Bay (O'Riordan, 1966b); **Donegal**: off Co. Donegal (Hillis and O'Riordan, 1960); **Galway**: between Slyne Head

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and High Island (Cooper *et al.*, 1982); **Mayo**: off Achill (O'Riordan, 1966b); **Sligo**: 2♂♂ 5♀♀, off Bomore Rock (G5857), from *Mola mola* (L.), 13 August 1989, D. Cotton (NMI).

Marine, parasitic on sunfish *Mola mola* (Kabata, 1979).

***Lepeophtheirus pectoralis* (O. F. Müller, 1777)**

(= *Caligus pectoralis* O. F. Müller, 1777)

Antrim/Down: Belfast Bay (Baird, 1850); Belfast market (W. Thompson, 1856); **Cork**: Lough Hyne (Holmes, 1980; Holmes and O'Connor, in press); Cork Harbour (Holmes and O'Connor, in press); 10 specimens, Courtmacsherry Pier (W5042), from *Pleuronectes flesus*, 16 June 1980, J. Dorman; several specimens, Lough Hyne (W094288), from pectoral fins of *Pleuronectes flesus*, 8 July 1981, JMCH (NMI); 2♂♂ 5♀♀ 1 juv., Lough Hyne (W096284), from *Pleuronectes flesus*, 23 July 1981, D. Minchin; 2♂♂, the Goleen (W096278), Lough Hyne, from *Pleuronectes flesus*, 24 July 1994, D. Minchin; **Cork/Kerry**: off the south-west coast of Ireland (O'Riordan, 1966b); **Dublin**: 1♀, off Sandycove (O2-3-), trawl, 30m, from pectoral fin of *Pleuronectes platessa* L., RV 'Celtic Voyager', 17 July 1998, JMCH; **Wexford**: Cahore (Quigley and Flannery, 1994); Saint Helen's Bay (Holmes and O'Connor, in press).

Marine, parasitic, predominantly on the skin of pleuronectid flatfishes (Kabata, 1979).

****Lepeophtheirus pollachius* Bassett-Smith, 1896**

Cork: 1♂, near the Kedges (W0624), from gill of *Pollachius pollachius*, 14 July 1981, JMCH.

Marine, parasitic on pollack *Pollachius pollachius*, coal-fish *Pollachius virens* and ling *Molva molva* (Kabata, 1979). New to Ireland.

***Lepeophtheirus salmonis* (Krøyer, 1838)**

(= *Caligus stromii* Baird, 1848)

(= *Lepeophtheirus stromii* (Baird, 1848))

(= *Caligus vespa* Milne Edwards, 1840)

Antrim: River Bush, near Portrush (Baird, 1850); Cushendun (Baird, 1850); **Cork**: Lough Hyne (Holmes, 1985); Bere Haven (Jackson and Minchin, 1993); Argideen (Tully *et al.*, 1993b); 3♂♂ 3♀♀ 2juvs, Mulroe Cove (V9240), near Durrus, Dunmanus Bay, 13 August 1979, JMCH (NMI); 4♀♀, River Blackwater, Youghal, skin of *Salmo salar*, July 1983, R. Fitzgerald (NMI); 1juv., Lough Hyne (W095286), light-trap, 25m, 11 June 1997, JMCH (NMI); **Donegal**: Lough Swilly, Mulroy Bay, and McSwyne Bay (Jackson and Minchin, 1993);

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Down: Dundrum Bay (W. Thompson, 1847, 1856); Donaghadee (W. Thompson, 1847, 1856; Baird, 1850); **Galway:** off Cleggan (O’Riordan, 1966b) - one female specimen confirmed by the author, but the seven males mentioned in the above paper are re-identified here as *Caligus elongatus*; Glassillaun, estuaries of Crumlin River, Owenboliska River, and Cashla River (Tully *et al.*, 1993a); estuaries of Costello River, Dowras River, and Gowla River (Tully *et al.*, 1993a, 1993b); Ballynakill (Jackson and Minchin, 1993; Tully and Whelan, 1993); Ardbear, Lettermullen, and Ardnamackan Rocks (Jackson and Minchin, 1993); Kilkieran Bay, Bertraghboy Bay, and Mannin Bay (Jackson and Minchin, 1993; Tully and Whelan, 1993); Clifden River (Tully *et al.*, 1993a, 1993b; Tully and Whelan, 1993); Ardmore Bay, Kilkieran Bay (Costelloe *et al.*, 1996a, 1996b); River Corrib (Tully and Whelan, 1993); **Galway/Mayo:** Killary Harbour (Tully *et al.*, 1993a, 1993b; Jackson and Minchin, 1993; Tully and Whelan, 1993; Holmes and Minchin, 1995; Costelloe *et al.*, 1995, 1996b, 1998); **Kerry:** estuaries of Owenmore and Feale Rivers (Tully *et al.*, 1993a) Currane Estuary (Tully *et al.*, 1993a, 1993b); estuary of Inney River (Tully *et al.*, 1993b); Dinish Island, Kilmakilloge, and Coulagh Bay (Jackson and Minchin, 1993); 5♀♀, Lough Currane (V5264), from sea trout *Salmo trutta* L., 1979, J. P. O’Connor (NMI); **Mayo:** Clew Bay (Tully *et al.*, 1993a; Tully and Whelan, 1993); Owengarve and Newport Estuaries (Tully *et al.*, 1993b); Burrishoole System (Tully *et al.*, 1993a, 1993b); Owenduff (Tully *et al.*, 1993b); Clare Island (Jackson and Minchin, 1993); River Moy (Tully and Whelan, 1993); **Sligo:** Drumcliffe Bay (Tully *et al.*, 1993a, 1993b; Tully and Whelan, 1993); Ballynahinch River (Tully *et al.*, 1993a); **Ireland:** Lough Neagh (Baird, 1850, as *Caligus rapax* and *C. mülleri*, probably this species); widespread in Ireland (Kane, 1966); Ireland (O’Riordan, 1966b); mid-west coast of Ireland (Tully, 1989). The record of ‘*Caligus salaris* ? J. V. Thompson’ (W. Thompson, 1856) from ‘South of Ireland’ might well refer to this species.

Marine, but can be found in freshwater, a serious pest of salmonid fish (e.g., Fryer, 1982; Tully, 1989). Juveniles only in light-trap.

***Lepeophtheirus thompsoni* Baird, 1850**

Antrim/Down: Belfast Bay (Baird, 1850); **Cork:** Dubeacon Harbour, Dunmanus Bay (O’Riordan, 1966b); **Kerry:** 1♀, Brandon Bay, *Scophthalmus maximus* (L.), October 1991, D. Quigley (NMI).

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Marine, parasitic on the gills of turbot *Scophthalmus maximus* and brill *S. rhombus* (L.) (Kabata, 1979).

***Pseudocaligus brevipedis* (Bassett-Smith, 1896)**

Cork: Lough Hyne (Holmes, 1985); **Down:** Ardglass (Williams, 1954); **Galway/Mayo:** Killary Harbour (Holmes and Minchin, 1995); **Ireland:** 2♀♀ 1juv., Porcupine Bank, from bigeye rockling *Antonogadus macrophthalmus* (Günther), 14 June 1988, D. Quigley and K. Flannery (NMI).

Marine, parasitic on rocklings, e.g., *Gaidropsarus mediterraneus* (L.) and *G. vulgaris* (Cloquet) (Kabata, 1979).

Trebiidae

***Trebius caudatus* Krøyer, 1838**

Antrim/Down: Belfast Bay (W. Thompson, 1847, 1856; Baird, 1850); **Cork:** Bantry Bay (O'Riordan, 1966b); **Down:** Strangford Lough (Williams, 1954); **Dublin:** Dublin Bay (O'Riordan, 1966b); **Mayo:** 3♀♀, Clew Bay, from 'skate', 28 June 1890, Royal Dublin Society Fish Survey (NMI).

Marine, parasitic on many elasmobranchs, e.g., *Raja batis* L. and *R. clavata* L. (Kabata, 1979).

Pandaridae

***Dinemoura producta* (O. F. Müller, 1785)**

(= *Caligus productus* O. F. Müller, 1785)

(= *Dinematura producta* (O. F. Müller, 1785))

Antrim/Down: Belfast Bay (W. Thompson, 1856); **Down:** Holywood (Scott, 1963); **Galway:** off Cleggan (O'Riordan, 1966b); **Mayo:** off Achill Head (O'Riordan, 1966b); **Ireland:** North of Ireland (W. Thompson, 1856).

Marine, parasitic on sharks, notably thresher *Alopias vulpinus* (Bonnaterre), porbeagle *Lamna nasus* (Bonnaterre) and basking shark *Cetorhinus maximus* (Gunnerus) (Scott and Scott, 1913). Pearson (1905) and Scott and Scott (1913) interpreted the W. Thompson records of *Caligus productus* from 'North of Ireland' and Belfast Bay as being *Demoleus paradoxus* Otto (now *Demoleus heptapus* (Otto)), a parasite on sharks of the genus *Hexanchus* (Kabata, 1979). However, it could just as easily be *Dinemoura producta* as there was no host mentioned in

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Thompson (1856).

***Echthrogaleus coleoptratus* (Guérin-Méneville, 1837)**

Cork: Dunbeacon Harbour, Dunmanus Bay (O'Riordan, 1966b); 2♀♀, Courtmacsherry Bay, from *Prionace glauca*, 24 June 1980, J. Dorman (NMI); 1♀, Courtmacsherry Bay, from *Prionace glauca*, 12 August 1981, J. Dorman (NMI); 7♀♀, south of Courtmacsherry Bay, from *Prionace glauca*, 8 August 1995, K. Cashman (NMI); **Down:** Dundrum Bay (Williams, 1954).

Marine, a common parasite on the outside of sharks, notably mako *Isurus oxyrinchus* Rafinesque (Kabata, 1979).

***Pandarus bicolor* Leach, 1816**

Cork: 1♀, Courtmacsherry Bay, from *Squalus acanthias* L., 22 September 1981, J. Dorman (NMI); **Kerry:** 30 miles off Valentia Island (O'Riordan, 1966b); 3♀♀, Dingle Bay, trawl, from anal fin of *Squalus acanthias*, MFV 'Elsie Marie' (skipper, Billy Granville), 24 June 1991, D. Quigley and K. Flannery (NMI); **Ireland:** off the south-west coast of Ireland (O'Riordan, 1966b).

Marine, parasitic on the skin of various dog-fishes and sharks (Scott and Scott, 1913).

Cecropidae

***Cecrops latreillii* Leach, 1816**

Antrim: Co. Antrim coast (W. Thompson, 1856); **Cork:** Kinsale (W. Thompson, 1844); 'S of Ireland' (W. Thompson, 1856); **Donegal:** off Co. Donegal (Hillis and O'Riordan, 1960); 2♂♂ 2♀♀, Lough Swilly, from gills of *Mola mola*, 1888, W. F. de V. Kane (NMI); **Dublin:** Dublin (W. Thompson, 1856); **Galway:** between Slyne Head and High Island (Cooper *et al.*, 1982); **Mayo:** off Achill (O'Riordan, 1966b); **Ireland:** off the south-west coast of Ireland (O'Riordan, 1966b).

Marine, parasitic on the gills of sunfish *Mola mola* (Scott and Scott, 1913).

***Orthogoriscicola muricata* (Krøyer, 1837)**

Galway: between Slyne Head and High Island (Cooper *et al.*, 1982).

Marine, parasitic on the skin of sunfish *Mola mola* (Kabata, 1979).

***Philorthogoriscus serratus* (Krøyer, 1863)**

Cork: Bantry Bay (O'Riordan, 1966b); **Galway:** between Slyne Head and High Island (Cooper

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et al., 1982); Mayo: off Achill Island (O'Riordan, 1966b).

Marine, parasitic on the skin of sunfish *Mola mola* (Kabata, 1979).

Dichelesthidae

Dichelesthium oblongum (Abildgaard, 1794)

(= *Dichelesthium sturionis* Hermann, 1804)

Ireland: 'S. of Ireland' (W. Thompson, 1856, as *Dichelestion sturionis*); west coast of Ireland (O'Riordan, 1966b).

Marine, parasitic on sturgeons, e.g., *Acipenser sturio* L. (Kabata, 1979).

Eudactylinidae

Nemesis lamna Risso, 1826

Down: Holywood, on *Cetorhinus maximus* (Gunnerus) (Scott, 1963).

Marine, parasitic on several species of shark (Yamaguti, 1963). The variety which occurs on the gills of basking shark *Cetorhinus maximus* is called form *vermi* A. Scott (Kabata, 1979).

Hatschekiidae

**Congericola pallidus* van Beneden, 1854

Cork: 1♀, Baltimore (W0426), from gill of *Conger conger* (L.), July 1994, JMCH (NMI).

Marine, attached to gills of conger *Conger conger* (Kabata, 1979). Kabata (1992) mentions its distribution around the British Isles as 'all sea areas'. However, the above listing from Baltimore is the first definite record from around Ireland which the author has been able to establish. New to Ireland.

Lernanthropidae

Lernanthropus kroyeri van Beneden, 1851

Wexford: Saint Helen's Bay (Holmes and O'Connor, in press).

Marine, parasitic on the gills of bass *Dicentrarchus labrax* (L.) (Scott and Scott, 1913).

Pennellidae

Lernaeenicus encrasicoli (Turton, 1807)

(= *Lerneonema encrasicoli* (Turton, 1807))

Cork: Youghal (Baird, 1850, as *Lerneonema encrasicoli*; W. Thompson, 1856, as *Lerneonema monillaris*); 1♀, Castletownbere (V6-4-), from *Sprattus sprattus*, November 1983, D. Osborne (NMI); Ireland: northern coast of Ireland, Ordnance Survey Collection (O'Riordan, 1966b).

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Marine, attached to body of sprat *Sprattus sprattus* (Kabata, 1979).

***Lernaeenicus sprattae* (Sowerby, 1806)**

(= *Lerneonema monillaris* Milne Edwards, 1840)

Cork: Youghal (W. Thompson, 1844); **Dublin:** Dublin Bay (O'Riordan, 1966b); **Ireland:** northern coast of Ireland, Ordnance Survey Collection (O'Riordan, 1966b).

Marine, attached to eye of sprat *Sprattus sprattus* and pilchard *Sardina pilchardus* (Walbaum) (Kabata, 1979).

***Lernaeocera branchialis* (L., 1767)**

(= *Lernaea branchialis* L., 1767)

(= *Lernea branchialis* (L. 1767))

(= *Lernaeocera obtusa* Kabata, 1958)

Antrim/Down: Belfast Bay (Baird, 1850; W. Thompson, 1856); **Cork:** Dunbeacon Harbour, Dunmanus Bay (O'Riordan, 1966b); **Dublin:** Dublin (Baird, 1850; W. Thompson, 1856); Dublin Bay (O'Riordan, 1966b); **Galway:** Mutton Island, Galway Bay (Fives, 1969); **Galway/Mayo:** Killary Harbour (Holmes and Minchin, 1995); **Kerry:** 3 ♀♀, Dingle Bay, from gill of *Merlangius merlangus* (L.), 7 November 1989, D. Quigley and K. Flannery.

Marine, parasitic on the gills of gadoids and a pest of cod *Gadus morhua*, whiting *Merlangius merlangus* and haddock *Melanogrammus aeglefinus* (L.) (Kabata, 1997).

***Lernaeocera lusci* (Bassett-Smith, 1896)**

Kerry: west of the New Ground, Dingle Bay (O'Riordan, 1961, 1962, 1964); 2 ♀♀, west-north-west of Skelligs, from gills of *Phycis blennoides* (Brünnich), April 1984, K. Flannery (NMI); 1 ♀, west-north-west of Skelligs, from gill of *Capros aper* (L.), April 1984, K. Flannery (NMI); **Ireland:** 4 ♀♀, Porcupine Bank, from *Antonogadus macrophthalmus*, 14 June 1988, D. Quigley and K. Flannery (NMI).

Marine, attached to gills of gadoids such as pouting *Trisopterus luscus* (L.) and greater fork-beard *Phycis blennoides* (O'Riordan, 1962; Kabata, 1979). Another species, *Lernaeocera minuta* (T. Scott), is described by Kabata (1992) as occurring in all sea areas round the British Isles, but the author has been unable to trace any mention of it specifically from around Ireland. Also, Kabata (1992) expressed the opinion that *L. minuta* is of uncertain validity and may be simply a dwarf form of *L. lusci*, living on small host fish such as sand goby

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Pomatoschistus minutus (Pallas).

Pennella balaenoptera Koren and Danielssen, 1877

Mayo: Belmullet (Scharff, 1913).

Marine, attached to cetaceans (Kabata, 1992). A single ♀ specimen identified as '*Pennella*', attached to a bottle-nosed whale *Hyperoodon ampullatus* (Forster) stranded at Ring, Co. Cork (Smiddy, 1986), may possibly belong to the present species, but this cannot be confirmed.

Pennella filosa (L., 1758)

(= *Pennella orthagorisci* Wright, 1870)

Cork: Cork Harbour (Wright, 1870); 6♀♀, between Cape Clear Island and Fastnet Rock, from *Remora remora*, 29 August 1991, G. Bolster (NMI); Galway: between Slyne Head and High Island (Cooper *et al.*, 1982); Ireland: off south-west coast of Ireland (Pollock, 1994).

Marine, attached to large scombrids of the genus *Thunnus*, swordfish *Xiphias gladius* L. and sunfish *Mola mola* (Kabata, 1979).

Sphyrriidae

Lophoura edwardsi Kölliker, 1853

(= *Rebelula edwardsi* (Kölliker, 1853))

Ireland: Station I. off south-west Ireland, HMS 'Research' (Scott and Scott, 1913; Yamaguti, 1963).

Marine, attached to macrourid *Caelorinchus caelorhincus* (Risso) (Kabata, 1979).

**Sphyrion lumpi* (Krøyer, 1845)

Ireland: 1♀, Station S.R.1690. Porcupine Slope, trawl, from '*Mora*', 19 August 1913, Fisheries (NMI). New to Ireland.

Marine, parasitic on several deep-water fish (Kabata, 1979).

Lernaeopodidae

**Advena paradoxa* (van Beneden, 1851)

Cork: 5♀♀ (each with dwarf ♂ attached), off Sevenheads, trawl, from gills of *Scomber scombrus*, November 1983, R. Fitzgerald (NMI). New to Ireland.

Marine, parasitic on gills of mackerel *Scomber scombrus* (Kabata, 1992).

**Brachiella thynni* Cuvier, 1830

Kerry: 2♀♀ (one with dwarf ♂ attached), Station 9. off Benacry Head, Valentia, 40 fathoms,

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from under pectoral fin of supposed king fish, 19 May 1890, Royal Dublin Society Fish Survey (NMI).

Marine, parasitic on the outer surface of various species of tuna and related scombrids (Kabata, 1979). The host of the above-mentioned copepods is a bit of mystery. What is a king fish? The term is not mentioned in recent fish books, but Forbes (1905) lists king-fish as one the many names for a dogfish. Holt (1891) lists two 'small spotted Dogs' as being found at Station 9. However, *Brachiella thynni* is normally a parasite on large scombrid fish, which were not taken at Station 9. In all probability there has been some mix-up with the host, hence the use of the term 'supposed' on the label. New to Ireland.

Clavella adunca (Strøm, 1762)

(= *Lernaea uncinata* O. F. Müller, 1776)

(= *Lerneae uncinata* O. F. Müller, 1776)

(= *Anchorella uncinata* (O. F. Müller, 1776))

(= *Clavella uncinata* (O. F. Müller, 1776))

Antrim: Larne (Baird, 1850, as *Anchorella rugosa*; Pearson, 1905, as *Anchorella uncinata* and *Anchorella emarginata*; Scott and Scott, 1913, as *Clavella rugosa*); Larne and Holywood (W. Thompson, 1856); **Cork:** Barloge Creek, near Lough Hyne (Holmes, 1996); 5 ♀♀ (one with dwarf ♂ attached), near the Kedges (W0624), from gills of *Pollachius pollachius*, 14 July 1981, JMCH; **Dublin:** Dublin market (W. Thompson, 1856); Dublin Bay (Anon., 1893; O'Riordan, 1966b); **Ireland:** Rockall area (Calman and Wright, 1897) - this record, as *Anchorella* sp., is represented by a single specimen in NMI. It was labelled *Anchorella berylae*, from 'coal-fish', and it is here confirmed by the author as *C. adunca*.

Marine, parasitic on gadoids, notably cod *Gadus morhua* and whiting *Merlangius merlangus* (O'Riordan, 1966b). The listing of *Clavellisa emarginata* for Ireland in *Limnofauna Europaea* (Fryer, 1978) is probably based on Pearson's listing of *Anchorella emarginata*, here placed under *Clavella adunca*. The true *Clavellisa emarginata* (Krøyer, 1837) is a parasite of shads *Alosa* spp. (Kabata, 1979), and has not so far been recognised in Ireland.

**Clavella alata* Brian, 1906

Kerry: 1 ♀, west-north-west of Skelligs, from gill of *Phycis blennoides*, April 1984, K. Flannery (NMI). New to Ireland.

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Marine, parasitic on *Phycis* spp. (Kabata, 1992).

Clavella stellata (Krøyer, 1838)

Ireland: coast of north Ireland (Kabata, 1962).

Marine, parasitic on the skin of hake *Merluccius merluccius* (L.) (Kabata, 1962).

**Clavellisa scombri* (Kurz, 1877)

Cork: 2 ♀♀, off Sevenheads, trawl, *in situ* on gill fragments from *Scomber scombrus*, November 1983, R. Fitzgerald (NMI); 2 ♀♀ (one with dwarf ♂ attached), the Daunt Rock (W8251), off Cork Harbour, gills of *Scomber scombrus*, 7 October 1989, D. Minchin (NMI).

Marine, parasitic on the gills of mackerel *Scomber scombrus* (Kabata, 1979). New to Ireland.

Lernaeopoda bidiscalis Kane, 1892

Kerry: between Valentia and the Skelligs (Kane, 1892).

Marine, parasitic, usually on the claspers of tope *Galeorhinus galeus* (L.) (Scott and Scott, 1913).

Lernaeopoda galei Krøyer, 1837

Antrim/Down: Belfast Bay (W. Thompson, 1847, 1856; Baird, 1850); Dublin: 1 ♀, Dublin Bay area, from cloaca of *Scyliorhinus canicula* (L.), October 1981 (NMI); Kerry: between Valentia and the Skelligs (Kane, 1892).

Marine, parasitic on various small sharks; tope *Galeorhinus galeus*, smooth hound *Mustelus mustelus* (L.), lesser spotted dogfish *Scyliorhinus canicula* (Kabata, 1979).

Lernaeopodina longimana (Olsson, 1869)

(= *Lernaeopodina cluthae* (T. Scott, 1900))

Down: Irish Sea, landed at Portaferry (Gotto, 1955).

Marine, parasitic on rays, e.g., *Raja montagui* Fowler, *R. fullonica* L., *R. radiata* Donovan (Kabata, 1979).

Salmincola gordonii Gurney, 1933

Galway: Rivers Corrib and Abbert (Conneely and McCarthy, 1984); Ireland: Ireland (Fryer, 1982).

Freshwater, parasitic in gill chamber of trout *Salmo trutta* (Fryer, 1982; Kabata, 1992).

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Salmincola salmoneus (L., 1758)

(= *Lernaeopoda salmonea* (L., 1758))

Galway: Corrib catchment area (Conneely and McCarthy, 1984); several specimens, Roundstone Bay, *in situ* on gill of *Salmo salar*, date and collector unknown (NMI); **Meath:** River Blackwater (O'Riordan, 1966b); **Ireland:** north of Ireland (W. Thompson, 1856, as *Brachiella salmonea* Templeton) - both Pearson (1905) and Scott and Scott (1913) interpreted this record as *Lernaeopoda salmonea*; widespread in Ireland (Kane, 1966); Ireland (O'Riordan, 1966b; Kennedy, 1974).

Marine and freshwater, attached to the gills of salmon *Salmo salar* (Scott and Scott, 1913).

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