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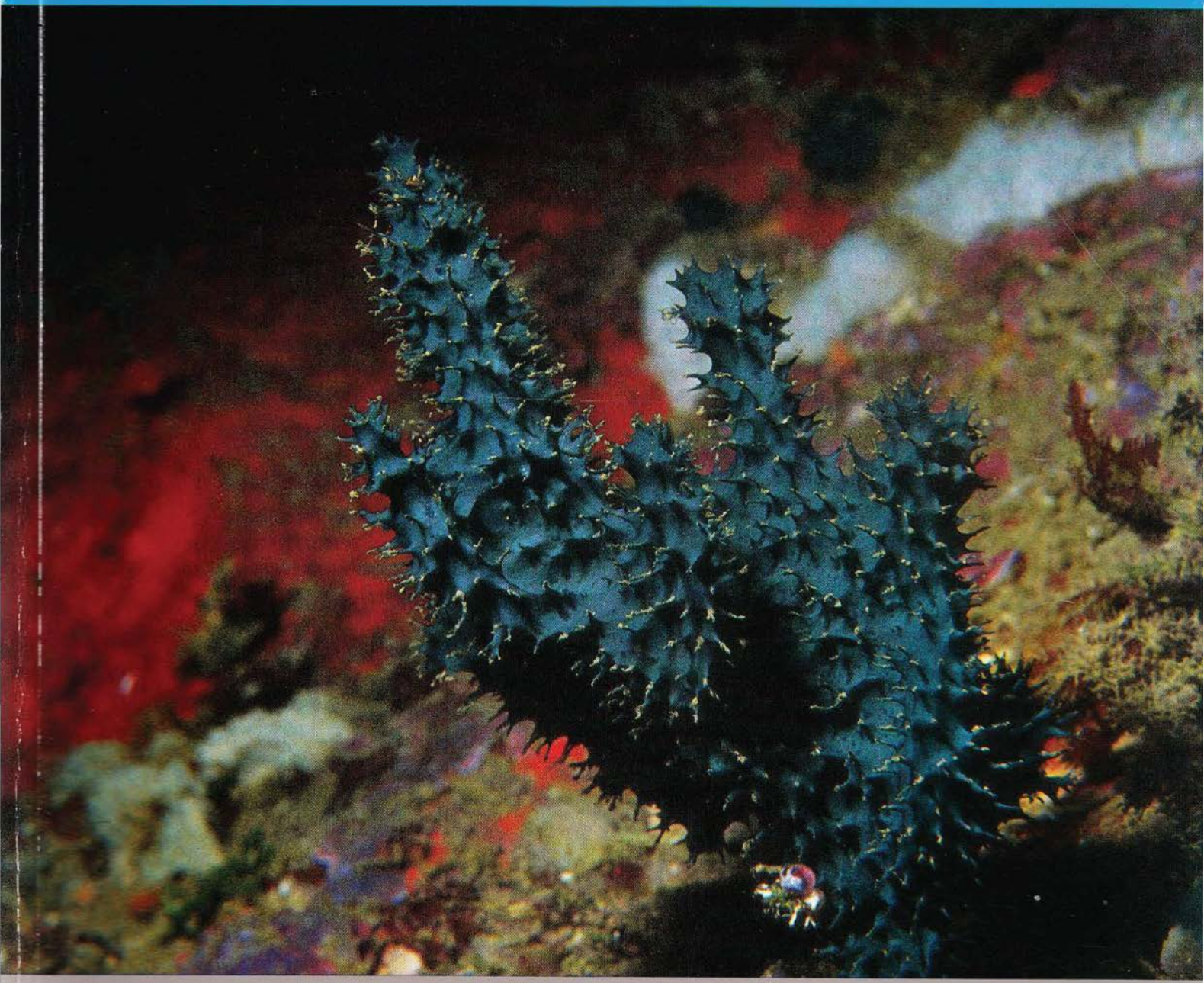

The Marine Fauna of New Zealand:

Index to the Fauna: 2. Porifera

Elliot W. Dawson

New Zealand Oceanographic Institute Memoir 100

COVER PHOTO. *Dictyodendrilla* cf. *cavernosa* (Lendenfeld, 1883) (type species of *Dictyodendrilla* Bergquist, 1980) (see page 24), from NZOI Stn I827, near Rikoriko Cave entrance, Poor Knights Islands Marine Reserve. Photo: Ken Grange, NZOI.

NATIONAL INSTITUTE OF
WATER AND ATMOSPHERIC RESEARCH

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by

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N.Z. Oceanographic Institute, Wellington

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The Marine Fauna of New Zealand: Index to the Fauna 2. Porifera

ELLIOT W. DAWSON*

ABSTRACT

A list of all marine Porifera recorded from the New Zealand region is given, with the bibliographic citation for each original description followed by significant subsequent references. A generic and specific index, with some common synonymy, provide entry into the literature published on each taxon.

INTRODUCTION

This volume is the second in a series listing the recorded species of marine invertebrates in New Zealand waters. The first volume, dealing with the Protozoa (Dawson 1992), gives the background to this undertaking.

The first attempt to enumerate the fauna of New Zealand was made in John Edward Gray's chapter "Fauna of New Zealand" in Dieffenbach's "Travels in New Zealand" (1843). In his total he included only three sponges. Gray probably had no doubt that he, and his colleagues at the British Museum who had also contributed to the compilation of this chapter in "Dieffenbach", had a daunting challenge in attempting to collect and catalogue the fauna of a new country, but they could scarcely have envisaged the development of systematic zoology in New Zealand over the years which have followed; and the work of description of New Zealand's biodiversity is far from complete.

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The challenge to continue describing and cataloguing the New Zealand fauna was taken up by that indefatigable pioneer naturalist F.W. Hutton, former soldier, veteran of the Crimea and the Indian Mutiny, one-time flax farmer, Assistant Geologist in the Geological Survey (1871–1877), Professor of Natural Science at Otago University (1877–1880), and Curator of the Otago Museum, later Professor of Geology and Biology at Canterbury College (now the University of Canterbury) from 1880 to 1892, and subsequently Curator [i.e., Director] of the Canterbury Museum from 1893 until the time of his death in 1905. Under the auspices of the Colonial Museum and Geological Survey of New Zealand, he catalogued the birds in 1871, the fishes (with James Hector) in 1872, the Echinodermata in 1872, molluscs, brachiopods, bryozoans and tunicates in 1873 (with another edition in 1880), Tertiary molluscs, echinoderms, and brachiopods in 1873, and several groups of insects (Diptera, Orthoptera and Hymenoptera) in 1881. The Crustacea were catalogued in a similar fashion by Miers in 1876 following Gray's tradition at the British Museum. Details of these catalogues have been given by Yaldwyn (1982: 5-6). In addition, throughout the

Transactions of the New Zealand Institute from the first volume of 1864 to Volume 38 issued in 1906, Hutton published lists and revisions of many groups of invertebrates ranging from insects and worms to brachiopods and bryozoans (*see* Royal Society of N.Z., 1978 : 65–68).

However, it was not until 1904 that a comprehensive list of the known species making up the fauna of New Zealand appeared. This was the now-classic "Index Faunæ Novæ Zealandiæ", which, although often attributed solely to Hutton (and, indeed, stated by one of his obituarists as his "magnum opus"), consisted of contributions from a number of contemporary biologists. For instance, the section on Mollusca was by Suter, worms by Benham, rotifers by Hilgendorf, Porifera by Kirk, holothurians by Dendy, while Farquhar provided the sections on other echinoderms and on the Hydrozoa. The Crustacea were contributed by Chilton and by Thomson. Hutton's outstanding contribution to the "Index" was, undoubtedly, his biogeographical essay introducing it although much of this had already been published by him in other places.

Kirk's listing of Porifera in Hutton's "Index" included 92 named species or varieties, plus an indication of five additional unnamed species, and comprised only shallow-water forms (and one freshwater species). In 1924, two substantial contributions appeared (Dendy, 1924; Brøndsted, 1924) both reporting on collections made specifically in the New Zealand region, which significantly increased the known numbers of species to 190 (not accounting for synonymies). Bergquist (1983) reviewed the subsequent history of publishing on New Zealand Porifera, noting that, by 1980, some 265 species had been described or recorded from the region (Calcarea 38, Demospongiae 225, Hexactinellida 2), with an additional 90 species of Demospongiae awaiting description. The present compilation lists 354 named species (Calcarea 17, Demospongiae 321, Hexactinellida 16); 123 additional unnamed species are listed — most of these will be synonymous with named species, but many are definitely new.

Within recent years the chemistry of the Porifera has been investigated widely and in considerable detail. This is of special importance not only for documenting rich sources of chemical components with medical and other scientific applications of pharmacognosy and natural product chemistry, but also in elucidating the phylogeny and evolutionary history of the Porifera. Only a selection of papers dealing with sponge chemistry has been included here. Several of these papers mention sponges by generic name only, without further locality data, which may be new records for New Zealand. In other cases, new species are given (e.g., Poiner & Taylor, 1990 for an Australian sponge) without indication as to the authorship and date or whether the name has, in fact, been published elsewhere. Such itinerant names have not been easy to evaluate for inclusion or otherwise in the present Index.

Particular attention should be paid, however, to the following useful summaries — Bergquist & Hogg, 1969: 205–220 (amino acid patterns as a biochemical approach to sponge classification); Harrison & Cowden, 1976 (aspects of sponge biology, especially pp 1–14, introduction to discussion of problems in sponge biology); Evans & Bergquist, 1977: 191–199 (an evaluation of the relevance of acid mucopolysaccharides in sponge taxonomy); Bergquist & Bedford, 1978: 215–221 (systematic and geographic considerations of antibacterial activity in the Demospongiae); Bergquist *et al.*, 1980: 423–435 (sterol composition and the classification of the Demospongiae); Bergquist, 1980a: 383–392 (a helpful review of sponge chemistry); Bergquist & Wells, 1983: 1–50 (review of development of research and current status of chemotaxonomy of the Porifera); Lawson *et al.*, 1984: 375–393 (fatty acid composition and classification of the Porifera); Lee & Gilchrist, 1985: 21–35 (utility of carotenoid patterns as a tool for chemotaxonomy of sponges); Bergquist *et al.*, 1986: 105–112 (sterol composition and classification of sponges); Amade *et al.*, 1987: 271–275 (antimicrobial activities of marine sponges); Bergquist *et al.*, 1991: 17–24 (sterol composition and classification of the Porifera). Further references, especially to more specialised research in chemistry, can be found in the foregoing publications (note also Lawson, 1984). Special mention must be made of the recently published Proceedings of the Third International Conference on the Biology of Sponges [1985] edited by Rützler (1991) in which, of the 70 papers on 9 topics, 5 (dealing with 4 of the topics) are co-authored by the New Zealand sponge researcher P.R. Bergquist (whose contributions to the knowledge of the Porifera, including her uniquely published bibliography of New Zealand sponges (1962), now amount to over 100 papers). Regrettably, the recently published "Atlas" of sponge biology (De Vos *et al.*, 1991) could not be included in the present list.

An historical curiosity included here is the prospectus for a company proposing to commercialise Chatham Island sponges (Hector & Durrand, 1901: cf. Bergquist & Tizard, 1969 for a review of the sponge industry). With the current interest in the Porifera as sources of natural products, we may yet see another such prospectus!

SCOPE AND ARRANGEMENT

This list, largely compiled when I was at the N.Z. Oceanographic Institute, provides a bibliographic introduction to the marine Porifera of the New Zealand region, defined as that part of the South Pacific bounded by latitudes 24°S and 57°30'S and longitudes 157°E and 167°W (Carter, 1980). This includes the Kermadec Islands in the north, the Chatham Islands to the east and Macquarie Island in the southwest; but I have deliberately excluded Lord Howe and Norfolk Islands in the northwest. The depth range includes abyssal collections made by the *Galathea* in the Kermadec Trench.

The classification and systematic arrangement followed is that of Bergquist (1978, 1980b). Because this list is in no way a taxonomic revision, I have not made any judgements on the status or position of any species or families, except where recent revisers have made some comment to which I have felt attention needs to be drawn (cf. Bergquist, 1983 : 54). Generally, I have arranged families, genera within families, and species within genera, in alphabetical order, except where there is a demonstrated phylogenetic reason for doing otherwise.

The basic arrangement that I have given for each species is :

(a) the original bibliographic citation with the original generic name in parentheses if subsequently changed;

(b) significant or useful (perhaps only subjectively determined according to my experience or opinion) subsequent bibliographical references to the species, with changes in generic names noted where appropriate (although the particular authors cited are not necessarily those who proposed the new taxonomic combination);

(c) explanatory or descriptive words in parentheses to indicate the content of the citation (although I have been inconsistent in this);

(d) indication of where reviews, lists of further references and synonymy may be found (as "refs & syn."), or where special comments are given on ecology, distribution etc. by hopefully self-explanatory abbreviations ("distrib.", "ecol." etc.);

(e) full bibliographic references to the authors cited after each major section of the list, or as appropriate; and

(f) an index to genera and species with some (but not complete) indications of synonymy, as a guide for users who find or already know other names, usually from ecological or Hutton-era literature.

I have tried to reduce the number of citations where possible, by quoting references which include bibliographies or literature reviews but, regrettably, some authors' coverages often are inadequate or inaccurate.

Finally, I must state what this list is NOT. It is not a full listing of every reference that has been made to each of the species included; nor does it provide a complete synonymy. In some cases it does provide this information; in some cases, indeed, it lists everything known about a particular species. The user may quickly be able to assess the state of knowledge of some groups by the number of citations and their dates of publication. This, in fact, is one intention of my list. It is still a "working" list of references (which for reasons perhaps not always obvious to the casual user are largely of my own selection). Sometimes mere name changes or listings from faunal survey papers are included simply to highlight the particular nomenclatural combination in use at a certain time, or to draw attention to a published locality which could be of contemporary ecological interest. For cosmopolitan or other species occurring outside New Zealand I have had to be particularly selective, so that what I have given is often just a guide to further reading. My list, then, is a basic bibliographic tool for all users whether taxonomists, ecologists, biogeographers, teachers, or students seeking a point of entry into the marine zoological literature of New Zealand animals. I have not done everything for the beginner, however; in today's age of computer retrieval of information the user may build upon this list by individual on-line search, but I caution, again, that familiarity with the earlier literature, particularly of systematic zoology, still can only be achieved by intimate manual searching of such well-tested favourites as the "Zoological Record" and "Biological Abstracts".

SYSTEMATIC LIST

Subkingdom METAZOA
Phylum PORIFERA
Class DEMOSPONGIAE
Subclass HOMOSCLEROMORPHA

Order HOMOSCLEROPHORIDA
Family HALINIDAE

Genus **Corticellopsis** Bergquist, 1968

Corticellopsis novaezealandiae (Bergquist, 1961)
Bergquist, 1961a: 45, figs 17a-c (*Corticella*); Hogg, 1966: 58 (in key), 60; Bergquist, 1968: 62, text-fig. 29, pl. 15, fig. c.

Corticellopsis sp. Hogg, 1967
Hogg, thesis 1967; Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, 1967).

Family OSCARELLIDAE
Genus **Oscarella** Vosmaer, 1884

Oscarella lobularis (Schmidt, 1862)
Schmidt, 1862: 80 (*Halisarca*); Arndt, 1928: 28, figs 25–26; Burton, 1930c: 331 (? South Georgia); Burton, 1934a: 5 (Greenland, remarks, distrib., refs etc.); Koltun, 1962: 182 (*Oscarella*); Koltun, 1966: 107, pl. 38, figs 1–4 (Okhotsk Sea, Sea of Japan, Kurile Is); George & George, 1979: 14, pl. 1/7; Pritchard, 1984: 125 (family diag.), 136 (listed from the Cape Rodney to Okakari Point Marine Reserve); Uriz & Biblioni, 1984: 8–9 (morphol. etc., incl. *Chondrosia tuberculata* Schmidt, 1862); Uriz, 1986: 14, fig. 43; Hoshino, 1987: 1 (listed from "Japanese waters").

Family PLAKINIDAE
Genus **Plakina** Schulze, 1880

Plakina monolopha Schulze, 1880
Schulze, 1880: 407, pl. XX, figs 1–7, pl. XXIV, figs 22–29; Topsent, 1895: 508; Thiele, 1898: 28, pl. 5, fig. 13, pl. 7, figs 11a-c; Lendenfeld, 1907: 333–336 (incl. n. subsp. *antarctica*), pl. XXV, figs 30–43; Burton, 1929: 414; Burton, 1932b: 262 (refs); Bergquist, 1961a: 47; Koltun, 1964b: 12 (diag., refs); Malone, 1965: 346; Hogg, 1966: 49 (in key), 60; Bergquist, 1968: 62–63 (descr., restrict. syn. etc.), pl. 12, fig. h; Morton & Miller, 1968: 115 (ecol.); Koltun, 1969: 14; Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Evans & Bergquist, 1977: 191–199 *passim* (biochem., taxon.); Bergquist *et al.*, 1977: 179–184 (morphol. of cilia in larvae); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity/signif.); Pritchard, 1984: 136 (listed from the Cape Rodney to Okakari Point Marine Reserve); Uriz & Bibiloni, 1984: 9 (morphol. etc.); Cruz & Bacallado, 1986: 77 *et seq.*; Thomas, 1987 [1983]: 13, 14 (biogeogr.); Hoshino, 1987: 1 (listed from Japan); Tanita, 1989: 12 (descr., figs etc.).

Plakina trilopha Schulze, 1880
Schulze, 1880: 407, 442, 448, pl. XX, figs 1–7, pl. XXII, figs 22–29; Lendenfeld, 1907: 332 (incl. n. subsp. *antarctica*), pl. XXIV, figs 14–33, pl. XXV, figs 1–29; Burton, 1929: 414 (syn.); Burton, 1932b: 262–263 (refs); Bergquist, 1961a: 47; Koltun, 1964b: 12–13, pl. I, figs 10–15 (diag., refs); Bergquist, 1968: 63 (descr. etc.), pl. 12, fig. 9; Koltun, 1969: 14 (Antarct. distrib.), pl. 3, map 3; Bergquist *et al.*, 1970: 267 (reprod. adapts); Desqueyroux, 1972: 10–11 (diag., distrib.), figs 1–7; Boury-Esnault, 1973: 267, fig. 2; Vacelet *et al.*, 1976: 12–13 (descr., distrib. etc.), figs 1a-c; Vacelet & Donadey, 1977: 305, fig. 7 (assoc. with bacteria); Donadey, 1978: 519–521, figs (choanocytes, water currents etc.); Boury-Esnault & Van Beveren, 1982: 17–19; Uriz & Bibiloni, 1984: 9–10 (morphol.), fig. 1; Cruz & Bacallado, 1986: 77 *et seq.*; Lévi & Lévi, 1989: 43 (descr. etc.), text-fig. 11.

Subclass TETRACTINOMORPHA
Order CHORISTIDA

Family GEODIIDAE
Genus **Erylus** Gray, 1867

Erylus nigra Bergquist, 1968
Bergquist, 1968: 55–56, text-fig. 25, pl. 9, fig. c, pl. 12, fig. f.

Genus **Geodia** Lamarck, 1815

Geodia regina Dendy, 1924
Dendy, 1924: 308–311, pl. V, fig. 5, pl. VIII, figs 16–22; Brøndsted, 1924: 440–441; Bergquist, 1968: 56, 58 (descr. etc.), pl. 9, fig. a, pl. 14, fig. j; Morton & Miller, 1968: 115; cf. Doak, 1979: pl. 2 (col.) (as *G.*

sp.); Pritchard, 1984: 118 (descr., habitat, distrib. etc.), fig. on p. 119, 136 (listed from Cape Rodney to Okakari Point Marine Reserve).

Geodia rex Dendy, 1924

Dendy, 1924: 311–312, pl. VI, fig. 4, pl. VII, figs 23–28; Bergquist, 1968: 58.

Geodia n.sp. Evans & Bergquist, 1977

Evans & Bergquist, 1977: 191–199 (biochem./ taxon.).

Genus **Geodinella** Lendenfeld, 1903

Geodinella vestigifera Dendy, 1924

Dendy, 1924: 313–314, pl. VII, figs 29–37; Brøndsted, 1924: 441; Burton, 1929: 417–418; Koltun, 1964: 19 (diag.); Bergquist, 1968: 58–59 (descr., etc.), text-fig. 26, pl. 10, figs b, d, pl. 15, fig. a; Koltun, 1969: 14.

Genus **Rhabdastrella** Thiele, 1903

Rhabdastrella aurora (Hentschel, 1909)

Hentschel, 1909: 361, figs 5–6 (*Stelletta*), 367, fig. 7 (as var. *arenosa*); Bergquist, 1968: 54–55, pl. 9, fig. d (first N.Z. records from NZOI Stns B233, B270, Foveaux Strait).

Family JASPIDAE
[Epipolasidae]
Genus **Asteropus** Sollas, 1888

Asteropus simplex Carter, 1879

Carter, 1879: 349, pl. XXVIII, figs 16–18 (*Stellettinopsis*); Sollas, 1888: 205 (*Asteropus*); Dendy, 1905: 109, pl. V, fig. 3 (as *Asteropus haeckeli*); Hentschel, 1909: 369; Dendy, 1916a: 25, pl. 46, fig. 6; Dendy, 1916b: 98–99 (descr., distrib. etc., refs & syn.); Dendy, 1924: 306–307 ("Terra Nova" Stn 96, E of North Cape); Wilson, 1925: 327–329, pl. 38, fig. 4; de Laubenfels, 1936: 160 (*Stellettinopsis*); Bergquist, 1965: 190 (footnote); Lévi, 1967: 15 (*Asteropus*), text-fig. 1 (New Caledonia); Bergquist, 1968: 32–33 (descr. etc.), pl. 4, fig. b, pl. 11, fig. d; Bergquist, 1969: 71 (features etc.); Tanita, 1970a: 90, text-fig. 3, pl. 2, fig. 21 (Japan); Boury-Esnault, 1973: 263, fig. 14; Dawson, 1979: 23; Soest, 1981: 86 (descr. etc.), fig. 2; Rho & Sim, 1981: 57, pl. 5, figs 1–4; Kay & Cannon, 1984: 22 (descr.), fig. 11.3; Hoshino, 1987a: 7 (listed from Japan); Soest & Stentoft, 1988: 31–32 (descr., etc.), text-fig. 13, pl. IV, fig. 6; Tanita, 1989: 37 (descr., figs etc.).

Genus **Jaspis** Gray, 1867

Jaspis novaezealandiae Dendy, 1924

Dendy, 1924: 305, pl. VII, figs 20–23; Burton, 1929: 415; de Laubenfels, 1954: 228 (*Dorypleres*); Bergquist, 1968: 14, 33 (generic placing etc.).

Jaspis sp. Pritchard, 1984

Pritchard, 1984: 136 (listed from the Cape Rodney to Okakari Point Marine Reserve).

Family PACHASTRELLIDAE
Genus **Pachastrella** Schmidt, 1868

Pachastrella incrustata Bergquist, 1968

Bergquist, 1968: 60–61, text-fig. 28, pl. 15; Dawson, 1979: 24 (type data).

Family SOLLASELLIDAE
Genus **Epipolasis** de Laubenfels, 1936

Epipolasis novaezealandiae (Dendy, 1924)

Dendy, 1924: 307–308 (*Spongosorites*) (in part); de Laubenfels, 1936: 162 (*Epipolasis*); Bergquist, 1968: 33–35 (descr., discuss.), text-fig. 11, pl. 5, fig. c; Dawson, 1979: 23.

Family STELLETTIDAE
Genus **Ancorina** Schmidt, 1862

Ancorina acervus Bowerbank, 1862

Bowerbank, 1862: 1101, pl. XXIII, fig. 1 (*Ecionemia*); Bergquist, 1965: 191–194 (descr., refs & syn.), text-figs 31a-c, table 15 (Palau Is); Bergquist, 1968: 38, 40 (discuss., refs & restrict. syn.).

Ancorina alata Dendy, 1924

Dendy, 1924: 298–300, pl. V, figs 1–2, pl. VIII, figs 1–7 (*A. alata*) ("Terra Nova" Stn 96, E of North Cape), 301–303, pl. VIII, figs 8–15b (as *A. novaezealandiae*) ("Terra Nova" Stn 90, off Three Kings Is), 300–301 (as *A. osculifera*) ("Terra Nova" Stn 96); Brøndsted, 1924: 439–440; Hogg, 1966: 59 (in key) 60; Hogg, thesis 1967: table 5.2 (descr. and ecol. notes); Bergquist, 1968: 38 (descr. etc.), text-fig. 12, pl. 5, fig. d, pl. 5, fig. a, pl. 13, figs f, g; Morton & Chapman, 1968: 23, 28 (habitat at Leigh); Morton & Miller, 1968: 107, 115, 573 (ecol. etc.), pl. 6 (col.); Bergquist *et al.*, 1970: 267

(reprod. adapts); Doak, 1971: pl. 7 (col.), text-fig. 8 (= explanation of plate); Grace, 1972: 59, 61, fig. 2 (zonation etc. Red Mercury Is, NE N.Z.); Ballantine *et al.*, 1973: 17, 30, fig. on p. 19, fig. 4; Ayling, 1974: 625 (habitat); Doak, 1974: 669 (habitat); Gordon & Ballantine, 1977: 16, 22 (habitat), 99 (listed from Leigh region after Hogg, thesis 1967): Grace & Puch, 1977: 62 (Moturoa Is, NE N.Z.); Evans & Bergquist, 1977: 191–199 (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Ayling, 1978: 9, 1 fig. (Cape Rodney to Okakari Marine Reserve : deep reef habitat), 9, fig. (sediment-covered rock flat), % cover/habitat – 51 (on permanent buoy open rocks), 52 (on permanent buoy *Ecklonia* forest), 61 (in isolated quadrats); Doak, 1979: pl. 7 (col.); Riddell, 1980: 93 (table 1, Mokohinau Is); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification); Dell, 1981: 71, pl. 29 (col.); Liaaen-Jensen *et al.*, 1982: 167–174 (carotenoids); Grace, 1983: 104 (in "Deep Zone" [30-45 m], see fig. 7, Hauraki Gulf); Pritchard, 1984: 108 (descr., habitat, distrib. etc.), 136 (listed from Cape Rodney to Okakari Point Marine Reserve), fig. on p. 109; Bradstock, 1985: 105, b. & w. fig., col. pl.; Watson, 1991: 11 (as habitat for species of *Maurea* (Gastropoda)).

Ancorina progressa Lendenfeld, 1907

Lendenfeld, 1907: 259; Dendy, 1924: 297 (as *A. progressa* var. *diplococcus*) ("Terra Nova" Stn 90, off Three Kings Is); Bergquist, 1968: 40–41.

Ancorina stalagmoides Dendy, 1924

Dendy, 1924: 297–298, pl. III, fig. 4, pl. VII, figs 12–15.

Ancorina sp. Pritchard, 1984

Pritchard, 1984 : 136 (listed from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Monosyringia** Brøndsted, 1924

Monosyringia calcifera Bergquist, 1968

Bergquist, 1968: 42–43, text-figs 14–15, pl. 14, fig. a; Dawson, 1979: 23 (type data).

Monosyringia mortenseni Brøndsted, 1924

Brøndsted, 1924: 442–444, text-figs 4a-g; Bergquist, 1968: 43–44 (descr. etc.), pl. 6, fig. d, pl. 14, fig. b; Koltun, 1969: 14, pl. 4, map 8 (Antarct. distrib.); Koltun, 1970a: 289–295.

Genus **Penares** Gray, 1867

Penares tylotaster Dendy, 1924

Dendy, 1924: 303–305, pl. VII, figs 16–19; Brøndsted, 1924: 440; Burton, 1929: 415; Bergquist, 1961b: 198; Koltun, 1964b: 14–15 (diag.); Bergquist, 1968: 41 (descr. etc.), text-fig. 13, pl. 6, fig. b; Koltun, 1969: 14 (Antarctic); Bergquist *et al.*, 1970: 267 (reprod. adapts); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis 1967); Pritchard, 1984: 136 (listed from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Stelletta** Schmidt, 1862

Stelletta arenaria Bergquist, 1968

Bergquist, 1968: 45, pl. 7, fig. b, pl. 12, fig. e; Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis 1967); Bergquist, 1978 : 131 (buds); Pritchard, 1984: 136 (listed from the Cape Rodney to Okakari Point Marine Reserve).

Stelletta communis (Sollas, 1886)

Sollas, 1886b: 191 (*Anthastra*); Sollas, 1888: 140, pl. XII, figs 1–29, pl. XX, figs 20–27 (*A. communis*), 145, pl. XIII, figs 30–40, pl. XIV, figs 1–2 (as *A. parvispicula*); Lendenfeld, 1903: 42 (*Stelletta*); Bergquist, 1968: 49 (refs & syn. etc.), text-fig. 20.

Stelletta **conulosa** Bergquist, 1968

Bergquist, 1968: 49–50, 53, text-figs 21-22, pl. 8, fig. b, pl. 14, fig. h; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Ayling, 1978: 51 (Cape Rodney to Okakari Marine Reserve, % coverage, permanent buoy, open rocks), 52 (permanent buoy *Ecklonia* forest), 61 (in isolated quadrants); Pritchard, 1984: 110 (descr., habitat, distrib.), 136 (listed from the Cape Rodney to Okakari Point Marine Reserve), fig. on p. 111.

Stelletta **crater** Dendy, 1924

Dendy, 1924: 292–294, pl. IX, fig. 5, pl. VII, figs 5–7; Burton, 1929: 415; Koltun, 1964: 13 (diag.); Bergquist, 1968: 44–45 (descr. etc.), pl. 7, figs a, d, pl. 12, figs c-d; Koltun, 1969: 14; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Grace, 1983: 104 (in "Deep Zone" [30–45 m], see fig. 7, Hauraki Gulf); Pritchard, 1984: 112 (descr., habitat etc.), 136 (listed from the Cape Rodney to Okakari Point Marine Reserve), fig. on p. 113.

Stelleta lithodes Bergquist, 1968

Bergquist, 1968: 46–49, text-figs 18–19, pl. 8, fig. c, pl. 14, fig. c.

Stelletta maori Dendy, 1924

Dendy, 1924: 290–291, pl. VII, figs 8–11 (*S. maori*), 291 (as var. *bistellata)*; Burton, 1929: 414-415, text-fig. 3 (incl. var. *bistellata* Dendy and *S. sandalinum* Brøndsted, 1924); Koltun, 1964: 13–14 (diag.); Bergquist, 1968: 50–53 (descr. etc.), text-figs 23, pl. 8, fig. a, pl. 14, fig. f, pl. 15, fig. f; Koltun, 1969: 14; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Grange *et al.*, 1981: 223 (Fiordland biol.); Pritchard, 1984: 114 (descr. etc.), 136 (listed from the Cape Rodney to Okakari Point Marine Reserve), fig. on p. 115.

Stelletta maxima Thiele, 1898

Thiele, 1898: 15, pl. I, fig. 8, pl. VII, figs 3a-f; Dendy, 1924: 294–296, pl. V, fig. 4, pl. VII, figs 1-4 (as *S. columna*) ("Terra Nova" Stn 96, E of North Cape); Bergquist, 1968: 46 (descr., etc.), text-fig. 17, pl. 8, fig. d, pl. 12, fig. b; Hoshino, 1981b: 246, text-fig. 31 (Japan); Tanita, 1989: 17 (descr., figs etc.).

Stelletta novaezealandiae Brøndsted, 1924

Brøndsted, 1924: 436-438, figs 2a-e; Bergquist, 1961b: 199, figs 18a-b; Bergquist, 1968: 52, 53, pl. 14, fig. d.

Stelletta purpurea Ridley, 1884

Ridley, 1884: 473, pl. XL, fig. E, pl. XLIII, figs J–S (as *S. purpurea* var. *retroflexa*), 627 (as *S. purpurea* var. *parvistella*); Sollas, 1886: 190 (*Pilochrota purpurea*), 190 (as *P. longancora*); Brøndsted, 1924: 437, figs 1a-e (as *Myriastra biformis*); Burton, 1926: 44-49 (var. and syn.); Burton 1929: 415 (incl. *Myriastra biformis* Brøndsted, 1924); Burton, 1934b: 521; de Laubenfels, 1954: 239–244 (syn. etc.), figs 164a-d (*Myriastra*); Lévi, 1958: 9 (*Myriastra*), figs 5a-d; Burton 1959: 192; Bergquist, 1961b: 201 (*Myriastra*), figs 19a-b; Koltun, 1964b: 14 (diag., distrib.); Lévi, 1965: 7, fig. 4; Bergquist, 1968: 45 (descr. etc.), text-fig. 16, pl. 7, fig. c; Tendal, 1969: 32–33 (descr. etc.); Gordon & Ballantine, 1977: 99 (listed from Leigh region).

Stelletta sandalinum Brøndsted, 1924

Brøndsted, 1924: 438-439, figs 3a-e; Burton 1929: 414 (transf. to *S. maori* Dendy, 1924); Koltun, 1964b: 13–14 (incl. in *S. maori* Dendy); Bergquist, 1968: 52–53 (descr. etc.), text-fig. 24, pl. 9, fig. e, pl. 14, fig. c; Pritchard, 1984: 116 (descr., habitat etc.), 136 (listed from the Cape Rodney to Okakari Point Marine Reserve), fig. on p. 117.

Family THENEIDAE
Genus **Thenea** Gray, 1867

Thenea novaezealandiae Bergquist, 1961

Bergquist, 1961b: 197, figs 17a-d; Bergquist, 1968: 41 (descr. etc.), pl. 6, fig. c, pl. 12, fig. a; Bergquist, 1978: fig. 5.8c (spicule components).

Thenea wrighti Sollas, 1886

Sollas, 1886b: 185; Sollas, 1888: 63–65, 78, pl. VIII, figs 11–20; Lévi, 1964: 66-67, pl. III, figs A–E ("Galathea" Stn 626, Tasman Sea); cf. Steenstrup & Tendal, 1982: 249–268 (examination of N. Atlantic spp. of *Thenea*).

Order SPIROPHORIDA
Family TETILLIDAE
Genus **Cinachyra** Sollas, 1886

Cinachyra novaezelandiae Brøndsted, 1924

Brøndsted, 1924: 445-447, figs 5a-f; Bergquist, 1968: 60 (remarks).

Cinachyra uteoides Dendy, 1924

Dendy, 1924: 318–320, pl. X, fig. 4; Bergquist, 1968: 60 (descr. etc.), pl. 10, fig. c, pl. 15, fig. 3; Ayling, 1978: 6, fig. (Cape Rodney to Okakari Point Marine Reserve habitats, in "sponge garden"), 62 (% cover in isolated quadrats).

Cinachyra n.sp. Bergquist & Bedford, 1978

Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif., notes — this is an undescr. benthic sp. from lat. 36°S); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification).

Cinachyra sp. Gordon & Ballantine, 1977/Pritchard, 1984

Gordon & Ballantine, 1977: 99 (listed from Leigh region following record of Avril L. Watson); Pritchard, 1984: 104 (descr., habitat), 135 (listed from the Cape Rodney to Okakari Point Marine Reserve), fig. on p. 105.

Genus **Craniellopsis** Topsent, 1913

Craniellopsis zetlandica (Carter, 1872)

Carter, 1872: 417-433 (reprod., develop. etc.), pl. XXII, figs 1-6, 13–17 (*Tethya*); Bowerbank, 1882: 39 (incl. in *Tethya cranium* Lamarck); Sollas, 1888: 55 (*Craniella zetlandica*, and *C. simillina* Bowerbank); Lendenfeld, 1903: 36 (*Tethyopsilla*) (syn.); Topsent,

1913a: 14, pl. II, fig. 10 (*Craniellopsis*); Dendy, 1924: 318 (*Craniella*) (syn.); Burton, 1930a: 490-491 (geogr. and bathymetric distrib., as *Tetilla*); de Laubenfels, 1936: 171 (*Craniellopsis*); Bergquist, 1968: 59 (distrib., restr. syn.).

Genus **Tetilla** Schmidt, 1868

Tetilla australe Bergquist, 1968

Bergquist, 1968: 59–60, text-fig. 27, pl. 9, fig. b, pl. 15, fig. d; Bergquist, 1978: 111 (viviparous develop.); Dawson, 1979: 24 (type data); Rho & Sim, 1979: 25 (Korea); Hoshino, 1987: 9 (listed).

* Order LITHISTIDA
Suborder RHABDOSINA
Family SCLERITODERMIDAE

Genus **Aciculites** Schmidt, 1879

Aciculites pulchra Dendy, 1924

Dendy, 1924: 315–316, pl. VI, figs 1–1a; Bergquist, 1968: 63–64 (descr. etc.), text-fig. 30, pl. 10, fig. a; Doak, 1971: pl. 15 (col.).

Suborder TRIAENOSINA
Family THEONELLIDAE
Genus **Lepidothenea** de Laubenfels, 1936

Lepidothenea incrustans (Dendy, 1924)

Dendy, 1924: 317, pl. XIII, figs 1–3 (*Lepidospongia*); de Laubenfels, 1936: 175 (*Lepidothenea*); Bergquist, 1968: 64.

Order HADROMERIDA
Family CLIONIDAE
Genus **Cliona** Grant, 1826

Cliona celata Grant, 1826

Grant, 1826a: 78; Johnston, 1842: 125; Hancock, 1849: 321 *et seq.*, 332–333 (descr.), pl. XII, figs 1–2, pl. XIII, figs 3–4; Bowerbank, 1866: 212; Hancock, 1867: 230–232, 237 (descr.), pl. VII, fig. 7; Bowerbank, 1874: 95, pl. XXXVIII, figs 5–6 (*Hymeniacidon*); Carter, 1886c: 458; Dendy, 1897: 250–251; Topsent, 1900: 32 (distrib., refs & syn.), pl. I, figs 5–6, 9, pl. II, fig. 1; Dendy, 1921: 147; Arndt, 1935: 44 (syn.), fig. 74; Volz, 1939: 4–8, text-fig. 1, pl. 1, figs 1–2, pl. 2, fig. 3; Hartman, 1958: 16 (syn.), pl. I, figs 1–4; Warburton, 1958a: 123–124 (relationship to *C. lobata* Hancock); Warburton, 1958b: 493-494 (reprod. of fused larvae); Bergquist, 1961a: 44; Bergquist, 1961b: 190, figs 14a-c; de Laubenfels, 1961: 200; Hopkins, 1962: 121–124 (ecol., refs); Silén, 1963: 269–288 (parasitic copepod); Dragovich & Kelly, 1964: 78 (ecol.); Rützler, 1965: 21–22; Hogg, 1966: 57 (in key); Emson, 1966: 805–827; Murname, 1967: 225–232 (assoc. with copepods); Bergquist, 1968: 29–30 (descr., N.Z. records, restrict. syn.), pl. 4, fig. 6; Morton & Chapman, 1968: 28 (habitat at Leigh); Morton & Miller, 1968: 114, 273, 410, 571, 573 (ecol. etc.), fig. 213, pl. 5 (ecol.); Rho *et al.*, 1969: 156, text-fig. 2, pl. 1, fig. 5 (Korea); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Juniper & Steele, 1969: 159; MacLennan, 1970: 229–234 *passim* (cellular reaggr.); Humphreys, 1970: 325 *et seq.* (biochem); Hoshino, 1971: 23 (Japan); Doak, 1971: pl. 13 (col.); Cobb, 1972: 5531–5532 (penetration analysis); Sarà, 1972: 72; Rho & Sim, 1972: 184 (as *C. concharum*); Erdman & Thomson, 1972: 5163–5173; Boury-Esnault, 1973: 275, fig. 19; Rützler, 1973: 624–625 (descr., remarks), text-fig. 1 (spicules); Bromley & Tendal, 1973: 151–155 (phobotropism, competition etc.), pls I–II; Tendal, 1973a: 105–108 (shell boring); Rasmussen, 1973: 15; Thomas, 1973: 60–61 (descr. etc.), pl. III, fig. 10; Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement, refs); Grace & Whitten, 1974: 12 (in benthic community Slipper Is, N.Z.); Turner *et al.*, 1974: 35–51 *passim* (cell reaggr.); Fütterer, 1974: 79–84 m, figs 1–3 (geol. signif.); Tendal, 1974: 29–36, figs (shell boring); Ayling, 1974a: 622–623 (habitat); Cobb, 1975: 195–202, 2 pls (ultrastructure of burrow); Hatch, 1975: 5757 (penetration biochem); Nicol & Reisman, 1976: 1–7 (ecol.); Pomponi, 1976: 569–576 (ultrastructure); Hoshino, 1976: 7; Guida, 1976: 109–172, fig. 1 (predation in oyster reef); Gordon & Ballantine, 1977: 16, 99 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: 183 (larval responses, 184 (substrate selection), pl. 106: Algarswami & Chellam, 1978: 10–22 *passim* (as pearl-oyster borer); Comeley, 1978: 167–193 *passim* (as borer in the bivalve *Modiolus*); Doak, 1979: pl. II (col.); Ritchie *et al.*, 1979: 50 (listed from Poor Knights Reserve); Litchfield *et al.*, 1979: 619–622 (fatty acids extraction); George & George, 1979: 15, fig. 411; Thomas, 1980: 11 (descr. etc.), fig. 1m; Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol

* Note Lithistid *incertae sedis* of Pritchard, 1984: 122 (descr., habitat etc., outer sponge garden, Leigh), 136 (listed), fig. on p. 123.

composition/classification); Riddell, 1980: 95 (Mokohinau Is); Rainer, 1981: 22, 35 (in soft-bottom benthic community, Otago); Grange *et al.*, 1981: 223 (fiord biol.); Westerskov & Probert, 1981: 108, fig. 83, pl. 19 (col.); Ritchie *in* Tortell, 1981: 11 (algal-forest habitat, as *Chiona* [sic]); Hoshino, 1981: 233, text-fig. 21 (Japan); Amade *et al.*, 1982: 223–228 (anti-microbial extracts), tables 2–3; Hoeksma, 1983: 55–85, text-figs 1–6, pls 1–5; Kozloff, 1983: pl. 1 (col.); Grace, 1983: 4 (in "Deep Zone" [i.e., 30–45 m], see fig. 7, Hauraki Gulf); Kotua-Dickson, 1984: 10 (listed from Motukawao Is, Coromandel Peninsula), figs 4–5 (in shore profiles); Fell *et al.*, 1984: 127–141 *passim* (life history/larval settlement/echinoid predation); Baxter, 1984: 728–729 (incidence of limpet shell boring); Pritchard, 1984: 90 (descr., habitat, distrib.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve), fig. on p. 91; Akpan & Farrow, 1985: 139–150 (mollusc shell bioerosion); Dembitsky & Chelomin, 1985: 55 (lipids); Bradstock, 1985: 106, b. & w. fig., col. pl. (N.Z.); Young & Nelson, 1985: 33–45 (habitat/substrate/bioerosion of molluscs); Sharma *et al.*, 1985: 241–248 (protein content); Uriz, 1986: 16 (in key etc.); Rützler & Stone, 1986: 658 *et seq.*; Hoshino, 1987a: 14 (listed from "Japanese" waters); Wendt *et al.*, 1986: 187–203 (assoc. fauna); Thomas *et al.*, 1986: 1–13 *passim*; Corriero *et al.*, 1989: 73–77.

Cliona euryphylla Topsent, 1887

Topsent, 1887: 82; Thiele, 1905: 409 (as *C. chilensis*); Burton, 1940: 118, pl. 6, fig. 5 (as *C. chilensis*); de Laubenfels, 1954: 218, figs 149a-c; Bergquist, 1968: 30 (first N.Z. record, descr., refs etc.), text-fig. 9, pl. 11, fig. a; Doak, 1971: text-fig. 12c (spicules); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Bergquist, 1968).

Cliona muscoides Hancock, 1849

Hancock, 1849: 335–336, pl. XV, fig. 11; Bergquist, 1961b: 44–45.

Cliona vastifica Hancock, 1849

Hancock, 1849: 342, pl. XV, fig. 12; Hancock, 1867: 231, 234, 237–238 (descr.), pl. VII, fig. 2; Thiele, 1898: 42, pl. 8, figs 16a-c (Japan); Topsent, 1900: 56–70, pl. 2, figs 3–9; Arndt, 1935: 45 (descr., distrib., refs & syn.), figs 76a-c; Volz, 1939: 8–12, text-fig. 2, pl. 1, fig. 3, pl. 2, fig. 3, pl. 3, fig. 1; Hartman, 1958b: 21 (refs & syn.), fig. 5; Lévi, 1958: 17, fig. 12; Warburton, 1958a: 124; Little, 1963: 57; Hartman, 1964: 3, pl. 1, fig. 5; Rützler, 1965: 22; Koltun, 1966: 104, text-fig. 77; Hogg, 1966: 57 (in key); Hopkins, 1962: 121–124 (ecol., refs); Tendal, 1973a: 105–108 (mollusc an host); Rützler, 1973: 633–634 (descr. etc.), text-fig. 6 (spicules); Thomas, 1973: 61 (descr., refs), pl. III, fig. 11; Tendal, 1974: 29–36 (shell boring); cf. Rützler, 1974: 1 *et seq.*, 23–24 (distinguishing features etc.); Krakatitsa & Kaminskaya, 1979: 15–19 (in oyster beds) [English transl. 469–473]; Hoshino, 1981b: 234, text-fig. 22 (Japan); Thomas *et al.*, 1986: 1–13 *passim*, fig. 5; Hoshino, 1987a: 15 (listed from "Japanese" waters).

Family LATRUNCULIIDAE
Genus **Latrunculia** du Bocage, 1869

Latrunculia brevis Ridley & Dendy, 1886

Ridley & Dendy, 1886: 492 (as *L. brevis*), 492 (as *L. Bocagei*, n.sp.); Ridley & Dendy, 1887: 236–237, 250, 257, 259, pl. XLIV, fig. 5, pl. XLV, figs 10–10a (*L. brevis*), 237–239, 244–245, pl. XLIV, fig. 1, pl. XLV, figs 8-8a (as *L. bocagei* Ridley & Dendy, 1886); Hentschel, 1914: 44, pl. V, fig. 1 (as *L. lendenfeldi*); Brøndsted, 1924: 480–481, text-figs 33a-e (as *L. spinispiraefera* n.sp.); Bergquist, 1961b: 189, fig. 13 (as *L. spinispiraefera* Brøndsted, 1924); Bergquist, 1968: 17–19 (descr. etc.), text-fig. 2, pl. 1, figs a-b; Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist *et al.*, 1980: tables 1 & 3 (sterol composition/classification); Grange *et al.*, 1981: 220, 223 (fiord biol.); Boury-Esnault & van Beveren, 1982: 44; Lawson *et al.*, 1984: 375–393, tables 2, 4, 5 (fatty acids composition/sponge classification etc.); Perry *et al.*, 1986: 5476–5478 (cytotoxic pigment extraction); Perry *et al.*, 1987: 307–308 (trimethylguamine extract from Otago Peninsula material, 150 m, voucher specimen J026–2 in University of Canterbury Chemistry Department); Capon *et al.*, 1987: 339–342 (chemistry, cylic peroxides extraction); Perry *et al.*, 1988: 4127–4128 (antitumor alkaloid extraction); Uriz, 1988: 49 (descr., distrib., syn. etc. incl. *L. spinispiraefera* Bergquist, 1961), text-fig. 25, pl. 12a, pl. 32, figs c-d; Butler & Capon, 1991: 77–85 (chemistry, norterpene dienes isolated).

Family POLYMASTIIDAE
Genus **Polymastia** Bowerbank, 1864

Polymastia conigera Bowerbank, 1874

Bowerbank, 1874: 192, pl. LXXII; Dendy, 1921: 150–151, 180; Dendy, 1924: 381 ("Terra Nova" Stn 90, Three Kings Is); Arndt, 1935: 32; Bergquist, 1968: 21–22 (descr., refs etc.), text-fig. 5, pl. 2, fig. d; Dawson, 1979: 24.

Polymastia corticata Ridley & Dendy, 1886

Ridley & Dendy, 1886: 487; Ridley & Dendy, 1887: 211–212, pl. XLII, figs 4, 5a-c, pl. XLIV, fig. 3; Gordon & Ballantine, 1977: 99 (listed from Leigh region after Bergquist, thesis 1961).

Polymastia fusca Bergquist, 1961

Bergquist, 1961a: 43–44, figs 16a-b; Bergquist, 1968: 22–23 (descr. etc.), pl. 2, fig. a; Morton & Miller, 1968: 271, pl. 5 (ecol.); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Bergquist, 1968); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Ayling, 1978: 9, 1 fig. (Cape Rodney to Okakari Point Marine Reserve, sediment-covered rock, % coverage/habitat), 51 (open rock), 52 (*Ecklonia* forests), 58 (isolated rock flats), 61 (isolated quadrats); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/sponge classification); Liaaen-Jensen *et al.*, 1982: 167–174 (carotenoids); Grace, 1983: 104 (in "Deep Zone" [i.e., 30–45 m], see fig. 7, Hauraki Gulf); Pritchard, 1984: 92 (descr., habitat etc.), 93 (fig.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics, material from Maori Bay, West Auckland);

Polymastia granulosa Brøndsted, 1923

Brøndsted, 1923: 162–164, figs 36a-c; Bergquist, 1961a: 44; Hogg, 1966: 58 (in key), 61 (listed from Auckland area); Bergquist, 1968: 23 (descr., distrib. etc.), frontis. (col.), pl. 2, figs 2b, d-e; Morton & Miller, 1968: 66, 274, pl. 5 (col.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 267 (reprod. adapts); Doak, 1971: pl. 12D (col.); Grace, 1972: 59, 61, fig. 2 (zonation etc., Red Mercury Is); Ballantine *et al.*, 1973: 17, 21, 30, figs 2, 4, and on p. 17 (Mimiwhangata survey); Ayling, 1974: 625 (habitat); Willan, 1976: 42 (assoc. at Leigh with gastropod *Lyrosella chathamensis*); Gordon & Ballantine, 1977: 16 (habitat), 99 (listed from Leigh after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: 111 (develop. after Bergquist *et al.*, 1970); Ayling, 1978: 9, 1 fig. (Cape Rodney to Okakari Point Marine Reserve, habitats, % coverage etc., rock flats), 51 (open rock), 52 (*Ecklonia* forests), 61 (isolated quadrats); Dawson, 1979: 24; Doak, 1979: pl. 4 (col.); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification); Grange *et al.*, 1981: 216, 223 (fiord biol.); Ritchie *in* Tortell, 1981: 11 (algal forest habitat); Liaaen-Jensen *et al.*, 1982: 167–174 (carotenoids); Grace, 1983: 104 (in "Deep Zone" [i.e., 30–45 m], see fig. 7), Hauraki Gulf; Kotua-Dickson, 1984: 10 (listed from Motukawao Is, off Coromandel Peninsula); Pritchard, 1984: 94 (descr., habitat), 95 (fig.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Hertzberg *et al.*, 1986: 801–814, figs 1–2 (carotenoids); Tanita, 1989: 65–66, pl. 7, fig. 5 (descr. etc., Japan); Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics; Maori Bay, West Auckland); Fromont & Bergquist *in* Rützler, 1990: – (structural character/taxon./cladistic analysis).

Polymastia hirsuta Bergquist, 1968

Bergquist, 1968: 23–24, pl. 3, fig. a; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Ayling, 1978: 67 (Cape Rodney to Okakari Point Marine Reserve, habitats, % coverage, isolated quadrats); Pritchard, 1984: 96 (descr., habitat etc.), 97 (fig.), 133 (recorded from Cape Rodney to Okakari Point Marine Reserve); Kotua-Dickson, 1984: 10 (listed from Motukawao Is, Coromandel Peninsula), figs 4–5 (in exposed and sheltered shore profiles).

Polymastia sp. A. Pritchard, 1984 *

Prtichard, 1984: 98 (descr., habitat etc.), 99 (fig.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Polymastia sp. B. Pritchard, 1984 *

Pritchard, 1984: 100 (descr., habitat etc.), 101 (fig.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Polymastia sp. "A". Kelly-Borges *et al.*, 1991 *

Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics; material from Castor Bay, Auckland).

Polymastia sp. "B". Kelly-Borges *et al.*, 1991 *

Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics; material from Mercury Bay Is, east coast).

* These species are being described by Prof. P.R. Bergquist (University of Auckland)

Family SPIRASTRELLIDAE
Genus **Dotonella** Dendy, 1924

Dotonella mirabilis Dendy, 1924

Dendy, 1924: 379–380, pl. XV, figs 43–45; Bergquist, 1968: 17.

Genus **Spirastrella** Schmidt, 1868

Spirastrella spinispirulifera (Carter, 1879)

Carter, 1879: 345, pl. XXVIII, figs 6, 7a-b (*Suberites*); Dendy, 1897: 251 (*Spirastrella*); Topsent, 1918: 557 (*Anthosigmella*); de Laubenfels, 1936: 143 (*Cerbaris*); cf. Fishelson, 1966: 17–23, 5 figs (ecol. of *S. inconstans* Dendy, 1887); Bergquist, 1968: 16–17 (descr., remarks, refs & syn.), text-fig. 1, pl. 11, fig. g; cf. Thomas, 1976b: 646–647, fig. 2f (*S. inconstans* Dendy, descr. etc.); Uriz, 1988: 47 (descr., distrib., syn. etc.), text-fig. 23.

Family SUBERITIDAE

Genus **Pseudosuberites** Topsent, 1896

Pseudosuberites sulcatus (Thiele, 1905)

Thiele, 1905: 417, figs 27, 39 (*Suberites (Pseudosuberites)*), 417, figs 26, 40 (as *S. (P.) digitatus*); Topsent, 1913b: 614, pl. IV, fig. 5 (as *P. exalbicans*); Brøndsted, 1923: 160, fig. 33 (as *S. ramosus*), 161, fig. 34 (as *S. anastomosus*), 162, fig. 35 (as *S. incrustans*); Burton, 1930c: 334 (as *Pseudosuberites* from Campbell Is, refs & syn.), 536 (as *Suberites brondstedi*); Burton, 1932b: 336; de Laubenfels, 1936: 148; Koltun, 1964b: 87 (diag., refs & syn.); Bergquist, 1968: 24–26 (descr., refs & restrict. syn.), text-fig. 6; Morton & Miller, 1968: 66 (*Pseudosuberites*), 411 (*Suberites*), 473 (ecol.); Gordon & Ballantine, 1977: 99 (listed from Leigh region); Pritchard, 1984: 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Suberites** Nardo, 1833

Suberites affinis Brøndsted, 1923

Brøndsted, 1923: 159–160, fig. 32; Burton, 1930: (in *Carnleia* n.g.); de Laubenfels, 1936: 122 (*Desmacella*); Bergquist, 1968: 26 (incl. *Biemna rhapidophora* Brøndsted, 1923: 136–138, figs 17a-d).

Suberites anastomosus Brøndsted, 1923

Brøndsted, 1923: 161–162, fig. 34.

Suberites australiensis Bergquist, 1968

Bergquist, 1968: 27–28, pl. 3, figs c-d; Lendenfeld, 1888: 65 (as *S. domuncula* (Olivi, 1792)); see also Burton, 1953: 353–378 (status and syn. of *S. domuncula* (Olivi); cf. also Sarà, 1972: 73 (*S. domuncula*, in key, descr. etc.), fig. 6L; Vooren, 1973: 109–112 (assoc. with fish).

Suberites axinelloides Brøndsted, 1924

Brøndsted, 1924: 481–482, text-figs 34a-b; Hogg, 1966: 58 (in key); Bergquist, 1968: 26–27, text-fig. 7 (descr.); Morton & Miller, 1968: 114, 390, 410 (ecol. etc.); Miller & Batt, 1973: 56 (ecol.); Gordon & Ballantine, 1976: 99 (listed from Leigh region after Hogg, thesis 1967); Pritchard, 1984: 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Suberites carnosus (Johnston, 1842)

Johnston, 1842: 146, pl. XII, figs 7–8 (*Halichondria*); Bowerbank, 1866: 203 (*Hymeniacidon*); Bowerbank, 1874: pl. XXXVI, figs 5–9 (*Suberites (Hymeniacidon)*); Ridley, 1884: 465 (*Suberites*); Carter, 1886a: 116–117 (as *S. globosa*); Carter, 1886c: 456 (as *S. (Hymeniacidon) carnosus*); Ridley & Dendy, 1887: 197; Dendy, 1897: 245–246; Topsent, 1900: 233, pl. VII, figs 1–5 (*Suberites*) (refs & syn.); Dendy, 1916b: 134 (descr. etc.); Dendy, 1924: 380–381 (as *S. carnosus* var. *novae-zealandiae*); Arndt, 1935: 38; Burton, 1956: 122; Malone, 1965: 352; Bergquist, 1968: 27 (descr.); Vacelet, 1969: 175, pl. II, fig. 3 (forms); Sarà, 1972: 73 (in key, descr. etc.), fig. 61; Thomas, 1973: 55–56 (descr., refs), pl. III, fig. 5; Cotter, 1978: 117–122 (oxygen consumption, factors etc.); Thomas, 1980: 10 (descr.), fig. 1g; Uriz, 1986: 16 (in key), fig. 69.

Suberites cupuloides Bergquist, 1961

Bergquist, 1961b: 42, figs 14a-b; Hogg, 1966: 58 (in key); Bergquist, 1968: 27 (descr. etc.), text-fig. 8, pl. 3, fig. b; Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Boury-Esnault, 1973: 277, fig. 27; Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Pritchard, 1984: 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Suberites ficus (Pallas, 1766)

Pallas, 1766: 356 (*Alcyonium*); Johnston, 1842: 144, pl. 15, figs 4–5 (*Halichondria*); Thiele, 1898: 38, pl. 1, figs 11–12, pl. 8, figs 7a-c (as *Suberites subereus* (Johnston, 1842), 39, pl. 8, figs 8a-b (as *S. placenta* n.sp.); Arndt, 1928: 33–35; Hartman, 1958b: 16, text-fig. 1, pl. 1, fig. 5 (descr., nomenclature, relationships, distrib., refs & syn.); Tanita, 1960: 222 (descr.), pl. III, fig. 3; Tanita, 1965: 95, figs a-b; Koltun, 1966: 95, text-figs 66–67, pl. 34, figs 1–3, pl. 36, figs 1–2; Kim *et al.*, 1968: 40, text-fig. 10, pl. 2, fig. 9; Rho *et al.*, 1969: 152, pl. 2, fig. 7; Tanita, 1969: 76, pl. 2, fig. 7; Soest, 1977: 265 (in *Ficulina*), pl. 2, fig. C; Bakus & Abbott, 1980: 32, 1 fig., col. pl. 2.22 (P13); Hoshino, 1981b:

220, text-fig. 10, pl. 2, fig. 2 (*Chonites*); Tanita, 1989: 59 (descr., etc., refs & syn.), pl. 6, fig. 3. [This species has been erroneously included in the present list. It is part of a Northern Hemisphere complex *Suberites ficus* and *Suberites domuncula* already commented upon by Hartman (1958b) and Bergquist (1968: 28) — see also Vosmaer (1933), Burton (1953) and Ackers *et al.* (1985). The references are retained meantime in case the position of the allied species *S. australiensis* Bergquist, 1968 ever needs examination.]

Suberites incrustans Brøndsted, 1923
Brøndsted, 1923: 162, fig. 35.

Suberites perfectus Ridley & Dendy, 1886
Ridley & Dendy, 1886: 485; Ridley & Dendy, 1887: 200–201, pl. XLI, fig. 9, pl. XLV, figs 3a-b; Brøndsted, 1924: 482; Bergquist, 1968: 28–29 (descr. etc.), pl. 4, fig. d; Morton & Miller, 1968: 114, 390 (ecol.); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis, 1967); Pritchard, 1984: 86 (descr., habitat), 87 (fig.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Suberites sp. Grange *et al.*, 1981
Grange *et al.*, 1981: 223 (fiord biol.).

Suberites sp. Pritchard, 1984
Pritchard, 1984: 88 (descr., habitat etc.), 89 (fig.), 135 (recorded from Cape Rodney to Okakari Point Marine Reserve).

Suberites sp. Kelly-Borges *et al.*, 1991
Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics; material from Maori Bay, Auckland).

Family STYLOCORDYLIDAE
Genus **Stylocordyla** Thomson, 1870

Stylocordyla australis Bergquist, 1972
Bergquist, 1972b: 128–130, text-fig. 4 (N. of Three Kings Is, 252 m).

Stylocordyla borealis (Lovén, 1868)
Lovén, 1868: 105, pl. II, figs 1–38; Burton, 1934a: 13 (detailed syn.); Koltun, 1964a: 24, pl. 4, figs 7–9 [1966 transl., 25, pl. 4, figs 7–9]; Koltun, 1966: 100, text-figs 74–75, pl. 37, figs 1–5 (Japan, Kurile Is); Koltun, 1969: 14, pl. 3, map 4 (distrib.); Koltun, 1970a: 296 (bipolarity); Bergquist, 1972b: 130-131, figs 5, 8–11 (first N.Z. records); Vacelet & Arnaud, 1972: 14; Desqueyroux, 1975: 52–53 (refs & syn.), pl. I, figs 1-4; Boury-Esnault & van Beveren, 1982: 40–42; Tanita, 1989: 81–83, text-fig. 49, pl. 9, fig. 1 (descr., refs & syn.); Barthel & Gutt, 1992: 149 (descr.).

Stylocordyla fragilis Bergquist, 1972
Bergquist, 1972b: 131–132, text-figs 6–7 (2 miles N of Alderman Is, 110 m).

Family TETHYIDAE*
Genus **Aaptos** Gray, 1867

Aaptos aaptos (Schmidt, 1864)
Schmidt, 1864: 33, pl. IV, fig. 11 (*Ancorina*); Topsent, 1900: 285, pl. VIII, figs 12–13 (*Tuberella*); Dendy, 1916b: 14 (descr., as *Tuberella*); Dendy & Frederick, 1924: 508 (syn.); de Laubenfels, 1936: 162 (as *Epipolasis angulospicata*); de Laubenfels, 1950b: 101, fig. 46 (as *Aaptos bergmanni*); Bergquist, 1961a: 44; Liaci, 1965: figs 2–3; Malone, 1965: 351; Vacelet & Vasseur, 1965: 92, pl. 4, fig. 10; Hogg, 1966: 59 (in key), 61; Bergquist, 1968: 21 (descr. etc.), pl. 1, fig. d; Morton & Miller, 1968: 114, 390, 573 (ecol. etc.), pl. 5 (col.); Bergquist, 1969: 67–68 (remarks, refs & syn, etc.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 267–268 (reprod. adapts); Tanita, 1970: 89, text-fig. 2, pl. 2, fig. 9; Sarà, 1972: 72 (in key, descr. etc.), fig. 6H; Thomas, 1973: 57–58 (descr., refs), pl. III, fig. 7, pl. VIII, fig. 5; Boury-Esnault, 1973: 274, fig. 18; Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist, 1978: 127 (bud formation); Ayling, 1978: 9 (Cape Rodney to Okakari Point Marine Reserve, habitats, % coverage etc., sand-covered rock flats), 51 (open rock), 52 (*Ecklonia* forests), 61 (isolated quadrats); Thomas, 1980: 10–11 (descr. etc.), fig. 1i; Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification); Solé-Cava *et al.*, 1981: 130–131, fig. 18 (descr., distrib., syn. etc.), 69 (descr. etc.); Ritchie *in* Tortell, 1981: 11 (algal forest habitat); Lévi & Lévi, 1983: 939–940 (descr., remarks etc.), text-fig. 3, pl. I, fig. 3; Kotua-Dickson, 1984: 10 (listed from Motukawao Is, off Coromandel Peninsula); Pritchard, 1984: 80 (descr., habitat etc.), 81 (fig.), 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Kay & Cannon, 1984: 22 (descr.), fig. 11.8; Dini *et al.*, 1984: 170–171 (sterol composition); Tanaka & Ito, 1985: 1743 (chemistry,

* Note: Melville, 1981: 174–177 (Opinion 1182 re. removal of homonymy between Tethyidae in Mollusca, Porifera and Tunicata.

aaptopurpurin isolation); Uriz, 1986: 16 (in key), fig. 66; Nakamura *et al.*, 1987: 173–176 (chemistry, aaptamines isolation); Soest & Stentoft, 1988: 77–78 (descr., discuss., syn.), text-fig. 37; Lévi & Lévi, 1989: 69 (descr. etc.); Tanita, 1989: 78–79 (descr., refs etc.), text-fig. 46.

Aaptos sp. Kelly-Borges *et al.*, 1991

Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics, material from Cornwallis Bay, Manukau Harbour, Auckland).

Genus **Tethya** Lamarck, 1816

Tethya amplexa Bergquist & Kelly-Borges, 1991

Bergquist & Kelly-Borges, 1991: 58–59, figs 6b, 40–41.

Tethya aurantium (Pallas, 1766)

Pallas, 1766: 210 (*Alcyonium*); Lendenfeld, 1896: 1 (syn.); Topsent, 1900: 294 (*Tethya*, syn. as *T. lyncurium*); Dendy, 1916a: 262 (refs & syn., as *Donatia japonica* (Sollas, 1888: 430, pl. XLIV, figs 7–14)), pl. 48, fig. 2; Topsent, 1920: 640; Brøndsted, 1924: 444–445 (all N.Z. specimens referred to *Donatia japonica* (Sollas), syn.); Burton, 1924: 1036 (as *D. lyncurium*), 1039 (syn. as *D. japonica*); Topsent, 1928: 144 (*Tethya*); Burton, 1930a: 496–497 (geogr. and bathymetric distrib.); Arndt, 1935: 30–31 (descr., distrib., syn.), figs 43a-d; Powell, 1947 [1987]: 4, fig. 3 (as *T. fissurata*); Burton, 1956: 120–121 (remarks); Lévi, 1956c: 97–106 etc. (develop.); Bergquist, 1961b: 193, fig. 15 (as *T. compacta* n.sp.); Little, 1963: 58; Liaci, 1964: 569–572 (pigmentation var.); Labate, 1965: 332, pl. 2, figs 4 & 8; Rützler, 1965: 19–20; Koltun, 1966: 103, text-fig. 76, pl. 1, figs 2–5; Hogg, 1966: 58 (in key), 60; Bergquist, 1968: 35–36 (descr., N.Z. records, restrict. syn.), pl. 5, fig. a, pl. 13, figs a-b, d; Borojevic *et al.*, 1968: 5–6 (refs); Morton & Chapman, 1968: 24, 28 (habitat at Leigh); Morton & Miller, 1968: 115, 271, 322, 411 (ecol. etc.), pl. 6 (col.); Knox *in* Knox, 1969: 547 (Banks Peninsula shore); Batham, 1969: 78 (table II (Glory Cove, Stewart Is); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 267–268 (reprod. adaptations); MacLennan, 1970: 299–324 *passim* (cellular reaggreg.); Hoshino, 1970: 22, fig. 2, 1, fig. 3, 1 (Japan); Doak, 1971: pl. 14 (? as *T.* sp.), text-fig. 12A; Bergquist, 1972a: 101 (assoc. with spider crab *Paramithrax minor*); Sarà, 1972: 69–71 (in key etc.), fig. 6A; cf. Thomas, 1973: 72–73 (descr. etc. as *T. japonica* Sollas), pl. III, fig. 21; Ballantine *et al.*, 1973: 29 (Mimiwhangata); Miller & Batt, 1973: 55, 88, 125 (ecol. etc.), fig. 51 (col.); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Higgins, 1978: 171–180 (assoc. with Kinorhyncha); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: 38 (table 1.5, respiratory rate after Pütter, 1914), 111, 113, 209 (amino acids after Roche & Robin, 1954), text-fig. 4.6 (develop. of larva, after Lévi, 1956); George & George, 1979: 14 (descr., habitat etc.), pl. 2/1; Gottshall & Laurent, 1979: 22, fig. 2 (col.); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification); Bakus & Abbott, 1980: 32–33, 1 fig., col. pl. 2.23; Riddell, 1980: 93 (table 1, Mokohinau Is); Fishelson, 1981: 89–99 *passim*, figs (young moving colonies); Westerskov & Probert, 1981: 108, pl. 14 (col.); Weber *et al.*, 1981: 779–801 (chemistry, allantoin/adenosine isolation); Liaaen-Jensen *et al.*, 1982: 167–174 (carotenoids); Amade *et al.*, 1982: 223–228 *passim*, tables 2–3 (antimicrobial extracts); Kotua-Dickson, 1984: 10 (listed from Motukawao Is, off Coromandel Peninsula, figs 4–5 (in profiles of exposed and sheltered shores); Czeczuga, 1984a: 167–174; Czeczuga, 1984b: 259–264 (carotenoid content); Pritchard, 1984: 82 (descr., habitat), fig. on p. 81, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Bradstock, 1985: 101, fig.; Sim & Bakus, 1986: 17 (descr. etc.); Uriz, 1986: 16 (in key), fig. 65; Sarà & Gaino, 1987: 315–317 (interspecific var. of micrasters); Kurelec *et al.*, 1987: 17–22 (metabolism of carcinogenic amines); Smith & Djerassi, 1987: 236–240 (lipids); Sarà, 1987: 205, 206, 208–222, 252; Powell, 1987 [1947]: 5, fig. 3; Hoshino, 1987a: 10 (listed from Japanese waters); Tanita, 1989: 75–76 (descr., refs etc.), pl. 8, fig. 6; Herbert & Zahn, 1989: 143–167 *passim* (DNA monitoring technique); Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequencing/phylogenetics; material from Cornwallis Beach, Manukau Harbour, Auckland); Sarà *in* Rützler, 1990: (sympatric species divergences); Bergquist & Kelly-Borges, 1991: 43–45, figs 1b, 4c, 16 (descr., distrib., syn.).

Tethya australis Bergquist & Kelly-Borges, 1991

Bergquist & Kelly-Borges, 1991 : 48–49, figs 5c, 24, 25, pl. 1b (syn., incl. *T. ingalli* of Bergquist, 1968: 36).

Tethya bullae Bergquist & Kelly-Borges, 1991

Bergquist & Kelly-Borges, 1991 : 47–48, figs 1c, 10b, 22, 23.

Tethya deformis Thiele, 1898

Thiele, 1898: 29, pl. 1, fig. 18, pl. 5, fig. 26, pl. 7, figs 18a-d (Japan): Kirk, 1911: 573–575, fig. 1 (1–5) as

"*Tethya lyncurium* Lin. var. *australis*" n. var., Kermadec Is, "I propose to establish this variety with some reluctance, and only do so to avoid any possible confusion in notions of distribution."); Burton, 1924: 1036–1037 (*Donatia*) (syn.); Fell, 1950: 10 (as Kirk's *D. lyncurium* var. *australis*); Bergquist, 1968: 37 (distrib.); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification); Hoshino, 1987a: 10 (listed from "Japanese" waters); Sarà, 1987: 208, 209, 211, 214.

Tethya diploderma Schmidt, 1870

Schmidt, 1870: 52, pl. IV, fig. 11 (West Indies); Topsent, 1918: 574 (*Donatia*), figs 12–14; Burton, 1924: 1039 (N.Z. records and syn. as *Donatia*); Burton, 1937: 12 (syn.), pl. 9, fig. 56; de Laubenfels, 1950: 30 (redescr.); de Laubenfels, 1953: 545–546 (descr., reprod.), text-figs 14A–F; de Laubenfels, 1954: 233, fig. 160; Lévi, 1956d: 7 (spiculation), text-fig. 4, 1–23; Burton, 1956: 120 (syn. *T. diploderma* with *T. ingalli*); Bergquist, 1968: 36–37 (descr., distrib. etc., refs & syn. as *T. ingalli* Bowerbank), pl. 5, fig. b, pl. 13, figs c & e; Tendal, 1969: 37–38 (descr. etc.); Batham, 1968: 78 (table II, Glory Cove, Stewart Is); Tendal, 1969: 37–38 (descr. etc.); Thomas, 1973: 780–781 (descr. etc.), pl. III, fig. 19; George & George, 1979: 14 (habitat etc.), pl. 2/1; Hoshino, 1981: 237, text-fig. 24 (Japan); Hoshino, 1987: 10 (listed from Japan); Sarà, 1987: 208–210, 219, 220.

Tethya fastigata Bergquist & Kelly-Borges, 1991

Bergquist & Kelly-Borges, 1991: 56–58, figs 6a, 7c, 9b, 37–39, pl. 11b.

Tethya ingalli Bowerbank, 1858

Bowerbank, 1858: 307 (*Tethea*); Bowerbank, 1874: 119, pl. V, figs 11–17; Sollas, 1888: 431, pl. XLIV, figs 15–16 (*Tethya*); Burton, 1956: 120 (syn. *T. diploderma* Schmidt, 1870 with *T. ingalli*, cf. Burton, 1924: 1039, N.Z. records); Bergquist, 1961b: 193, figs 16a-b (as *T. multistella* Lendenfeld); not Bergquist, 1968: 36–37 (= *T. australis* Bergquist & Kelly-Borges, 1991), pl. 5, fig. 6, pl. 13, figs c & e; Morton & Chapman, 1968: 23, 29 (habitat at Leigh); Morton & Miller, 1968: 115, 271, 573 (ecol. etc.), pl. 6 (col.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 267–268 (reprod. adapts); Ballantine *et al.*, 1973: 31 (Mimiwhangata); Ayling, 1974: 623, 624 (habitat); Grace & Whitten, 1974: 19 (in benthic community, Slipper Is); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist, 1978: 131, fig. 4.15 (surface buds); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification); Grange *et al.*, 1981: 223 (fiord biol.); Pritchard, 1984: 84 (descr., habitat etc.), fig. on p. 85, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Bradstock, 1985: 101, fig.; Sarà, 1987: 211, 217; Tanita, 1989: 76–77 (descr., refs), text-fig. 44, pl. 8, fig. 5.

Tethya japonica Sollas, 1888

Sollas, 1888: 430, pl. 44, figs 7–14; Dendy, 1916a: 262; Brøndsted, 1924: 444 (in *Donatia*); Tanita, 1964: 19, text-fig. 3, pl. 1, fig. 8; Tanita, 1969: 77, pl. 2, fig. 8; Lévi, 1967: 16, pl. 1, fig. 4; Kim *et al.*, 1968: 42, text-fig. 16, pl. 3, fig. 15; Hoshino, 1970: 22, fig. 3; Pulitzer-Finali, 1981a: 98 (descr. etc., distrib. incl. N.Z.); Hoshino, 1981: 238, fig. 25; Sarà, 1987: 210 (incl. *T. compacta* Bergquist, 1961, Chatham Is) [but see under *T. aurantium* (Pallas, 1766)]; Tanita, 1989: 77–78 (descr., distrib. (incl. "New Plymouth")), text-fig. 45, pl. 8, fig. 7.

Tethya mortoni Bergquist & Kelly-Borges, 1991

Bergquist & Kelly-Borges, 1991 : 46-47, figs 1a, 20, 21.

Tethya robusta Bowerbank, 1858

Bowerbank, 1858: 287 (*Tethya*); Bowerbank, 1873a: 10, pl. II, figs 12–17; Burton, 1924: 1037 (*Donatia* syn.); Burton, 1934b: 568; Bergquist, 1968: 37; Thomas, 1973: 71–72 (descr. etc.), pl. III, fig. 20; Thomas, 1980: 12 (descr. etc.), fig. 1n; Soest, 1981: 88 (descr.), fig. 4; Kay & Cannon, 1984: 22 (descr.), fig. 11.6; Sarà, 1987: 209–211; Soest, 1989: 227 (in key), fig. 1 (illus. key); Bergquist & Kelly-Borges, 1991: 54–55 (not N.Z. ?).

Tethya stolonifera Bergquist & Kelly-Borges, 1991

Bergquist & Kelly-Borges, 1991 : 45-46, figs 3a-b, 4a-b, 8c, 10a-c, 11a-b, 16–19, pl. Ia-e.

Tethya sp. Doak, 1971

Doak, 1971: text-fig., pl. 14 (col.); Doak, 1974: 668, fig. 2 (col.); Doak, 1979: pls 5–6 (ecol.).

Tethya sp. Grace & Puch, 1977

Grace & Puch, 1977: 62 (Moturoa Is, NE New Zealand).

Tethya n.sp. "A" Evans & Bergquist, 1977

Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.).

Tethya n.sp. "B" Evans & Bergquist, 1977

Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.).

Tethya n.sp. Green & Bergquist, 1980
Green & Bergquist, 1980: 153–158 (cell membrane specialisation).

Tethya sp. Grange *et al.*, 1981
Grange *et al.*, 1981: 223 (fiord biol.).

Tethya spp. Ritchie *in* Tortell, 1981
Ritchie *in* Tortell, 1981: 11 (algal forest habitat).

Tethya n.sp. Bergquist *et al.*, 1980
Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol composition/classification).

Tethya n.sp. Lawson *et al.*, 1984
Lawson *et al.*, 1984: 335–393 *passim* tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Family TIMEIDAE
Genus **Timea** Gray, 1867

Timea alba Bergquist, 1968
Bergquist, 1968: 20, text-fig. 4, pl. 11, fig. b; Hogg, 1966: 58, 61 (in key); Dawson, 1979: 24 (type data).

Timea aurantiaca Bergquist, 1968
Bergquist, 1968: 20–21, pl. 11, fig. c; Hogg, 1966: 58 (in key, first publication of name), 61 (listed from Auckland area); Morton & Miller, 1968: 328 (ecol. as *T.* sp.); Gordon & Ballantine, 1977: 75 (habitat), 88 (listed from Leigh region after Bergquist, 1968); Pritchard, 1984: 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Hooper, 1986b: 191 (generic diag., comments on status etc.), 193 (diag. characters).

Genus **Stylotella** Lendenfeld, 1888

Stylotella agminata (Ridley, 1884)
Ridley, 1884: 466 (*Hymeniacidon*); Lendenfeld, 1888: 185 (as *Stylotella digitata*); Kirk *in* Hutton, 1904: 324 (listed as *S. digitata* Lend.); Hallmann, 1914: 349; Brøndsted, 1923: 145, fig. 23; de Laubenfels, 1954: 213, figs 145a-d; Bergquist, 1968: 24 (distrib., restr. syn.).

Order AXINELLIDA
Family AXINELLIDAE
Genus **Axinella** Schmidt, 1862

Axinella australiensis Bergquist, 1970
Bergquist, 1970: 11, 14–15, pls 1, figs C–D, 12, fig. D, 14, fig. B, table 2; Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist, 1980a: table 1 (sterols etc.); Bergquist *et al.*, 1980: tables 11–15 (sterol composition/sponge classification).

Axinella brondstedi Bergquist, 1970
Bergquist, 1970: 11, 14 (new name for *A. verrucosa* Brøndsted, 1923: 148–150, figs 26a-b, preocc. in *Axinella* by *Spongia verrucosa* Esper, 1794 by Schmidt, 1862 and by Ehlers, 1870 — cf. Sarà, 1972: 74 (in key, etc.), fig. 7B).

Axinella globula Brøndsted, 1924
Brøndsted, 1924: 475-476, fig. 28; Bergquist, 1970: 11, 14 (listed).

Axinella richardsoni Bergquist, 1970
Bergquist, 1970: 11, 16, pl. 2, fig. C, pl. 10, fig. E, table 4.

Axinella sinclairi (Gray, 1843)
Gray, 1843: 295 (*Spongia*), incl. "Var. 1" and "Var. 2"); Dendy, 1898: 317, pl. XXXIV, fig. g. (*Axinella*); Kirk *in* Hutton, 1904: 323 (listed); Bergquist, 1970: 11, 14 (listed).

Axinella torquata Brøndsted, 1923
Brøndsted, 1923: 147–148, figs 25a-b; Bergquist, 1970: 11, 14 (listed).

Axinella tricalyciformis Bergquist, 1970
Bergquist, 1970: 11, 15, pl. 2, figs A–B, pl. 14, fig. 6, table 3 (new name for *A. lamellata* Bergquist, 1961b: 188, figs 12a-c, preocc. by *A. lamellata* Dendy, 1905; de Laubenfels, 1936: 162 (*Epipolasis*); Burton, 1959a: 259 (transf. to *Axinella* of Dendy's *Spongosorites lamellata*); Grange *et al.*, 1981: 220, 223 (fiord. biol.).

Axinella sp. Bergquist, 1978
Bergquist, 1978: pl. 9a (photo by W. Doak, rocky reef community).

Axinella sp. (A) Pritchard, 1984
Pritchard, 1984: 62 (descr., habitat etc.), fig. on p. 63, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Axinella sp. (B) Pritchard, 1984
Pritchard, 1984: 64 (descr., habitat etc.), fig. on p. 65, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Ceratopsion** Strand, 1928

Ceratopsion cuneiformis Bergquist, 1970

Bergquist, 1970: 11, 18–19, text-fig. 1, pl. 4, fig. B, pl. 15, fig. B, table 8; Dawson, 1979: 23 (type data).

Genus **Homaxinella** Topsent, 1916

Homaxinella erecta (Brøndsted, 1924)

Brøndsted, 1924: 479, figs 32a-b (*Hymeniacidon*); de Laubenfels, 1936: 130 (to *Axiamon*); Bergquist, 1970: 11, 13–14, pl. 1, figs A–B, pl. 14, fig. A, table 1 (descr., review, neotype designation); not of Bergquist, 1961a: 41, fig. 12 = *Hymeniacidon haurakii* Brøndsted, 1924, *q.v.*; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Grange *et al.*, 1981: 223 (fiord biol.); Pritchard, 1984: 66 (descr., habitat etc.), fig. on p. 67, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Hymerhabdia** Topsent, 1892

Hymerhabdia oxeata (Dendy, 1924)

Dendy, 1924: 349–350, pl. XIV, figs 20–21 (*Bubaris*); Topsent, 1928: 41 (*Hymerhabdia*); de Laubenfels, 1936: 132 (in new genus *Uplexoa*); Bergquist, 1970: 11, 20 (remarks as *Hymerhabdia*).

Genus **Pararhaphoxya** Burton, 1934

Pararhaphoxya pulchra (Brøndsted, 1923)

Brøndsted, 1923: 151–154, figs 28a-e (*Sigmaxinella*); Burton, 1934b: 565, fig. 13 (as *P. tenuiramosa*); de Laubenfels, 1954: 173, fig. 114; Bergquist, 1970: 11, 16–17, pl. 2, fig. D, pl. 3, fig. A, pl. 13, fig. B, table 5.

Pararhaphoxya n.sp. Bergquist *et al.*, 1980

Bergquist *et al.*, 1980: tables 1 & 5 (sterol composition/sponge classification).

Pararhaphoxya n.sp. Pritchard, 1984

Pritchard, 1984: 68 (descr., habitat etc.), fig. on p. 69, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Phakellia** Bowerbank, 1861
in MacAndrew, 1860

Phakellia dendyi Bergquist, 1970

Bergquist, 1970: 11, 17–18, pl. 3, figs B–C, pl. 12, fig. B, pl. 14, fig. D, pl. 14, fig. A, tables 6–7; cf. Sharma, 1971: 151–152 (chemistry of *P. flabellata*); Pritchard, 1984: 70 (descr., habitat etc.), fig. on p. 71, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Pseudaxinella** Schmidt, 1875

Pseudaxinella australis Bergquist, 1970

Bergquist, 1970: 11, 20–21, pl. 4, fig. C, pl. 12, fig. C, table 10; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Pritchard, 1984: 135 (recorded from the Cape Rodney to Okakari Pont Marine Reserve).

Genus **Thrinacophora** Ridley, 1885

Thrinacophora dubia Brøndsted, 1923

Brøndsted, 1923: 157, figs 31a-c; de Laubenfels, 1936: 102 (*Rhaphidectyon*); Bergquist, 1970: 11, 20 (remarks).

Genus **Ulosa** de Laubenfels, 1936

Ulosa n.sp. Bergquist & Green, 1977

Bergquist & Green, 1977b: 289–302 *passim*, pls 1a, 3a–d, 4a, 5a & d (ultrastructure, larval metamorphosis and settlement; "A new species to be described elsewhere."); Green & Bergquist, 1980: 153–158 (cell membrane specialisation); Bergquist & Glasgow, 1986: 111–122 *passim* (ciliated epithelium of larvae/metamorphosis).

Family BUBARIDAE
Genus **Bubaris** Gray, 1867

Bubaris elegans Dendy, 1924

Dendy, 1924: 350–351, pl. X, fig. 5, pl. XIV; de Laubenfels, 1936: 132 (*Uplexoa*); Bergquist, 1970: 11, 19 (remarks).

Bubaris ornata Dendy, 1924

Dendy, 1924: 351, pl. XIV, figs 25–27 ("Terra Nova" Stn 90, near Three Kings Is); not in Bergquist, 1970; Gordon & Ballantine, 1977: 99 (listed from Leigh region after Ayling, thesis 1976).

Bubaris vermiculata (Bowerbank, 1866)

Bowerbank, 1866: 141–143 (*Hymeraphia*); Bowerbank, 1874: 67, pl. XXVI, figs 1–3; Dendy, 1924: 351 (*Bubaris*, detailed syn.); Burton, 1930a: 494–495 (geogr. and bathymetric distrib.); Burton, 1932b: 333; Arndt, 1935: 897 (descr., distrib.), figs 184a-c; Koltun,

1959: 200, fig. 158 (*Axinella*); Koltun, 1964b: 85 (diag.); Bergquist, 1970: 11, 19 (remarks, restr. syn.), pl. 15, fig. C, table 9; Boury-Esnault & van Beveren, 1982: 48–50.

Family DESMOXYIDAE
Genus **Acanthoclada** Bergquist, 1970

Acanthoclada prostrata Bergquist, 1970

Bergquist, 1970: 11, 22–23, pl. 5, fig. B, pl. 10, figs A & F, pl. 16, figs A–B, table 2; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Pritchard, 1984: 135 (recorded from Cape Rodney to Okakari Point Marine Reserve).

Genus **Parahigginsia** Dendy, 1924

Parahigginsia phakellioides Dendy, 1924

Dendy, 1924: 375, pl. XI, fig. 4, pl. XV, figs 32–33; Bergquist, 1970: 11, 22 (remarks), pl. 15, fig. D; Lévi & Lévi, 1983: 95, text-fig. 15, pl. II, fig. 4 (descr. etc., first record beyond N.Z. at 22°16'S, 167°17'E, S of New Caledonia).

Genus **Eurypon** Gray, 1867

Eurypon hispida Bergquist, 1970

Bergquist, 1970: 11, 31–32, pl. 12, fig. A; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Pritchard, 1984: 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve); cf. Kernan *et al.*, 1990b: 1355 (comparison with new species of *Eurypon* of Barrow *et al.*, 1988).

Eurypon sp. ["A"]. Barrow *et al.*, 1988

Barrow *et al.*, 1988a: 1755–1761 (chemistry, sesquiterpenes extraction, Kaikoura material, No. 831130–6, in Chemistry Department, University of Canterbury).

Eurypon n.sp. ["B"]. Barrow *et al.*, 1988

Barrow *et al.*, 1988a: 1755–1761 *passim*; Kernan *et al.*, 1990b: 1353–1356 (chemistry, new sesquiterpenes; material from 10 m off Mercury Is, December 1980, Voucher AUZ 5–03, Department of Zoology, University of Auckland); p. 1355 "... an undescribed species of *Eurypon* ... the second collection of *Eurypon* n.sp. reported on by Barrow *et al.* ... and identified as such by Bergquist.").

Family RASPAILIIDAE
Genus **Raspailia** Schmidt, 1862

Raspailia agminata Hallmann, 1914

Hallmann, 1914: 438, fig. 22; Lendenfeld, 1888: 80, pl. II, fig. 1 (as *Halichondria rubra* var. *digitata*); Bergquist, 1961b: 184, figs 8a-c; Hogg, 1966: 58 (in key), 61 (listed from Auckland area); Morton & Miller, 1968: 411; Bergquist, 1970: 11, 26–27 (descr. etc.), pl. 6, fig. A, pl. 13, fig. A, pl. 19, figs A–B, table 17; Bergquist *et al.*, 1970: 267 (reprod. adapts); Gordon & Ballantine, 1977: 99 (listed from Leigh region); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Grange *et al.*, 1981: 220, 223 (fiord biol.); Pritchard, 1984: 72 (descr., habitat etc.), fig. on p. 73, 135 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Raspailia compressa Bergquist, 1970

Bergquist, 1970: 11, 29–30, text-fig. 34a, pl. 7, fig. B, pl. 11, fig. A, table 7; Bergquist, 1978: fig. 5.16b (skeletal organisation).

Raspailia flaccida Bergquist, 1970

Bergquist, 1970: 11, 27–28, pl. 6, fig. B, pl. 10, fig. B, pl. 18, fig. C, table 6; Ayling, 1978: 6, 1 fig. (Cape Rodney to Okakari Pont Marine Reserve, habitats, % coverage etc.), 62.

Raspailia inaequalis Dendy, 1924

Dendy, 1924: 355–357, pl. XII, fig. 1, pl. XIV, figs 17–19; de Laubenfels, 1936: 102 (*Echinaxia*); Bergquist, 1970: 11, 28, text-fig. 2; Gordon & Ballantine, 1977: 99 (listed from Leigh region).

Raspailia topsenti Dendy, 1924

Dendy, 1924: 354–355, pl. XII, fig. 5, pl. XIV, figs 14–16 (*Raspailia*); de Laubenfels, 1936: 102 (*Raspaxilla*); Bergquist, 1961c: 187 (figs 11a-b (as *Axiamon novaezealandiae* (Brøndsted, 1924), cf. Brøndsted, 1924: 477, figs 31A–D (*Hymeniacidon*); Hogg, thesis 1967: 74–130 *passim* (biochem.), table 3.1, fig. 3.3 (distrib. of amino acids); but cf. *R. agminata*, above; Morton & Miller, 1968: 573 (ecol.); Bergquist, 1970: 11, 28–29 (descr. etc.), text-fig. 3b, pl. 6, figs C–D, pl. 7, fig. A, pl. 10, fig. D, pl. 19, fig. D, pl. 19, fig. D; Doak, 1971: text-fig. 14 (growth form, Leigh, 60 feet depth after Ayling); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Gordon & Ballantine, 1977: 99 (listed from Leigh region after Ayling, thesis 1968); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Ayling, 1978: 9, 1 fig. (Cape Rodney to Okakari Point Marine Reserve, habitats, % coverage etc., sediment-covered rock flats), 51 (open rock), 52 (*Ecklonia* forest), 62 (isolated quadrats); Bergquist *et al.*, 1980: tables 1, 3 & 5 (sterol

composition/classification); Riddell, 1980: 97 (table 4, Mokohinau Is); Ritchie *in* Tortell, 1981: 11 (algal forest habitat); Liaaen-Jensen *et al.*, 1982: 173 etc., tables (carotenoids).

Raspailia sp. Ayling *in* Doak, 1971
Ayling in Doak, 1971: text-fig. 14 (growth form, Poor Knights Is, 220 feet).

Raspailia sp. Ballantine *et al.*, 1973
Ballantine *et al.*, 1973: 17, 21, 36, fig. 4, fig. on p. 19.

Raspailia sp. Grace & Puch, 1977
Grace & Puch, 1977: 62 (transect, Moturoa Is, NE New Zealand).

Raspailia sp. Ritchie *et al.*, 1979
Ritchie *et al.*, 1979: 49 (listed from Poor Knights Islands Marine Reserve).

Raspailia sp. Grange *et al.*, 1981
Grange *et al.*, 1981: 223 (fiord biol.).

Raspailia sp. Grace, 1983
Grace, 1983: 104 (in "Deep Zone" [i.e., 30–45 m; see fig. 7], sublittoral rocky bottom Hauraki Gulf), 105 (in "Very deep zone" [i.e., 45–60 m; see figs 6–7]).

Raspailia sp. Lawson *et al.*, 1984
Lawson *et al.*, 1984: 375–393, tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Family RHABDEREMIIDAE
Genus **Rhabderemia** Topsent, 1890

Rhabderemia corallioides Dendy, 1924
Dendy, 1924: 357–358, pl. XII, fig. 3, pl. XV, figs 1–4; Burton, 1929: 435 (Antarctic); Burton, 1940: 116; Koltun, 1964b: 90 (diag.); Bergquist, 1968: 19.

Rhabderemia stellata Bergquist, 1961
Bergquist, 1961a: 41–42, figs 13a-c; Bergquist, 1968: 19 (descr. etc.), text-fig. 3, pl. 1, fig. C, pl. 11, fig. H.

Family SIGMAXINELLIDAE
Genus **Clathriodendron** Lendenfeld, 1888

Clathriodendron rubrum Kirk, 1911
Kirk, 1911: 580–581, text-fig. 6, pl. XXVII, fig. 1 (Kermadec Is); Fell, 1950: 11; Bergquist, 1970: 11, 31 (descr., syntype etc.).

Genus Sigmaxinella Dendy, 1894

Sigmaxinella stylotata Brøndsted, 1923
Brøndsted, 1923: 150, fig. 27 (*Sigmaxinella*); Bergquist, 1970: 11, 25 (descr. etc.), pl. 5, fig. D, pl. 16, fig. D, tables 3 & 5 (*Biemna*); Bergquist & Fromont, 1988: 30, pl. 8, fig. A (returned to *Sigmaxinella*).

Sigmaxinella sp. Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 30, pl. 8, fig. B (NZOI Stn E269, off Three Kings Is).

Family TRACHYCLADIDAE
Genus **Trachycladus** Carter, 1879

Trachycladus stylifer Dendy, 1924
Dendy, 1924: 377–378, pl. XII, fig. 7, pl. XV, figs 39–42; Bergquist, 1970: 11, 21–22 (descr. etc.), pl. 5, fig. A, pl. 10, fig. C; Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: pl. 10b.

Subclass CERACTINOMORPHA
Order DENDROCERATIDA
Family APLYSILLIDAE
Genus **Aplysilla** Schulze, 1878

***Aplysilla rosea** (Barrois, 1876)
Barrois, 1876: 57 (*Verongia*); Carter, 1876: 229, pl. XII, figs 1c, 2 (as *Aplysina naevus*); Schulze, 1878: 416, pl. XXIII, figs 16–17 (*Aplysilla*); Carter, 1886c: 285 (as *Aplysina naevus*), 286 (as *A. cruor*); Lendenfeld, 1887: 708–709, pl. 44, fig. 2 (*Aplysilla*); Burton, 1930a: 510 (remarks and syn.), pl. II, fig. 3; Burton, 1934b: 517 (Australian record), 595 (distrib.); Burton, 1935b: 78 (Sea of Japan).; Arndt, 1935: 110 (descr., distrib. syn.), text-fig. 235; de Laubenfels, 1948: 88, 167 (as syn. of *A. glacialis* (Merechowsky, 1878)); Lévi, 1956c: 85, etc. (develop.); Hogg, thesis, 1967: tables 2.3 (larval characteristics) (first N.Z. record), 3.1 (distrib. of amino acids), 5.2 (descr. and ecol. notes); Bergquist, 1967: 161–162 (Hawaiian material, cf. with Australasian — "There is almost certainly more than one species involved in this complex ..."); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Tuzet *et al.*, 1970: 955–957 (larval types etc.); Doak, 1971: pl. 11; Doak, 1974: 669 (habitat); Gordon & Ballantine, 1977: 20 (habitat), 98 (listed from Leigh region); Bergquist *et al.*, 1977: 179–184 *passim* (morphol. cilia of larvae); Evans & Bergquist, 1977: 191–199 *passim* (biochem./

* Now = *Darwinella gardineri fide* Bergquist *et al.*, 1991: 19 (table 1), 20.

taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: pl. 12c (SEM photo of larva); Ritchie *et al.*, 1979: 49 (listed from Poor Knights Islands Marine Reserve); Bergquist, 1980c: 484 (generic diag. with *A. rosea* Barrois, 1876 as type sp. following Topsent, 1905, "... *rosea* is a good species of *Aplysilla*".); Bergquist *et al.*, 1980: tables 1, 2, & 4 (sterol composition/classification); Westerskov & Probert, 1981: pl. 17 (ecol.); Ritchie *in* Tortell, 1981: 11 (algal forest habitat); Pansini & Pronzato, 1981: 78 (4-year settlement study), 79 (table 1); Bergquist & Skinner, 1982: 53; Bergquist & Wells, 1983: 28, table 3 etc. (chemotaxon.); Pritchard, 1984: 12 (descr., habitat etc.), 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Karuso & Taylor, 1986: 1629–1641 (chemical constituents); Hoshino, 1987a: 46 (listed from "Japanese waters" as *A. rosea* Schulze, 1878); Karuso *et al.*, 1988: (chemical constituents); Bergquist *et al.*, 1991: 17–24 *passim* (sterol composition/classification, as *Darwinella gardineri* (cf. pp. 19 (table 1) 20)).

Aplysilla sulphurea Schulze, 1878

Schulze, 1878: 405, pl. XXIII, figs 15, 18, 20–27, pl. XXIV, figs 28–30; Lendenfeld, 1887: 707–708; de Laubenfels, 1932: 32; Arndt, 1935: 101–111 (descr., distrib., etc.), text-fig. 236; de Laubenfels, 1936: 32; de Laubenfels, 1948: 36, 164–165 (descr., distrib., etc.), 165–168, 173; de Laubenfels, 1954: 47, text-fig. 26C; Vacelet, 1959: 62; Koltun, 1964: 111 (Antarctic); Labate, 1965: 337, pl. 2, fig. 6; Rützler, 1965: 41; Hogg, thesis 1967: table 2.3 (larval characteristics) (first N.Z. records); Bergquist, 1967: 162 (Hawaiian material, distrib. incl. N.Z.); Koltun, 1969: 14 (as bipolar species); Sarà, 1970: 273–284 *passim* (competition and co-operation); Doak, 1971: text-fig. 8 (= explanation of plate), pl. 7 (coloured); Sarà, 1972: 89 (in key, descr., etc.), fig. 12D; Vacelet *et al.*, 1976: 107; Grace & Puch, 1977: 51–65; Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 15–21 *passim* (antibacterial activity, signif.); Bergquist, 1978: text-fig. 6.3 (part of epizoic complex); Bergquist, 1980c: 464, 484 ("... a good species of *Aplysilla* "); Grange *et al.*, 1981: 223 (fiord biol.); Westerskov & Probert, 1981: pl. 16 (col.), figs 2d, 20c-d; Boury-Esnault & van Beveren, 1982: 120 (Kerguelen Is); Bergquist & Skinner, 1982: 54, text-fig. 3.7, pl. 1.3; Bergquist & Wells, 1983: 28, table 3 etc. (chemotaxon.); Pritchard, 1984: 12 (descr., habitat etc.), fig. on p. 13, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Karuso *et al.*, 1984: 1081–1093 *passim* (chemical constituents); Karuso *et al.*, 1986: 2177 (chemical constituents); Uriz, 1988: 101 (descr. etc.); Bergquist *et al.*, [1985: 72–78, figs 1–4] *in* Rützler, 1990 (biological and chemotaxon. appraisal — Australian material probably = *Darwinella* sp.).

Aplysilla sp. Morton & Miller, 1968

Morton & Miller, 1968: 116, 338 (ecol. etc.).

Aplysilla sp. Ayling, 1974

Ayling, 1974: 625 (habitat).

Aplysilla sp. Grace & Grace, 1976

Grace & Grace, 1976: 99 (in benthic community, Great Mercury Is).

Aplysilla sp. Grange *et al.*, 1981

Grange *et al.*, 1981: 220, 233 (fiord biol.).

Genus **Chelonaplysilla** de Laubenfels, 1948

Chelonaplysilla violacea (Lendenfeld, 1883)

Lendenfeld, 1883: 237, pl. 10, figs 5 & 7, pl. 11, figs 8–15, pl. 12, figs 17–18 (*Aplysilla*); Lendenfeld, 1885a: 22–23; Lendenfeld, 1889: 704–706 (descr.), pl. 46, figs 13–15; de Laubenfels, 1948: 165–166 (descr. etc.), 167; Bergquist, 1967: 162 (Hawaiian material, colour notes, distrib., incl. N.Z. and Fiji); Morton & Miller, 1968: 116, 358 (ecol. etc. as *A.* sp.); Bergquist *et al.*, 1971: 103–104; Grace & Grace, 1976: 99 (in benthic community, Great Mercury Is, as *Aplysilla*); Gordon & Ballantine, 1977: 98 (listed from Leigh region); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist, 1980c: 484 (transf. to *Chelonaplysilla*), 486 (generic diag. etc.); Bergquist & Thomas, 1982: 54; Bergquist & Wells, 1983: 28, table 3 etc. (chemotaxon.); Pritchard, 1984: 15 (descr., habitat etc.), fig. on p. 15, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Hambley *et al.*, 1986: 3281–3282 (chemistry, diterpene metabolites); Buckleton *et al.*, 1986: 1846–1848 (structure of the metabolite aplyviolene); Hambley *et al.*, 1990: 1861–1870 (chemistry, isolation of diterpenes etc.); Bergquist *et al.* [1985] 1990: 72–78, table 1 *in* Rützler, 1990 *q.v.*, (sterol composition/sponge classification); cf. Bobzin & Faulkner, 1991: 225–232 (diterpenes).

* Genus **Darwinella** Müller, 1865

Darwinella oxeata Bergquist, 1961

Bergquist, 1961d: 216, figs 6a-c; Pronzato, 1975:

* See also *Darwinella gardineri* under *Aplysilla rosea*.

14–16, 18 (in key), figs 6–7; Bergquist, 1980c: 486 (generic diag. etc.); Karuso *et al.*, 1986a: 2177-2178 (isolation of first porphyrin); Karuso *et al.*, 1986b: 1643–1653 (terpenoid composition); Bergquist *et al.* [1985: 72–78, figs 1–4] in Rützler, 1990 (biological and chemotaxon. appraisal of yellow *Darwinella*).

Darwinella sp. Karuso *et al.*, 1986

Karuso *et al.*, 1986b: 1643–1653 (chemistry, terpenoid constituents; collected from Leigh etc. — see p. 1649).

Darwinella sp. ["2"]. Bergquist *et al.* [1985], 1990

Bergquist *et al.* [1985: 72–78, figs 1–4] *in* Rützler, 1990 (biological and chemotaxon. appraisal of "rose-coloured *Darwinella*" [cf. Pronzato, 1975: 5 *et seq.*].

Genus **Dendrilla** Lendenfeld, 1883

"**Dendrilla cactus** (Selenka, 1867)"

Selenka, 1867: 565 (*Spongelia*); Burton, 1934b: 595 (syn.); de Laubenfels, 1948: 152–153 (descr., syn., etc.), pl. 26, fig. 47; not of Bergquist, 1961c: 215, figs 5a-b = *Spongia reticulata* (Lendenfeld, *q.v.*); Gordon & Ballantine, 1977: 98 (listed from Leigh region); Bergquist, 1980c: 488 (generic diag. etc. with *Dendrilla rosae* Lendenfeld, 1883 as type species following Topsent, 1905: "De Laubenfels's (1948) view that *Spongelia cactus* Selenka was the type species of *Dendrilla* was disputed by Vacelet (1958), who considered the species unrecognisable. The latter view is upheld."); Tanita, 1989: 189 (descr., syn.), pl. 19, fig. 5; Woollacott & Hadfield, 1989: 410–413 (larva).

Dendrilla rosea Lendenfeld, 1883

Lendenfield, 1883: 234; Bergquist & Skinner, 1982: 54; Pritchard, 1984: 16 (descr., habitat etc.), fig. on p. 17, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification); Karuso *et al.*, 1986b: 1643–1653 (chemistry, terpenoid constituents); Bergquist *et al.*, [1985: 72–78, figs 1–4] *in* Rützler, 1990 (chemotaxon.).

Dendrilla sp. Pritchard, 1984

Pritchard, 1984: 18 (descr., habitat etc.), fig. on p. 19, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Family DICTYODENDRILLIDAE
Genus **Dictyodendrilla** Bergquist, 1980

Dictyodendrilla cavernosa (Lendenfeld, 1883)

Lendenfeld, 1883: 234; Cambie *et al.*, 1987: 948–949 (chemistry, isolation of furanosesquiterpenes; incl. material from "Terra Nova" Stn 134 and PRB LR 29/7/72 off Little Barrier Is and Aldermen Is); Kernan *et al.*, 1990: 724–727 (new diterpenes).

Dictyodendrilla n.sp. Bergquist, 1980

Bergquist, 1980c: 488 (generic diag.), fig. 21d, e (undescr. species from N.Z.); cf. Cambie *et al.*, 1987: 1014–1016.

Family HALISARCIDAE
Genus **Halisarca** Dujardin, 1838

Halisarca dujardini Johnston, 1842

Johnston, 1842: 192, pl. XVI, fig. 8; Lendenfeld, 1889: 729–730 (distrib., syn.), pl. 50, figs 2–4; Arndt, 1935: 109–110 (descr., syn. etc.), text-fig. 234; Lévi, 1956: 17–19 etc. (histology, morphogenesis etc.); Borojevic *et al.*, 1968: 29 (ecol., refs); Juniper & Steele, 1969: 160; Rasmussen, 1973: 19; Korotkova, 1973: 16–25, 1 fig, 5 pls (regeneration); Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement, refs, see esp. p. 40, "probably *Halisarca dujardini* ... difficult to identify unless seen alive, and hence, most literature references are not reliable."); Chen, 1976: 113–139 (reprod./speciation); Aisenstadt & Korotkova, 1976: 818–823 (oogenesis etc.); Korotkova & Aisenstadt, 1976: 549–555 (oogenesis); Bergquist, 1978: 146 (table 5.1, biol. features), 190 (growth rate, after Bergquist & Sinclair, 1973); Bergquist, 1980c: 490 (generic diag. with *H. dujardini* as type species); Boury-Esnault & van Beveren, 1982: 119–120 (Kerguelen Is); Korotkova & Ermolina, 1982: 1472–1480 (larval develop.); Korotkova & Eresovsky, 1984: 36–42 (egg cleavage); Korotkova & Ermolina, 1986a: 48–53 (amoebocytes/embryogenesis); Korotkova & Ermolina, 1986b: 104–106 (embryo destruction); Uriz, 1986: 13 (in key etc.); Uriz, 1988: 102 (descr., distrib.).

Order DICTYOCERATIDA
Family DYSIDEIDAE
* Genus **Dysidea** Johnston, 1842

Dysidea cristagalli Bergquist, 1961

Bergquist, 1961a: 33, fig. 1b.

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* Proposed conservation of name, see Erridge & Tollitt, 1987: 233–234.

Dysidea elegans (Nardo, 1847)

Nardo, 1847: 267 (*Spongelia*); Lendenfeld, 1889: 655–666 (descr., refs & syn.), pl. 39, fig. 2; Brøndsted, 1926: 296 (*Spongelia*).

Dysidea fragilis (Montagu, 1818)

Montagu, 1818: 114, pl. XVI, figs 1–2 (*Spongia*); Johnston, 1842: 187, pl. 13, fig. 6, pl. 14, fig. 4 (*Dysidea*); Bowerbank, 1864: pl. XIV, figs 272–272; Bowerbank, 1866: 381–384; Bowerbank, 1874: 175, pl. LIX, figs 1–3; Carter, 1885a: 215–216 (descr.); Lendenfeld, 1889: 660–662, pl. 37, fig. 10 (*Spongelia*); Burton, 1934b: 583–593, text-figs 18–33, pl. II, figs 2–11 (review, distrib., detailed refs & syn.); Arndt, 1935: 107–108 (descr., syn., etc.), text-fig. 231; de Laubenfels, 1936: 27 (descr., discuss. etc.), pl. 6, fig. 3; de Laubenfels, 1953: 515; de Laubenfels, 1954: 35 (descr.); de Laubenfels, 1955: 138; Burton, 1956: 137; Koltun, 1958: 74 (Sea of Japan); Koltun, 1959: 222, text-fig. 182, pl. 39, fig. 2; Burton, 1959a: 272; Hogg, 1966: 57 (in key), 61 (listed from Auckland area); Hogg, thesis 1967: table 5.2 (descr., and ecol. notes); Morton & Miller, 1968: 115 (ecol.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Juniper & Steele, 1969: 160; Bergquist *et al.*, 1970: 253 (? as *D. hirciniformis* Carter, 1885, on the carapace of the spider crab *Notomithrax minor* Filhol, 1885); MacLennan, 1970: 299–334 *passim*, table I (cell aggreg.); Sarà, 1972: 89–90 (in key etc.), fig. 11G; Bergquist, 1972: 101 (assoc. with spider crab *Paramithrax minor*); Boury-Esnault, 1973: 288; Thomas, 1976: 450 (descr., etc.), fig. 2b; Wiedenmayer, 1977: 72, pl. 9, fig. 6; Gordon & Ballantine, 1977: 98 (listed from Leigh region); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Thomas, 1979: 14 (descr. etc.), fig. 2h; Bergquist, 1980c: 480 (type species — see Burton, 1934a); Bakus & Abbott, 1980: col. pl; Lopez & Boury-Esnault, 1981: 98 (descr.), figs 3–4; Thomas, 1981: 12 (syn.), pl. 1, fig. 4; Amade *et al.*, 1982: 223–228 *passim*, tables 2–3 (antimicrobial extracts); Thomas, 1982: 19 (comments); Boury-Esnault & van Beveren, 1982: 121 (Kerguelen Is); Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Uriz, 1986: 13 (in key), fig. 3; Sim & Bakus, 1986: 8 (descr. etc.); Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of sesterterpene variabilin), table 1, re. voucher specimens); Hoshino, 1987a: 46 (listed from "Japanese waters"); Molinski & Ireland, 1988: 2103–2105 (chemistry, cytotoxis, azacyclopropene extraction); Uriz, 1988: 102 (descr.); Tanita, 1989: 183–184 (descr., syn. etc.), pl. 9, fig. 2.

Dysidea navicularis (Lendenfeld, 1889)

Lendenfeld, 1889: 628 (type species of new genus *Haastia* descr. from Lyttelton, N.Z.), pl. 37, fig. 3, pl. 42, figs 1–3, pl. 43, fig. 2; Bergquist, 1980c: 482 ("... a typical *Dysidea*, close ... to *D. fragilis*. The species name is retained here only because of the geographic separation of the type material, and because no fresh material is available ...").

Dysidea spiculivora (Dendy, 1924)

Dendy, 1924: 38 (*Spongelia*); de Laubenfels, 1948: 147 (pronounced unrecognisable except as possible syn. of *D. herbacea* (Keller)).

Dysidea sp. a (Brøndsted, 1923)

Brøndsted, 1923: 164–165 (*Spongelia*).

Dysidea sp. b (Brøndsted, 1923)

Brøndsted, 1923: 165 (*Spongelia*).

Dysidea sp. Perry *et al.*, 1987

Perry *et al.*, 1987: 373–376 *passim* (chemotaxon., isolation of variabilin — see pp 374–375, table 1, for details of voucher specimens).

Genus **Eurypongia** Row, 1911

Eurypongia arenaria Bergquist, 1961

Bergquist, 1961c: 212, figs 4a-e; Bergquist, 1980c: 482 (generic diag. etc.); Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of the sesterterpene variabilin — see p. 375, table 1, for details of voucher specimen in Chemistry Department, University of Canterbury.

Family SPONGIIDAE
* Genus **Cacospongia** Schmidt, 1862

Cacospongia n.sp. 1 Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393, tables 2, 4, 5 etc. (fatty acid composition/sponge classification, chemotaxon.).

Cacospongia n.sp. 2 Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393, tables 2, 4, 5 etc. (fatty acid composition/sponge classification, chemotaxon.).

Cacospongia n.sp. Bergquist *et al.*, 1991

Bergquist *et al.*, 1991: 17–24 *passim* (sterol composition/classification, Taranaki material).

* For generic diagnosis, type species, remarks etc., *see* Bergquist, 1980: 460.

Cacospongia sp. Kelly-Borges *et al.*, 1991

Kelly-Borges *et al.*, 1991: 117–125 *passim* (RNA sequences, phylogenetics etc. Castor Bay, Auckland).

* Genus **Carteriospongia** Hyatt, 1877

Carteriospongia australis (Lendenfeld, 1886)

Lendenfeld, 1886: 166 (*Steleospongia*); Hyatt, 1877: 530, pl. XV, fig. 16 (as *S. levis*), 530, pl. 17, figs 23–24 (as *S. levis* var. *rotundus*); Carter, 1885a: 303–305 (as *Stelospongus levis* Hyatt); Carter, 1886c: 369–371 (discuss. of characters of *S. laevis* Hyatt with *S. cribrocrusta* n.sp.); Lendenfeld, 1889: 516–518, pl. 25, fig. 3, pl 29, fig. 3, pl. 30, figs 12–13, pl. 31, figs 2 & 8 (as *S. australis* var. *cornulata*); Kirk *in* Hutton, 1904: 326 (listed as *S. australis* var. *cornulata* Lendenfeld); de Laubenfels, 1948: 48; Bergquist, 1961c: 210–211, figs 2a-b (*Polyfibrospongia*); Bergquist, 1980c: 454 (*Polyfibrospongia* Bowerbank, 1877 syn. *Carteriospongia*, generic diag. etc); Schmitz & Chang, 1988: 745–748 (cf. chemistry of *C. flabellifera* (Bowerbank)).

Carteriospongia foliascens (Pallas, 1766)

Pallas, 1766: 395 (*Spongia*); Lendenfeld, 1889: 196–200 (anat., syn., etc.), pl. 5, fig. 3, pl. 6, figs 1, 3, 4, 10, pl. 7, fig. 11, pl. 14, fig. 2, pl. 24, fig. 6 (*Phyllospongia*); Kirk *in* Hutton, 1904: 325 (listed); Burton, 1934b: 573 (distrib., refs & syn.); de Laubenfels, 1948: 48, 51, 53, pl. 10, fig. 20; de Laubenfels, 1954: 15, text-fig. 7, pl. 3, fig. 6 (as *P. lekanis*); Lévi, 1956c: 128 etc. (parenchymella larva); Lévi, 1965: 24 (Red Sea); Bergquist, 1965: 131–132, text-figs 3a-b (descr., distrib., etc., Palau Is, N.Z. record "doubtful"); Bergquist, 1969: 64, pl. 1; Thomas, 1973: 14–15 (descr., refs & syn.), pl. I, fig. 4, pl. VI, figs 1–2 & 4; Bergquist, 1978: 211 (biochem.); Thomas, 1979: 14 (descr., ecol. in *Phyllospongia*), fig. 2c; Bergquist, 1980c: 454 (as type species of *Carterio-spongia*, generic diag., — see also Burton, 1934); Berg-quist *et al.*, 1980: tables 1, 2, & 4 (sterol composition/sponge classification); Thomas, 1982: 18 (descr., distrib. etc.); Bergquist & Wells, 1983: 25, table 3 (chemotaxon.); Kay & Cannon, 1984: 24 (descr.), fig. 11.18; Declerq *et al.*, 1985: 122–124 (chemistry); Kamiya *et al.*, 1986: 2205 (chemistry); Braekman & Daloze, 1986: 357–364 (fish predation/evolutionary trends etc.); cf. Schmitz & Chang, 1988: 745–748 (chemistry); Bergquist *et al.*, 1988: 297 (diag. features, syn. etc.), figs 2–5; Soest, 1989: 228 (in key, in *Iospongia*), fig. 1 (in illustrated key); Kitagawa *et al.*, 1989: 2078–2082 (chemistry, extraction of bishomosesterterpenes); Quinn & Tucker, 1989: 751–755 (chemistry, extraction of norscalarenes); Zeng *et al.*, 1991: 421–427 (isolation of new sesterterpenes). [This is a possible misidentification.]

Genus **Leiosella** Lendenfeld, 1889

Leiosella levis (Lendenfeld, 1886)

Lendenfeld, 1886: 536–539 (*Euspongia*); Lendenfeld, 1889: 213–214, pl. 12, fig. 14, pl. 15, fig. 6, pl. 20, fig. 14 (*Leiosella*); de Laubenfels, 1948: 21, 62 ("unrecognisable, except probably *Leiosella*"); Bergquist, 1961c: 209–210, fig. 1a-b (descr., refs & syn.); Bergquist, 1980c: 458 ("... a good species of *Leiosella*"), figs 7a-c.

* Genus **Phyllospongia** Ehlers, 1870

"**Phyllospongia foliascens** var. **perforata** (Hyatt, 1877)"

Hyatt, 1877: 543 (*Carteriospongia*); Lendenfeld, 1889: 172–173, pl. 6, fig. 7, pl. 7, fig. 10, pl. 8, fig. 14 (*Phyllospongia*); Kirk *in* Hutton, 1904: 325 (listed as *P. perforata* Hyatt); de Laubenfels, 1948: 48, 54 (*C. perforata* transf. to *P. foliascens* var. *perforata*); Thomas, 1976: 643 (descr., distrib., etc.); Vacelet *et al.*, 1976: 106, pl. V, figs f-g (in *Phyllospongia*); Bergquist, 1980c: 454 (Lendenfeld's "*perforata* is a haplosclerid sponge").

Phyllospongia papyracea (Esper, 1794)

Esper, 1794: 38 (*Spongia*); Ehlers, 1870: 22 (*Phyllospongia*); Lendenfeld, 1889: 187–188, pl. 4, fig. 2, pl. 5, fig. 5, pl. 7, figs 5–6 (*Phyllospongia*); Kirk *in* Hutton, 1904: 325 (listed); Burton, 1934b: 572 (neotype etc.); de Laubenfels, 1948: 45, 47, 53, 57, 123, pl. 8, fig. 17; Vacelet *et al.*, 1976: 106, pl. V, fig. g; Bergquist, 1980c: 454 (generic diag., *P. papyracea* as type species after Burton, 1934, incl. *P. distans* Lendenfeld); Bergquist *et al.*, 1980: tables 1, 2 & 4 (sterol composition/sponge classification); Kay & Cannon, 1984: 24 (descr.), fig. 11.19; Bergquist *et al.*, 1988: 304–305, figs 13–17 (diag. features, syn. etc.); Soest, 1989: 228 (in key as *Iospongia*), fig. 1 (in illus. key).

"**Phyllospongia papyracea** var. **laciniata** (Lamarck, 1814)"

Lamarck, 1814: 445 (*Spongia*); Lendenfeld, 1889: 190, pl. 5, fig. 2, pl. 6, fig. 8, pl. 7, fig. 1 (as *P. arbuscula*

* Generic review etc. *in* Bergquist *et al.*, 1988: 294–297.

* Generic review etc. *in* Bergquist *et al.*, 1988: 302–303.

from N.Z.), 200, pl. 4, fig. 1, pl. 7, fig. 3 (as *P. spiralis* from Port Chalmers, N.Z.); Kirk *in* Hutton, 1904: 325 (listed); de Laubenfels, 1948: 47, pl. 9, fig. 19. [N.Z. identification incorrect ?]

"**Phyllospongia papyracea** var. **macropora** Lendenfeld, 1889"
Lendenfeld, 1889: 173, pl. 7, fig. 7 (as *P. macropora* from Port Chalmers); de Laubenfels, 1948: 48, 53, 54; Bergquist, 1980c: 45 ("*macropora* is a haplosclerid sponge").

Phyllospongia papyracea var. **polyphylla** (Lamarck, 1814)
Lamarck, 1814: 441 (as *Spongia polyphylla*); Lendenfeld, 1889: 189, pl. 4, fig. 3 (as *P. distans* from N.Z.); de Laubenfels, 1948: 53 (incl. *P. distans* Len-denfeld), 54, 57.

Genus **Spongia** Linnaeus, 1759

Spongia reticulata (Lendenfeld, 1886)
Lendenfeld, 1886: 541 (*Euspongia*); Lendenfeld, 1889: 300–301, pl. 13, fig. 3 (*Hippospongia*); Bergquist, 1961a: 33 (*Spongia*); Bergquist, 1961c: 215, figs 5a-b (as *Dendrilla cactus* (Selenka)); Hogg, 1966: 57 (in key), 61 (listed from Auckland area); Morton & Chapman, 1968: 254, 28 (habitat at Leigh); Morton & Miller, 1968: 573 (ecol.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 258–261 (develop. stage and adapt.), text-fig. 1a-f (after Hogg, 1957 thesis); (?) Gordon & Ballantine, 1977: 98 (listed from Leigh region as *Dendrilla cactus q.v.*), 98 (*S. reticulata*); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: text-fig. 56.23 (parenchymella larva); Bergquist, 1980c: 450, 452 (generic diag., etc. — "No revision of Lendenfeld's species assigned to *Euspongia* can be attempted at present".), figs 3h, 5a; Green & Bergquist, 1980: 153–158 (cell membrane specialisation).

Spongia zimocca irregularis (Lendenfeld, 1886)
Lendenfeld, 1886: 485 (*Euspongia irregularis*), 495 (*E. irregularis* var. *siliceata*), 496 (*E. irregularis* var. *tenuis*); Lendenfeld, 1889: 245–248 (*E. irregularis*), pl. 12, fig. 9, pl. 14, figs 1–2, 4–5, pl. 21, figs 8–10, pl. 22, figs 1, 11, 17, pl. 29, fig. 1, 252–253 (*E. irregularis* var. *villosa* n. var.); Brøndsted, 1926: 295; cf. Burton, 1934b: 601; de Laubenfels, 1948: 14–16, 20 (*Spongia zimocca* Schmidt subsp. *irregularis* (Lendenfeld), 23 (*E. silicata*, "unrecognisable"), 24 (*E. villosa*, "unrecognisable"); Lévi, 1965: 23 (Red Sea).

Spongia n.sp. Evans & Bergquist, 1977
Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.).

Spongia sp. Ayling, 1974
Ayling, 1974: 625 (habitat).

Spongia sp. Pritchard, 1984
Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Spongia sp. Perry *et al.*, 1987
Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of the sesterterpene variabilin; see table 1, pl. 374, re voucher specimen).

Family THORECTIDAE
Genus **Fasciospongia** Burton, 1934

Fasciospongia sp. Bergquist, 1978
Bergquist, 1978: 192 (pl. 8a; photo by W. Doak, rocky reef community); cf. Bergquist, 1980c: 472 (generic discuss.); cf. Kernan *et al.*, 1991a: 265–268 (chemistry of *F.* sp., New Caledonia).

Genus **Hyrtios** Duchassaing & Michelotti, 1864

Hyrtios arenosa Thiele, 1905
Thiele, 1905: 479 (*Oligoceras*); Burton, 1930c: 334 (Campbell Is); de Laubenfels, 1948: 59 (as syn. of *O. paupera* Thiele, 1905); Koltun, 1964b: 109–110 (diag.); Bergquist, 1980c: 460–464 (generic diag., etc.).

Genus **Ircinia** Nardo, 1833

Ircinia fasciculata (Pallas, 1766)
Pallas, 1766: 381 (*Spongia*); Esper, 1794: pl. XXXII; Schmidt, 1862: 34–35 (*Hircinia*); Lendenfeld, 1889: 587–588; de Laubenfels, 1948: 66, pl. 13, fig. 27 (*Ircinia*); de Laubenfels, 1953: 514; Hartman, 1955: 166 (table 1 — comparison with *I. ramosa* (Keller)); Burton, 1956: 138; Bergquist, thesis 1961: 1–2, pl. 1d, pl. 4a-c; Little, 1963: 34; Melone, 1965: 356; Hechtel, 1965: 8–10; Labate, 1965: 338; Rützler, 1965: 48–50, text-fig. 21; Hogg, 1966: 57 (in key), 61 (listed from Auckland area); Tanita, 1967: 118–119 (Japan), pl. 2, fig. 10, pl. 3, fig. 12; Morton & Miller, 1968: 115 (ecol.), pl. 5 (ecol.); Tanita, 1969: 80, pl. 3, fig. 13; Tanita, 1970: 102; Sarà, 1972: 93 (in key, descr. etc.), fig. 12K; Hoshino, 1975b: 13, 17, pl. 1, fig. 1, pl. 2, fig. 6; Gordon & Ballantine, 1977: 9 (listed from Leigh region); Bergquist, 1980c: 464, 466 (generic diag.,

Spongia fasciculata Pallas as type species following de Laubenfels, 1936); Grange *et al.*, 1981: 223 (fiord biol.); Hoshino, 1981a: 61, text-fig. 3; Gili *et al.*, 1984: 13–21 (filter feeding/bacterial retention); Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Uriz, 1986: 13 (in key etc.); Hoshino, 1987a: 45 (listed from Japan); Tanita, 1989: 187 (descr., refs). [N.Z. ident. incorrect ?]

Ircinia novaezealandiae Bergquist, 1961

Bergquist, 1961a: 33, fig. 1a; Baar, 1904: 34 (Chatham Is, refs & syn. as *I. variabilis* (Schmidt, 1862: 34,, pl. III, fig. 7 (*Filiferas*)); Burton, 1926: 44; Burton, 1929: 447, pl. IV, fig. 6; de Laubenfels, 1948: 66, 68, 74, 128 (*Ircinia*); Burton, 1956: 138 (*Hircinia*); Bergquist, thesis 1961: 5–5 (*I. novaezealandiae* n.sp.), pl. 6, fig. d, pl. 36, fig. d, fig. 2b; Koltun, 1964: 111 (diag., *Hircinia*); cf. Sarà, 1964: pl. 1, fig. 7 (with *I. variabilis* symbiont *Aphanocapa raspaigellae*); Morton & Chapman, 1968: 24 (habitat at Leigh, Northland (cf. text-fig. 7)); Morton & Miller, 1968: 115 (ecol.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 247–271 *passim* (intertidal adapt.); cf. Sarà, 1971: 214–221 (ultrastructure of *I. variabilis*); cf. Desqueroux, 1972: 41 (*Hircinia variabilis* Schulze, Juan Fernandez); cf. Sarà, 1972: 93 (in key, descr. etc., *I. variabilis*), fig. 12H; Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist & Wells, 1983: 26, table 3 (chemotaxon. of *I. variabilis*); Pritchard, 1984: 22 (descr., habitat etc.), fig. on p. 23, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of the sesterterpene variabilin — see table 1, pl. 374, for details of voucher specimen in Chemistry Department, University of Canterbury); cf. Madaio *et al.*, 1989: 952–961 (chemistry of *I. variabilis*).

Ircinia ramosa (Keller, 1889)

Keller, 1889: 345, pl. 20, fig. 5 (*Hircinia*); de Laubenfels, 1934: 24; de Laubenfels, 1936: (as *H. dickinsonii*); de Laubenfels, 1948: 73 (*Ircinia*); de Laubenfels, 1954: 23, fig. 11 (descr.); Hartman, 1955: 164–166 (descr., distrib., refs & syn.); ? Bergquist, thesis 1961: 3–5, pl. 1a, fig. 1f; Little, 1963: 34–35; Bergquist, 1965: 129–131 (Palau Is); Vacelet & Vasseur, 1965: 112–114 (in subgenus *Sarcotragus*); Cowden, 1970: 562, 566, figs 8–11 (histology/histochemistry); Junqua *et al.*, 1975: 305–309 (glycoproteins); Parameswaran *et al.*, 1989: 1091–1092 (sterols); Soest, 1989: 227 (in key), fig. 2 (in illus. key). [N.Z. ident. incorrect ?]

Ircinia n.sp. ["sp. B"] Barrow *et al.*, 1988

Barrow *et al.*, 1988: 1294–1298 (chemistry; "This sponge was collected by scuba diving from Kaikoura, New Zealand, in December 1983. *Ircinia* sp. B ... remains undescribed in the literature ..."; "The type specimen # 831202–6 is deposited with the University of Canterbury Marine Chemistry Group's collection.").

Ircinia sp. Pritchard, 1984

Pritchard, 1984: 24 (descr., habitat etc.), fig. on p. 25, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Ircinia spp. A–E Perry *et al.*, 1987

Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of the sesterterpene variabilin — see table 1, p. 374, for registration of voucher specimens).

* Genus **Sarcotragus** Schmidt, 1862

Sarcotragus sp. Bergquist & Wells, 1983

Bergquist & Wells, 1983: 26, table 3 (chemotaxon.).

Sarcotragus n.sp. [sp. I] Perry *et al.*, 1987

Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of variabilin — see p. 374, table 1, for registration numbers of voucher specimens in Chemistry Department, University of Canterbury); Barrow *et al.*, 1988b: 275–281 (chemistry; note, p. 280 — "The *Sarcotragus* sp. I was collected by scuba diving from Kaikoura, New Zealand, during August 1983. *Sarcotragus* sp. I (University of Canterbury, Department of Chemistry Collection # 830801–8) is an undescribed New Zealand sponge of the family Thorectidae Bergquist ..."); Barrow *et al.*, 1988c: 1294; Barrow *et al.*, 1989: 346–359 *passim* (variabilin as major bioactive constituent).

Genus **Thorecta** Lendenfeld, 1888

Thorecta byssoides (Lamarck, 1814)

Lamarck, 1814: 375 (*Spongia*); Lendenfeld, 1889: 365, pl. 23, fig. 3, pl. 33, fig. 11 (*Thorecta*, from Port Chalmers); Kirk *in* Hutton, 1904: 326 (listed); Topsent, 1930: 25 (redescr.); de Laubenfels, 1948: 111, 112, 114, 117; Bergquist, 1980c: 470 ("*byssoides* Lamarck is a good species of *Thorecta*, although the

* For generic diagnosis, type species, remarks etc. — see Bergquist, 1980: 460.

specimens assigned to it by Lendenfeld obviously represent redescription from fresh material"; see also pp. 468–472 for generic diag. etc.).

Thorecta murrayi (Poléjaeff, 1884)

Poléjaeff, 1884: 57 (*Cacospongia*); Lendenfeld, 1889: 348–349 (as *Thorecta squalidus* n.sp. from Port Chalmers); Kirk *in* Hutton, 1904: 326 (listed as *T. squalidus* Lend.); de Laubenfels, 1948: 112, 114, 117; Bergquist, 1980c: 470 ("... as good species of *Thorecta*"), fig. 10a.

Thorecta n.sp. Perry *et al.*, 1987

Perry *et al.*, 1987: 373–376 (chemotaxon., isolation of variabilin; note p, 374, table 1 for registration numbers of voucher specimens in Chemistry Department, University of Canterbury); Karuso *et al.*, 1991b: 265–268 (chemistry), isolation of a new sesterterpene); note, p. 267 — "The genus *Thorecta* is very common in southeastern Australia and is not reliably known to occur elsewhere ... The present species is the first record of the genus from New Zealand ... Description of this new species must await publication of a monograph on the New Zaland Dictyoceratida. The sponge was collected using scuba (– 20 m) at the Bay of Islands, New Zealand, in December 1988 ... A specimen (voucher number AU27–12) has been lodged in the reference collection, Zoology Department, University of Auckland".).

Genus **Thorectandra** Lendenfeld, 1889

Thorectandra boleta (Lamarck, 1815)

Lamarck, 1815: 332 (*Alcyonium*); Lendenfeld, 1889: 359 (descr., syn.), pl. 24, figs 3 & 5, pl. 33, figs 2–5, 6–7, 10 (as *Thorecta exemplum* var. *tertia* Lendenfeld); Kirk *in* Hutton, 1904: 326 (listed as *T. e.* var. *tertia* Lend.); Topsent, 1933: 44 (redescr. in *Thorectandra*); de Laubenfels, 1948: 107–111, text-fig. 20, pl. 17, fig. 34; Hoshino, 1971: 25, pl. 2, fig. 1 (*Thorecta*); Berg-quist, 1980c: 468, 470 ("*boleta* Lamarck is a species of *Thorectandra*"), 472 ("*Alycyonium* [sic] *boletus* Lamarck is a senior synonym of *Thorectandra corticatus*", see also generic diag.); Hoshino, 1981a: 66, text-fig. 7, pl. 1, fig. 4 (*Thorecta*, Japan); cf. Cambie *et al.*, 1988: 331–334 (chemistry of *T. excavatus* (Ridley), Australia). [N.Z. identification incorrect ?]

Thorectandra sp. Bergquist & Wells, 1983

Bergquist & Wells, 1983: 41, table 4 etc. (chemotaxon.).

* Genus **Psammocinia** Lendenfeld, 1889

Psammocinia rugosa Lendenfeld, 1889

Lendenfeld, 1889: 579, 639; Perry *et al.*, 1987: 373–376 (N.Z. record, chemotaxon., isolation of variabilin etc., voucher specimen JO47–2 in Chemistry Department, University of Canterbury); Liokas *et al.*, 1989: 1805–1811 (isolation of new furanosesterterpine).

Psammocinia sp. Pritchard, 1984

Pritchard, 1984: 26 (descr. etc.), fig. on p. 27, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); see also Barrow *et al.*, 1989: 346 (chemistry, variabilin as major bioactive constituent).

Psammocinia sp. A Perry *et al.*, 1987

Perry *et al.*, 1987: 373–376 *passim* (chemotaxon., isolation etc. of sesterterpene, reference specimen No. B8 in Chemistry Department, University of Canterbury).

Psammocinia sp. B Perry *et al.*, 1987

Perry *et al.*, 1987: 373–376 *passim*, table 1 (chemotaxon., isolation of sesterterpene, reference specimens 412–12 etc. in Chemistry Department, University of Canterbury).

Order VERONGIIDA
Family APLYSINELLIDAE
Genus **Druinella** Lendenfeld, 1889

Druinella n. sp. Bergquist *et al.*, 1991

Bergquist *et al.*, 1991: 19 (table 1), 21 (table 2), 23 (table 4) (sterol composition/classification etc.; from Poor Knights Is); cf. Lendenfeld, 1889: 425; cf. de Laubenfels, 1948: 97–99 (generic diag., type species etc.).

Order HAPLOSCLERIDA
Family CALLYSPONGIIDAE
** Genus **Callyspongia** Duchassaing & Michelloti, 1864

Callyspongia bathamae Bergquist & Warne, 1980

Bergquist & Warne, 1980: 6, 11, 26–27 (descr. etc. as *C. bathami* [sic]), "... named after the late Dr E.J. Batham ..."), 33, pls 11f, 12a-c.

* For generic diagnosis, type species, remarks etc. — *see* Bergquist, 1980c: 468.

** Note de Weerdt & Soest, 1986: 32, alleges *Callyspongia* as new synonym of *Siphochalina* Schmidt, 1868.

Callyspongia conica (Brøndsted, 1924)

Brøndsted, 1924: 454, fig. 2 (*Pachychalina*); Burton, 1927b: 810 (as *Cladochalina*); Burton, 1932b: 266 (*Haliclona*); Bergquist & Warne, 1980: 27 (descr. etc. as *Callyspongia*), pl. 12d-f.

Callyspongia diffusa (Ridley, 1884)

Ridley, 1884: 399 (as *A. cervochalina finitima*, in part), 672 (*Cladochalina diffusa*), pl. 41, fig. D; Burton, 1934: 541, fig. 6 (*Callyspongia*); Bergquist *et al.*, 1970: 258 etc. (intertidal adapt.); Achary, 1971: 198–202 *passim* (polychaete associates, ecol. etc.); Erdman & Scheuer, 1975: 359–360 (chemistry, sterols); Gordon & Ballantine, 1977: 98 (listed from Leigh region after Hogg, 1967 thesis); Thomas, 1979: 13–14 (descr., etc.), fig. 2g; Bergquist & Warne, 1980: 27–28 (descr. etc.), pl. 13a-d; Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Smith, 1986a: 286–289 (larval release); Smith, 1986b: 394-400 (histology/grafts); Smith & Wildermann, 1986a: 445-464; Smith & Wildermann, 1986b: 465–473 (cell biology/grafts etc.).

Callyspongia fistulosa (Kirk, 1911)

Kirk, 1911: 576–577, text-fig. 3 (Kermadec Is, as *Chalina*); Fell, 1950: 11, pl. fig. 1; not *Haliclona fistulosa* (Bowerbank, 1866: 299 — see Bowerbank, 1874: pl. LIII (*Isodictya*); Topsent, 1887: 106 (*Reniera*); Arndt, 1935: 94 (*Adocia*); Borojevic *et al.*, 1968: 26 (*Haliclona*)); Bergquist & Warne, 1980: 289 (descr. etc. as *Callyspongia*).

Callyspongia irregularis Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 29–30 (descr. etc.), pl. 14c-e.

Callyspongia latituba (Dendy, 1924)

Dendy, 1924: 329–330, pl. X, figs 7–8 (*Siphonochalina*); Powell, 1947: 4, fig. 2 (as *Chondropsis syringianus*); Bergquist, thesis 1961: 38 (*Haliclona*); Morton & Miller, 1968: 358, text-fig. 131, *S. (Adocia)*; Doak, 1979: 10 (as *Siphonochalina* sp.); Ballantine *et al.*, 1973: 21, 80, fig. on p. 21 (as *Siphonochalina latituba* at Mimiwhangata); Bergquist & Warne, 1980: 30 (remarks based on examination of holotype, as *Callyspongia*, now incl. *Siphonochalina* for status of which see Bergquist & Warne, 1980: 24–26); Kotua-Dickson, 1984: 10 (listed from Motukawao Is, off Coromandel Peninsula; Pritchard, 1984: 32 (descr., habitat etc.), fig. on p. 33, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Powell, 1987: 5, fig. 2 (as *Siphonochalina* sp.).

Callyspongia minor (Dendy, 1916)

Dendy, 1916b: 115, (descr. from Okhamandal, Baroda), pl. II, fig. 15 (*Siphonochalina*); Dendy, 1924: 328–329 (*S. minor* var. *regalis*); Burton, 1934: 537 (*Adocia*); Bergquist & Warne, 1980: 30.

Callyspongia oliveri (Kirk, 1911)

Kirk, 1911: 577–578, text-fig. 4, pl. XXVII, fig. 2 (Kermadec Is, as *Toxochalina*); Bergquist & Warne, 1980: 30 (remarks following examination of the holotype).

Callyspongia ramosa (Gray, 1843)

Gray, 1843: 295 (*Spongia*) (incl. "Var. 1" and "Var. 2"); Lendenfeld, 1887: 765, 769, pl. XIX, fig. 21 etc. (syn.; see also Burton, 1934b: 603); Dendy, 1924: 326 (as *Chalina oculata* var. *novae-zealandiae*); Arndt, 1928: 48–50 (see under *Chalina oculata* (Pallas, 1766); Burton, 1934b: 597, 603–609 (descr., extensive syn., esp. for N.Z. records, see also Bergquist & Warne, 1980: 31); Powell, 1947 [1987]: 4, fig. 1 (*Chalina*); de Laubenfels, 1954: 109 (as *Toxadocia robusta* Ridley); Bergquist, 1961a: 36; Bergquist, 1961b: 173, fig. 3 (*Callyspongia ramosa* (Gray)), 171, figs 2a-c (as *C. robusta* (Ridley)); Tanita, 1961: 341, pl. 1, fig. 5 (Japan); Hogg, 1966: 60, 61 (listed from Auckland area); Hogg, thesis 1967: 9, 63 (reprod.), table 2.3, fig. 2.7(c) (larval characteristics), tables 5.1 (reprod.), 5.2 (descr. and ecol. notes); Morton & Miller, 1968: 114, 573 (ecol.); Bergquist, 1968: frontis (col.); Kim *et al.*, 1968: 39, text-fig. 4, pl. 1, fig. 3 (Korea); Doak, 1971: pl. 10 (col.); Rho & Sim, 1972: 183; Ballantine *et al.*, 1973: 17, fig. 14, fig. on p. 19 (Mimiwhangata); Bergquist & Sinclair, 1973: 35-44 *passim* (larval settlement); Ayling, 1974: 625 (habitat); Gordon & Ballantine, 1977: 16, 98 (listed from Leigh region); Tanita, 1977: 33, pl. I, fig. 3; Grace & Puch, 1977: 62 (in transect, Moturoa Is); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Doak, 1979: pl. 9 (col. as *C.* sp.); Ritchie *et al.*, 1979: 49 (listed from Poor Knights Islands Marine Reserve); Bergquist & Warne, 1980: 30–31, pl. 14, fig. f, pl. 15, figs a-f (descr., remarks, syn. incl. *Pachychalina affinis* Brøndsted, 1924: 455, *Gelliodes filiformis* Brøndsted, 1923: 131–132, figs 13a-b, *Gelliodes flagelliformis* Brøndsted, 1923: 192–230, figs 10–11, and *Toxochalina difficilis* Brøndsted, 1923: 132, based on examination of the holotypes — "It is probable that three more of Brøndsted's species (*Pachychalina lunae, P. densa* and *Gelliodes biformis* are also conspecific with *C. ramosa*. No type material of these species was available. Lendenfeld (1887) recorded thirty-two species of "chalinine" sponges from New Zealand. With the exception of *Antherochalina renieropsis*, which may be a *Microciona, Cladochalina truncatella* var. *laxa*, which is a *Mycale*, var. *mollissima*, which is *Batzella inaequalis*

(Hentschel), and *Cladochalina typica*, which may be a separate species of *Batzella*, all of those which are recognisable were judged by Burton (1934) to be synonyms of *Callyspongia ramosa*. *Euchalinopsis* was judged unrecognisable by de Laubenfels (1936) and presumably, since Burton did not mention them otherwise, the two species recorded from New Zealand (*E. oculata* var. *elegans* and *E. minima*) are to be pronounced unrecognisable" — Bergquist & Warne, 1980: 31); Westerskov & Probert, 1981: 107, fig. 62 (*C. ramosus*); Dell, 1981: 71, pl. 24 (col.); Hoshino, 1981: 105, text-fig. 37; Grace, 1983: 104 (in "Deep Zone" [i.e., 30-45 m, see fig. 7], Hauraki Gulf; Pritchard, 1984: 34 (descr., habitat etc.), fig. on p. 35, 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Kotua-Dickson, 1984: 10 (listed from Motukawao Is, off the Coromandel Peninsula); Hoshino, 1987: 42 (listed from "Japanese waters"); Powell, 1987: 5, fig. 1 [cf. Powell, 1947, 1987]; Amano, 1988: 181–184 (larval release/light effects); Tanita, 1989: 169–170 (descr., refs), pl. 17, fig. 2.

Callyspongia robusta (Ridley, 1884)

Ridley, 1884: 403, pl. 39, fig. G, pl. 41, figs n, n' (*Toxochalina*); Dendy, 1905: 139; Brøndsted, 1927: 5 (*T. chalmeri*); Bergquist, 1961c: 171 (*Callyspongia*); Tanita, 1977: 34, text-fig. 3, pl. 1, fig. 5 (Japan); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist & Warne, 1980: 31–32 (descr. etc.), pl. 16, figs a-c; Grange *et al.*, 1981: 216, 220, 223 (fiord biol.); Hoshino, 1981a: 107; Hoshino, 1987a: 42 (listed from Japan).

Callyspongia stellata Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 26, 32–33 (descr. from Kaikoura and Portobello), pl. 16, figs d-e.

Callyspongia n.sp. Bergquist, 1961

Bergquist, thesis 1961: —; Gordon & Ballantine, 1977: 98 (listed from Leigh region after Bergquist's record).

Callyspongia sp. Batham, 1969

Batham, 1969: 78 (table II) (Glory Cove, Stewart Is).

Callyspongia sp. Grace, 1983

Grace, 1983: 105 (in "Very deep zone" [i.e., 45–60 m, see figs 6–7], sublittoral rocky bottom, Hauraki Gulf).

Genus **Chalinopsilla** Lendenfeld, 1888

Chalinopsilla australis Lendenfeld, 1889

Lendenfeld, 1889: 136, pl. 1, fig. 6, pl. 3, figs 1–2 & 8–9 (*C. australis* n.sp.), 136–137, pl. 1, fig. 6, pl. 34, figs 1 & 8 (as *C. australis* var. *repens* Carter, 1886c: 375 (as *Chalina oculata* var. *repens*)), 137–138, pl. 3, figs 2 & 9 (*C. australis* var. *reticulata* n. var.); Bergquist & Warne, 1980: 33–34 (descr. etc., both varieties merged), pls 16f, 17a-b.

Genus **Dactylia** Carter, 1885

Dactylia palmata Carter, 1885

Carter, 1885a: 310; Lendenfeld, 1889: 150–152, pl. 1, figs 5 & 10 (as *Chalinopsilla arborea* var. *macropora*, Lendenfeld, 1888: 110, incl. *D. palmata* Carter), 153, pl. 23, figs 2 & 5 (as *C. arborea* var. *massa* var. nov.); Kirk *in* Hutton, 1904: 325 (listed as *C. a.* var. *macropora* Lend.); Dendy, 1924: 331–332 (*Chalinopsilla*); Bergquist, thesis 1961: 65–66 (*Dactylia*); Morton & Miller, 1968: 573; Bergquist *et al.*, 1970: 253 (assoc. with shell of *Chlamys zealandiae* Gray, 1843); Gordon & Ballantine, 1977: 98 (listed from Leigh region after Bergquist's thesis record); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978); 184 (substrate selection on mollusc *Herpetopoma bella*); Bergquist & Warne, 1980: 34 (descr. etc.), pl. 17d-f.

Family HALICLONIDAE
Genus **Adocia** Gray, 1867

Adocia caminata Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 20 (descr.), pl. 6e-f; Bergquist, 1961b: 173, figs 4a-b [(as *Adocia semitubulosa* (Lieberkuhn, 1859: 363 as *Halichondria*) — see also Dendy, 1921: 30 (*Reniera*); Topsent, 1925: 709 (*Pellina*)]; Griessinger, 1971: 120, 147–148, figs 2e, 10a.

Adocia conica (Thiele, 1905)

Thiele, 1905: 471, figs 90, 103 (*Pelinella*); Burton, 1934a: 13; Burton, 1938: 8; Koltun, 1964b: 102–103 (diag., Macquarie Is.).

Adocia parietalioides Bergquist, 1961

Bergquist, 1961a: 37, figs 6a-b; Hogg, 1966: 58 (in key); Gordon & Ballantine, 1977: 98 (listed from Leigh region); Bergquist & Warne, 1980: 20 (descr. etc.), pl. 6c-d; Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Adocia pulcherrima (Brøndsted, 1924)

Brøndsted, 1924: 451-452, text-fig. 10 (*Reniera*);

de Laubenfels, 1936: 140 (*Haliclona*); de Laubenfels, 1954: 75 (*Reniera*); Bergquist, thesis 1961: 41-42 (a new name proposed for *Reniera pulcherrima* Brøndsted, 1924, not of Fristedt, 1885 as *Chalina pulcherrima*); Bergquist & Warne, 1980: 21 (transf. to *Adocia*).

Adocia scyphanoides (Lamarck, 1816)

Lamarck, 1816: 368 (*Spongia*); Lindgren, 1900: 7 (*Reniera*); Brøndsted, 1924: 452, text-fig. 11; Topsent, 1932: 90 (*Siphonochalina*); Bergquist, thesis 1961: 92 (*Adocia*); Burton, 1934: 532 (*Siphochalina* syn. with *Adocia*); Bergquist & Warne, 1980: 21 (transf. to *Adocia* but — "Almost certainly this specimen is not specifically identical with Lamarck's species ...").

Adocia venustina Bergquist, 1961

Bergquist, 1961a: 37, figs 7a-b; Hogg, 1966: 58 (in key); Hogg, thesis 1967: table 5.2 (descr. and ecol. notes); Gordon & Ballantine, 1977: 98 (listed from Leigh region after Hogg thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.; Bergquist *et al.*, 1977: 179–184 (morphol. of cilia of larvae); Bergquist & Warne, 1980: 21 (descr. etc.), pl. 7, a-c; Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

* Genus **Haliclona** Grant, 1841

Haliclona brondstedi Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 12, 15 (descr. etc.), pl. 1, e-f, pl. 2, b-c.

Haliclona cinerea (Grant, 1826)

Grant, 1826: 204, pl. II, fig. 2 (*Spongia*); Bowerbank, 1874: 121, pl. 48, figs 1–5 (*Isodictya*); Brøndsted, 1923: 120, figs 3a-d (*Reniera*); Brøndsted, 1924: 452; Burton, 1934b: 532 (*Adocia*); cf. Meewis, 1941: 126–149 (embryology); Poore, 1968: 584 (table 3 — as *H. permollis* (Bowerbank, 1866), 590 (wharf-pile fauna, Lyttelton); Bergquist & Warne, 1980: 14 (transf. to *Haliclona* based on examination of Brøndsted's Auckland Is specimens); de Weerdt & Soest, 1986: 6–7; Tanita, 1989: 151 (descr., refs).

Haliclona clathrata (Dendy, 1895)

Dendy, 1895: 237 (*Reniera*); Hentschel, 1912: 410 (as *R.* sp. 4); Brøndsted, 1923: 125; Brøndsted, 1924: 453; Burton, 1934b: 532 (*Haliclona*); Bergquist, 1961a: 35–36; Bergquist, 1961b: 170, fig. 1; Tanita, 1965a: 46, pl. 1, fig. 1; Morton & Miller, 1968: 114; Hoshino, 1970: 23, figs 2–3; Hoshino, 1971: 24; Bergquist & Warne, 1980: 14–15 (descr. etc.), pl. 1a-d; Hoshino, 1981a: 74; Hoshino, 1987a: 36 (listed from Japanese waters); Tanita, 1989: 151–152 (descr., refs).

Haliclona foraminosa (Thiele, 1905)

Thiele, 1905: 465, figs 10, 81, 101 (*Reniera*); Burton, 1938: 6; Koltun, 1964b: 95 (Macquarie Is.).

Haliclona fragilis Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 14–16, pl. 2b-c.

Haliclona heterofibrosa (Lundbeck, 1902)

Lundbeck, 1902: 47, pl. 2, fig. 8, pl. 11, fig. 14 (*Reniera*); Brøndsted, 1923: 121, fig. 4 (Campbell Is.); Hentschel, 1929: 983; Burton, 1930a: 515 (as *R. aequeductus*); Burton, 1959a: 218 (*Haliclona*); Bergquist, 1961a: 35; Hogg, 1966: 59 (in key); Morton & Chapman, 1968: 24 (habitat at Leigh, cf. text-fig. 7); Morton & Miller, 1968: 66, 114, 140 (ecol. etc.); Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist *et al.*, 1970: 247–271 *passim* (intertidal adapt.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist & Warne, 1980: 16 (descr., syn. incl. *H. glabra* Bergquist, 1961a: 35, fig. 4 and *H. isodictyale* Bergquist, 1961a: 34 (figs 2a-b), pl. 2d-f, pl. 3a-b; Miller & Batt, 1973: 67 (ecol.); Gordon & Ballantine, 1977: 127 (listed from Leigh region); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Pritchard, 1984: 133 (recorded from Cape Rodney to Okakari Point Marine Reserve).

Haliclona implexa (Schmidt, 1868)

Schmidt, 1868: 27 (*Reniera*); Brøndsted, 1923: 122, fig. 5; Burton, 1930a: 515; de Laubenfels, 1936: 40 (*Haliclona*); de Laubenfels, 1954: 74, fig. 44 (*Reniera*); Koltun, 1962: 186; Tanita, 1970b: 100, pl. 1, fig. 2; Hoshino, 1975a: 31; Bergquist & Warne, 1980: 17 (transf. to *Haliclona*); Hoshino, 1981a: 93, text-fig. 30; Hoshino, 1987a: 37 (listed from "Japanese waters").

Haliclona kaikourae Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 17, pl. 3c-f [note: based on material collected from Wairepo Lagoon, Kaikoura, hence trivial name preferable as "*kaikouraensis*" *fide* — see Recommendations on the formation of names, p. 197 *in* : "International Code of Zoological Nomenclature", 3rd ed., 1985].

Haliclona laxa (Lundbeck, 1902)

Lundbeck, 1902: 46, pl. II, fig. 6, pl. XI, fig. 13 (*Reniera*); Brøndsted, 1923: 124, fig. 6; Brøndsted, 1924: 453; Burton, 1930a: 517 ("suggests transfer to

* de Weerdt and Soest (1986) concluded that new synonyms of *Haliclona* include (p. 5) *Adocia* Gray, 1867, *Gellius* Gray, 1867, *Reniera* Nardo, 1847, and (p. 17) *Pellina* Schmidt, 1870.

H. aequeductus of three cosmopolitan species of *Haliclona* recorded by Brøndsted from N.Z. as *H. heterofibrosa, H. implexa, H. laxa*); Burton, 1959a: (*H. laxa* may = *H. heterofibrosa*); Bergquist & Warne, 1980: 17 (transf. to *Haliclona*: "... there is certainly every reason to suspect" that *H. laxa* and *H. heterofibrosa* "are identical").

Haliclona maxima Bergquist & Warne, 1980
Bergquist & Warne, 1980: 11, 17, pl. 4a-c.

Haliclona punctata Bergquist & Warne, 1980
Bergquist & Warne, 1980: 11, 17–19, pl. 4d-f.

Haliclona reversa (Kirk, 1911)
Kirk, 1911: 575–576, text-fig. 2(1–4) (Kermadec Is. as *Reniera*); Fell, 1950: 11; de Laubenfels, 1954: 69 (*Pseudotrachya*); Bergquist & Warne, 1980: 18 (transf. to *Haliclona* after examination of holotype).

Haliclona sabulosa Bergquist & Warne, 1980
Bergquist & Warne, 1980: 11, 12, 15, 18 (descr.), pl. 5a-c.

Haliclona stelliderma Bergquist & Warne, 1980
Bergquist & Warne, 1980: 6, 11, 15, 18–19 (descr., neotype designated for Bergquist's original holotype!), pl. 5d-e; Bergquist, 1961a: 36 (as *Haliclona petrosioides* Burton, 1932b: 269–330, text-figs 7a-b.

Haliclona tenacior Bergquist, 1961
Bergquist, 1961a: 34–35, figs 3a-b; Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement); Bergquist & Warne, 1980: 19 (descr. etc.), pl. 5f, pl. 6a-b.

Haliclona topsenti (Thiele, 1905)
Thiele, 1905: 462, figs 4, 7–8, 104 (*Reniera*); Topsent, 1902: 12, pl. II, fig. 2, pl. III, fig. 2 (as *R. cinerea* var. *porosa*); Hentschel, 1914: 13, pl. IV, fig. 15, pl. VIII, fig. 15 (as *R. kerguelensis*); Burton, 1929: 419 (*Chalina*); Lévi, 1956b: 32 (Kerguelen Is record, descr., incl. *Reniera kerguelensis* Hentschel, 1914), text-fig. 7; Koltun, 1964b: 96 (diag.) (Macquarie Is.); Desqueyroux, 1975: 68–69 (remarks, refs & syn.); Boury-Esnault & van Beverens, 1982: 108–109 (Kerguelen); Uriz, 1988: 98 (descr., distrib.).

Haliclona n. sp. Evans & Bergquist, 1977
Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.). [This and the following three species may refer to the same taxon.]

Haliclona sp. Bergquist & Sinclair, 1968
Bergquist & Sinclair, 1968: 428 *et seq.*, text-fig. 1E, tables 1–2 (larval morphol. and behav.: "The species of *Haliclona* discussed here is a new species and the name is withheld pending full description, which is inappropriate in the present paper."); Bergquist *et al.*, 1970: 248–271 *passim* (intertidal larval adapt. studies based on a *Haliclona* sp.: "This is an undescribed species, thus the name, which will be published shortly, will not be cited here for reasons of priority)."; Bergquist, 1978: 183 (larval reaction after Bergquist *et al.*, 1970), pl. 12d, (SEM photo of larva).

Haliclona sp. Gordon & Ballantine, 1977
Gordon & Ballantine, 1977: 98 (listed from Leigh region); Pritchard, 1984: 133 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Haliclona sp. Bergquist *et al.*, 1980
Bergquist *et al.*, 1980: tables 1 & 4 (sterol composition and classification).

Haliclona sp. Kotua-Dickson, 1984
Kotua-Dickson, 1984: 10 (listed from Motukawao Is., off Coromandel Peninsula).

Haliclona spp. ["1" and "2"] Bergquist *et al.*, 1977
Bergquist *et al.*, 1977: 179–184 (morphol. of cilia in larvae).

Genus **Orina** Gray, 1867

Orina petrocalyx (Dendy, 1924)
Dendy, 1924: 321–322, pl. VI, figs 2–3 (*Gellius*); de Laubenfels, 1936: 69 (to *Orina*); Bergquist, thesis 1961: 97–98; Bergquist & Warne, 1980: 21–22 (descr. etc.), pls 7f, 8a; Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Orina regius (Brøndsted, 1924)
Brøndsted, 1924: 447–448, figs 6a-c (*Gellius*); de Laubenfels, 1936: 69 (to *Orina*); Bergquist, thesis 1961: 98–100, pl. 6a, pl. 14b-c; Bergquist, 1978: fig. 5.19b (spiculation); Bergquist & Warne, 1980: 22 (descr. etc.), pl. 7d-e; Lévi & Lévi, 1983: 977 (descr. etc., first record beyond N.Z. (Three Kings Is, 118 m) at 22°17'S, 167°14'E, 425–430 m, off New Caledonia, text-fig. 38, pl. IV, fig. 4; Uriz, 1988: 93–94 (descr., distrib. etc.).

Genus **Sigmadocia** de Laubenfels, 1936

Sigmadocia flagellifer (Ridley & Dendy, 1886)
Ridley & Dendy, 1886: 333 (*Gellius*); Ridley &

Dendy, 1887: 42–43, pl. XIII, figs 5 & 10; Dendy, 1921: 26 (refs & syn.); Dendy, 1924: 320–321 ("Terra Nova" Stn 90, Three Kings Is); Burton, 1930a: 490–491 (geogr. and bathymetric distrib.); de Laubenfels, 1936: 69 (to *Sigmadocia*); Burton, 1938: 7 (Macquarie Is.); Burton, 1959a: 218 (distrib., refs & syn., in *Haliclona*); Burton, 1959b: 19–20, 58, 69 (distrib.); Koltun, 1959: 212 (fig. 170 (*Gellius*); Bergquist, thesis 1961: 106–107; Koltun, 1963: 103 (diag., distrib. in *Adocia*); Koltun, 1969: 14 (as bipolar species, see also Koltun, 1970); Vacelet *et al.*, 1976: 83 (descr. etc.), fig. 62 (in *Gelliodes*); Bergquist & Warne, 1980: 22–23 (descr., distrib. etc. — "It is certain that more than one species is represented amongst the sponges assigned to this species, but no subdivision can be made in the absence of new material."), pl. 8b; Uriz, 1988: 94–95, text-fig. 69, pl. 23a (descr., distrib., etc. in *Gellius*).

Sigmadocia fragilis Bergquist & Warne, 1980
Bergquist & Warne, 1980: 11, 23, pl. 8c-d.

Sigmadocia glacialis (Ridley & Dendy, 1886)
Ridley & Dendy, 1886: 333 (*Gellius*); Ridley & Dendy, 1887: 41 (*S. glacialis*), 42 (var. *nivea*); Burton, 1932b: 274 (*Adocia*); de Laubenfels, 1936: 69 (*Sigmadocia*); Koltun, 1969: pl. 4, map 5 (distrib.); Desqueyroux, 1975: 72–73 (refs & syn.), pl. IV, figs 51–52; Bergquist & Warne, 1980: 23 (descr., distrib. etc.), pl. 8e-f.

Sigmadocia intermedia (Brøndsted, 1923)
Brøndsted, 1923: 127–129, fig. 9 (*Gellius*); de Laubenfels, 1936: 69 (to *Sigmadocia*); Bergquist & Warne, 1980: 23.

Sigmadocia irregularis (Brøndsted, 1923)
Brøndsted, 1923: 127, figs 8a-b (*Gellius*); de Laubenfels, 1936: 69 (to *Sigmadocia*); Bergquist, thesis 1961: 110; Bergquist & Warne, 1980: 23–24 (comment on possible priority of *S. irregularis* of Kieschnek, 1896).

Sigmadocia tubuloramosus (Dendy, 1924)
Dendy, 1924: 323–324 (*Gellius*); Burton, 1932b: 266 (*Haliclona*); de Laubenfels, 1936: 69 (to *Sigmadocia*); Bergquist, thesis 1961: 111; Bergquist & Warne, 1980: 24 (provisionally retained in *Sigmadocia*), pl. 9a.

Genus **Toxadocia** de Laubenfels, 1936

Toxadocia toxophorus (Hentschel, 1912)
Hentschel, 1912: 392, pl. 21, fig. 46 (*Gellius toxophorus*), 392, pl. 21, fig. 47 (as *G. toxotes*); de Laubenfels, 1936: 70 (to *Toxadocia*); Bergquist, 1961a: 37–38; Bergquist, thesis 1961: 111–112; Bergquist & Warne, 1980: 24 (descr. etc.).

Order NEPHELIOSPONGIDA
Family OCEANAPIIDAE
Genus **Oceanapia** Norman, 1869

Oceanapia aberrans (Dendy, 1924)
Dendy, 1924: 333–334 (*Phloeodictyon*); de Laubenfels, 1936: 72 (to *Rhizochalina*); Bergquist & Warne, 1980: 37, pl. 11e (holotype); Wiedenmayer, 1990: 120 (full generic syn.).

Oceanapia arcifera Dendy, 1924
Dendy, 1924: 332, pl. XII, figs 4–5; de Laubenfels, 1936: 72; Bergquist & Warne, 1980: 37 ("... dubiously referred to this genus by Dendy. We have not recollected it nor found any later comments on its position".), pl. 11c (holotype).

Oceanapia fistulosa (Bowerbank, 1874)
Bowerbank, 1874: 19, pl. 4, figs 7–8 (*Desmacidon*); Dendy, 1905: 165 (*Phloeodictyon*) (syn.); Dendy, 1924: 332–333 ("Terra Nova" Stn 90, near Three Kings Is); de Laubenfels, 1936: 72 (to *Rhizochalina*); Bergquist & Warne, 1980: 38 (transf. to *Oceanapia* since syn. *Rhizochalina*), pl. 11b-c; Fromont, 1991: 90 (descr., etc.), figs 1, 2f, 3e, 8.

Genus **Vagocia** de Laubenfels, 1936

Vagocia imperialis (Dendy, 1924)
Dendy, 1924: 322, pl. IX, fig. 1 (*Gellius*); Burton, 1932: 267 (*Calyx*); de Laubenfels, 1936: 133 (*Vagocia*); Bergquist, thesis 1961: 260 (new generic name proposed); Doak, 1971: pl. 10 (*Haliclona*), 669 (habitat); Bergquist, 1978: pl. 8c; Doak, 1979: pl. 2 (col.); Ritchie *et al.*, 1979: 17 (listed under "rare or endangered species" in Poor Knights Islands Marine Reserve), 23 (collecting threat), 49; Bergquist & Warne, 1980: 38 (descr. etc., transf. to *Vagocia*), pl. 10c-e; Bergquist, 1980b: 4, fig. 5c; Ritchie *in* Tortell, 1981: 12 (habitat, as *H. imperialis*); Powell, [1947] 1987: 5, fig. 5 (as *Gellius*).

Family PETROSIIDAE
Genus **Petrosia** Vosmaer, 1887

Petrosia australis Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 35–36 (descr. etc.), pl. 9b-c; Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classifi-cation).

Petrosia hebes Lendenfeld, 1888

Lendenfeld, 1888: 80; Whitelegge, 1902b: 277, 282; Hallman, 1914: 35; Bergquist & Warne, 1980: 36 (descr. etc.), pl. 9d-f; Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/ sponge classification); Perry *et al.*, 1990: 732–734 (chemistry, glycerol ethers; material from Poor Knights Is, 33 m, voucher specimens 87PK02–17, University of Canterbury, Chemistry Department).

Genus **Xestospongia** de Laubenfels, 1932

Xestospongia corallioides (Dendy, 1924)

Dendy, 1924: 324–325, pl. XI, figs 1-1a (*Petrosia*); Brøndsted, 1924: 453; de Laubenfels, 1932: 116 (*Xestospongia*); Bergquist, thesis 1961: 48–49, pl. 29a (*Xestospongia*); Bergquist & Warne, 1980: 36 (descr. etc.), pls 10f, 11a.

Xestospongia novaezealandiae Bergquist & Warne, 1980

Bergquist & Warne, 1980: 11, 37, pl. 10a-b.

Xestospongia sp. Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Order POECILOSCLERIDA
Family BIEMNIDAE
Genus **Biemna** Gray, 1867

Biemna flabellata Bergquist, 1970

Bergquist, 1970: 11, 23–25, pl. 5, fig. C, pl. 17, fig. A, tables 3–4; Dawson, 1979: 23 (type data); Bergquist & Fromont, 1988: 31–32, pl. 8, D, F, pl.98, A–C, table 12 (descr. etc.).

Biemna novaezealandiae Dendy, 1924

Dendy, 1924: 346, pl. XIV, figs 1–4; Burton, 1930a: 519; Bergquist, 1970: 11, 213, table 3; ; Bergquist & Fromont, 1988: 33.

Biemna rhabderemioides Bergquist, 1961

Bergquist, 1961a: 40, figs 10a-b; Bergquist, 1970: 11, 235 (descr. etc.), pl. 16, fig. C; Gordon & Ballantine, 1977: 99 (listed from Leigh region); Bergquist & Fromont, 1988: 31–33, pl. 8, E, table 11 (descr. etc.); Tanita, 1989: 121–122 (descr. etc.), text-fig. 74, pl. 12, fig. 6 (first record beyond N.Z. from Japan).

Biemna rufescens Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 32–33, pl. 9, D–F, pl. 10, A, table 13.

Biemna n.sp. Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Biemna sp. Dendy, 1924

Dendy, 19824: 33; Bergquist & Fromont, 1988: 33 (noted).

Biemna sp. Pritchard, 1984

Pritchard, 1984: 40 (descr. habitat etc.), fig. on p. 41, 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Desmacella** Schmidt, 1870

Desmacella ambigua Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 36, pl. 11, C–F, table 16.

Desmacella dendyi de Laubenfels, 1936

de Laubenfels, 1936: 114; Dendy, 1924: 345 (as *D. vestibularis*; not of Wilson, 1904: 139, pl. XVIII, figs 8–9, pl. XIX, fig. 1, pl. XXII, figs. 4, pl. XXIII, figs 1–3 (*Tylodesma*)); Burton, 1929: 431 (refs); Burton, 1930a: 526 (descr.), 528 (in key); Koltun, 1964: 47 (diag., distrib.); Koltun, 1969: 13; Desqueyroux, 1972: 20–21 (diag., distrib., as *Tylodesma* Thiele, 1903), figs 53–59; Gordon & Ballantine, 1977: 98 (listed from Leigh region as *D. dendyi* after Bergquist's 1961 thesis record); Bergquist & Fromont, 1988: 35, pl. 10, F, pl. 11, A–B, table 15 (descr. etc.); Uriz, 1988: 64 (descr., distrib., incl. N.Z. (after Dendy, 1924) as *Tylodesma vestibularis* Wilson, 1904).

Genus **Microtylostylifer** Dendy, 1924

Microtylostylifer anomalus Dendy, 1924

Dendy, 1924: 382, pl. XV, figs 46–49; de Laubenfels, 1936: 120; Bergquist & Fromont, 1988: 34, pl. 10, B-E, table 14 (descr. etc.); Lévi & Lévi, 1989: 85–87, text-fig. 54 (descr. etc., first record beyond N.Z. from MUSORSTOM 2 Stn 8, off the Philippines, 85–90 m).

Family CLADORHIZIDAE
Genus **Asbestopluma** Norman *in* Lankester, 1882

Asbestopluma biserialis (Ridley & Dendy, 1886)
Ridley & Dendy, 1886: 325 (*Esperella*); Ridley & Dendy, 1887: 1, 11, 62, 75–76 (descr. etc.), 90, 248, 253, 261, pl. XIV, figs 2–3, pl. XV, figs 8, 8a-b; Lévi, 1964: 74–75, text-fig. 21, pl. III, fig. H ("Galathea" Stn 668, Kermadec Trench); Koltun, 1970b: 188–190 (descr. etc.), fig. 15, pl. III, fig. 1, table 1 (distrib.).

Asbestopluma hadalis Lévi, 1964
Lévi, 1964: 76, text-fig. 24 ("Galathea" Stn 651, Kermadec Trench).

Asbestopluma wolffi Lévi, 1964
Lévi, 1964: 75–76, text-fig. 23 ("Galathea" Stn 650, Kermadec Trench); Koltun, 1964: 35, fig. 7 (as *A.* sp.); Koltun, 1970b: 188 (descr. etc.), fig. 14: 5–7, pl. II, fig. 3, table 1 (distrib.).

Genus **Chondrocladia** Thomson, 1873

Chondrocladia asigmata Lévi, 1964
Lévi, 1964: 76, text-fig. 23, pl. IV, figs A & C ("Galathea" Stn 668, Kermadec Trench).

Chondrocladia clavata Ridley & Dendy, 1886
Ridley & Dendy, 1886: 345; Ridley & Dendy, 1887: 100–101, pl. XX, figs 1–1a, pl. XXI, fig. 11; Burton, 1929: 431; Koltun, 1964b: 39 (diag.); Lévi, 1964: 76, fig. 25, pl. IVd; Bergquist, 1972: 125 (first N.Z. records); Boury-Esnault & van Beveren, 1982: 57; Bergquist & Fromont, 1988: 28–29, pl. 7, C–F, table 10 (descr. etc.).

Family CLATHRIIDAE
Genus **Artemisina** Vosmaer, 1885

Artemisina elegantula Dendy, 1924
Dendy, 1924: 314–315; Burton, 1930a: 531 (descr. and in key); Bergquist & Fromont, 1988: 120 ("The species has not been recollected to date.").

Artemisina jovis Dendy, 1924
Dendy, 1924: 343–344, pl. XII, fig. 6; Burton, 1930a: 530 (descr.), 531 (in key); Burton, 1938: 17; Koltun, 1964: 74–75 (diag.); Bergquist & Fromont, 1988: 119–120, text-fig. 11a, pl. 56, B–E, table 93 (descr. etc.).

Genus **Axociella** Hallmann, 1920

Axociella macrotoxa Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 117, pl. 54, C–F, table 89.

Axociella multitoxaformis Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 118, pl. 55, D–F, pl. 56, A, tables 91–92.

Axociella toxitenuis Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 117–118, text-fig. 11a, pl. 55, A–C, table 90.

Axociella sp. Pritchard, 1984
Pritchard, 1984: 46 (descr., habitat etc.), fig. on p. 47, 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Isociella** Hallmann, 1920

Isociella incrustans Bergquist, 1961
Bergquist, 1961a: 42–43, figs 15a-b; Bergquist & Fromont, 1988: 114–116, text-fig. 116, pl. 53, E–F, pl. 54, A–B, table 88 (descr. etc.).

Isociella n.sp. Bergquist & Sinclair, 1973
Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement — note p. 40 as "undescribed species").

* Genus **Microciona** Bowerbank, 1862

Microciona basispinosa Burton, 1934
Burton, 1934c: 38, text-fig. 11, pl. V, fig. 2; Burton, 1938: 17; Koltun, 1964: 76 (diag., Macquarie Is.).

Microciona coccinea Bergquist, 1961
Bergquist, 1961a: 38, figs 8a-b; Hogg, 1966: 58 (in key), 59; Hogg, thesis 1967: tables 2.3 (larval characteristics), 5.2 (descr., and ecol. notes); Morton & Chapman, 1968: 23, 28 (habitat at Leigh); Bergquist & Sinclair, 1968: 428 *et seq.* (larval morphol. and behav.), text-fig. 1D, tables 1–2; Bergquist *et al.*, 1970: 247–271 *passim* (larval intertidal adapt. incl. assoc. with shell of mollusc *Herpetopoma bella* Hutton, 1873); Bergquist, 1972: 101 (assoc. with *H. bella*); Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement); Gordon & Ballantine, 1977: 98 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Bergquist & Fromont, 1988: 102–103, text-fig. 9b, pl. 47, F, pl. 48 A, table 76 (descr. etc.).

* cf. Lévi, 1960: 51 (generic diagnosis, status etc.), 65 (key).

Microciona dendyi Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 100, 102, text-fig. 9a, pl. 47, D–E, table 75.

Microciona lendenfeldi (Ridley & Dendy, 1886)

Ridley & Dendy, 1886: 474 (*Clathria*); Ridley & Dendy, 1887: pl. XXV, 148–149, 245, 254, pl. XXVII, fig. 5, pl. XXIX, fig. 6, pl. XLVII, fig. 5; Burton & Rao, 1932: 354; de Laubenfels, 1936: 105 (*Thalysias*); Bergquist, thesis 1961: 186 (*Microciona*).

Microciona novaezealandiae Brøndsted, 1924

Brøndsted, 1924: 463, fig. 19a-e; de Laubenfels, 1936: 112 (in new genus *Wetmoreus* de Laubenfels); Bergquist & Fromont, 1988: 103–104 (remarks "Unfortunately the holotype lodged at the Copenhagen Museum appears to be lost, and no new material has been collected, so the status of the species cannot be resolved.").

Microciona pyramidalis Brøndsted, 1924

Brøndsted, 1924: 466, fig. 21a-d; de Laubenfels, 1936: 110 (*Dictyociona*); Gordon & Ballantine, 1977: 98 (listed from Leigh region after Bergquist's thesis 1961 record); Bergquist & Fromont, 1988: 104 (to *Microciona*, remarks etc.).

Microciona rubens Bergquist, 1961

Bergquist, 1961a: 38, figs 9a-b; Gordon & Ballantine, 1977: 98 (listed from Leigh region after Bergquist, thesis 1961); Bergquist & Green, 1977a: 85–86 (method, larva substrate relation/SEM); Bergquist & Green, 1977b: 289–302 (larval settlement and metamorphosis, ultrastructure), pl. 5, fig. b, pl. 6; Bergquist & Fromont, 1988: 103, text-fig. 9c, pl. 48, B–C, table 77 (descr. etc.).

Microciona n.sp. Evans & Bergquist, 1977

Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.).

Genus **Axoplocamia** Burton, 1935

Axoplocamia ornata (Dendy, 1924)

Dendy, 1924: 351, pl. XIV, figs 25–27 (*Bubaris*); Burton, 1928: 129 (*Plocamia*); Bergquist, thesis 1961: 123; Bergquist & Fromont, 1988: 122 (remarks — "This species has not been recollected and no type specimen remains in the British Musum ... the sponge belongs to the Bubaridae but cannot be further described until additional material is collected. The genus *Axoplocamia* is probably a synonym of *Bubaris* ...").

*Genus **Clathria** Schmidt, 1862

Clathria intermedia Kirk, 1911

Kirk, 1911: 579, fig. 5 (Kermadec Is); de Laubenfels, 1936: 105 (*Thalysias*); Fell, 1950: 11, pl. 1, fig. 2 (*Clathria*); Bergquist, thesis 1961: 196 (*Microciona*); Bergquist & Fromont, 1988: 109–110 (remarks — "*Clathria intermedia* has not been recollected, and thus the original generic name is retained until the species can be accurately assigned to either *Clathria* or *Microciona*. The type material cannot be located in New Zealand.").

Clathria lissosclera Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 106–107, text-fig. 10a, pl. 498, D–F, table 90 [? may include *Clathria caelata* (Hallmann, 1919) of Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement — note p. 40 as "obviously new introductions from southeastern Australia" occurring at Naval Dockyard, Auckland).].

Clathria macropora Lendenfeld, 1888

Lendenfeld, 1888: 221; Hallmann, 1914: 267; Bergquist & Fromont, 1988: 110 ("The sponge has not been recollected and it is very doubtful whether the New Zealand and Australian specimens are the same species.").

Clathria mortenseni Brøndsted, 1923

Brøndsted, 1923: 143, figs 22a-d (*Clathria*); Brøndsted, 1924: 465, figs 20a-m (as *Microciona heterospiculata*); de Laubenfels, 1936: 111 (*Microciona mortenseni*), 111 (as *Quizciona* [n.g.] *heterospiculata*); Burton, 1940: 111; Bergquist, thesis 1961: 1984 (as *Microciona heterospiculata* Brøndsted); Bergquist, 1961a: 39 (as *M. heterospiculata*); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve, as *M. heterospiculata*); Bergquist & Fromont, 1988: 107–108, text-fig. 10b, pl. 50, A–C, table 81 (descr., distrib., remarks on syn. etc.).

Clathria terranovae Dendy, 1924

Dendy, 1924: 353–354, pl. XII, fig. 5, pl. XIV, figs 9–13 (*Clathria*); Burton, 1932: 324 (discuss., as *Dictyociona*); Burton 1940: 112, figs 3a-i, pl. 4, figs 3–4; de Laubenfels, 1953: 528 (*Thalysias*); Koltun, 1964b: 72–73 (diag.); Rho & Sim, 1976: 74, pl. 6, figs

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• Lévi, 1960: 50–51 (diag., status etc.), 61 (key); Hooper *et al.*, 1990: 123–148 (biochemical and morphometrical differences of two sympatric sibling species of *Clathria* and the significance of cryptic characters to the existing morphological systematics of the Microcionidae).

3–4; Boury-Esnault & van Beveren, 1982: 107 (Kerguelen Is.); Cuartas, 1986: 38–39, figs 7a–c (descr., distrib., discuss., etc.); Hoshino, 1987a: 30 (listed from "Japanese waters"); Bergquist & Fromont, 1988: 109, text-fig. 10c, pl. 50, D–F, pl. 51, A, table 82 (descr., remarks etc.).

Genus **Dictyociona** Topsent, 1913

Dictyociona atoxa Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 105–106, pl. 49, A–C, table 79.

Dictyociona contorta Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 105, text-fig. 9d, pl. 48, D–F, table 79.

* Genus **Ophlitaspongia** Bowerbank, 1866

Ophlitaspongia oxeata Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 113, text-fig. 11d, pl. 52, C–E, table 86.

Ophlitaspongia reticulata Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 113–114, pl. 52, F, pl. 53, A–C, table 87.

Ophlitaspongia seriata (Grant, 1826)

Grant, 1826b: 116 (*Spongia*); Bowerbank, 1866: 14, 376–378 (*Chalina*); Bowerbank, 1874: 167 pl. LXV, figs 1–4 (*Ophlitaspongia*); Arndt, 1935: 82 (descr., distrib. etc.), text-fig. 170; de Laubenfels, 1936: 120; de Laubenfels, 1954: 161–162; Burton, 1959a: 247 (in key); Lévi, 1960: 58 (spicules etc.), 61 (in key), 64–65 (descr. etc.), text-fig. 9; Bergquist, thesis 1961: 218–219 (first N.Z. records); Lévi, 1963: 59–60 (descr. etc), text-fig. 69, pl. IX, figs B–C; Borojevic& Lévi, 1964: 708–725, 15 figs (electron microscope studies); Hogg, 1966: 60, 61 (listed from Auckland area); Hogg, thesis 1967: tables 2.3 (larval characteristics), 3.1, fig. 3.3 (distrib. of amino acids), table 5.2 (descr. and ecol. notes); Morton & Miller, 1968: 114; Bergquist & Sinclair, 1968: 427 (N.Z. record), 428 *et seq.* (larval morphol. and behav.), text-fig. 1B, tables 1–2; Simpson, 1968: 37–40 (skeletal morphol., histology, cytology, cytochemistry, in *Microciona*), 94 (generic placing), text-figs 2A–C, tables 11–13, 46, 49; Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Fry, 1970: 135–162, text-figs 1–12 (biometric population discrimination); Bergquist *et al.*, 1970: 247–271 *passim* (intertidal adapts); MacLennan, 1970: 299–334 *passim*, table I (cellular aggregation); Bergquist & Sinclair, 1973: 35–46 *passim* (larval settlement); Fry, 1973: 159–170 (larval migration/population maintenance); Ayling, 1974: 625 (habitat); Gordon & Ballantine, 1977: 16 (habitat), 98 (listed from Leigh region following Hogg's 1967 thesis records); Bergquist, 1978: 185 (fusion of larva, after Fry, 1971); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Uriz, 1986: 17 (in key), fig. 89. [Not included in Bergquist & Fromont, 1988].

Ophlitaspongia n.sp. 1 Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Ophlitaspongia n.sp. 2 Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification).

Ophlitaspongia sp. Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 114, pl. 53, D, ("A third species of *Ophlitaspongia* has been found from Dunedin but due to the small size of the specimen cannot be described at present.").

Genus **Plocamia** Schmidt, 1870

Plocamia novizelanicum (Ridley, 1881)

Ridley, 1881b: 482, pl. XXIX, figs 8–16 (*Dirrhopalum*); Burton & Rao, 1932: 355 (referred to *Plocamia manaarensis* Ridley, 1881); de Laubenfels, 1936: 75–76 (*Holoplocamia*); Lévi, 1952: 54 (*Plocamilla*); Bergquist, thesis 1961: 123 (*Holoplocamia*); Hogg, 1966: 59–60, 61 (as *H. neo zelanicum* [sic]); Morton & Miller, 1968: 114, 271, 390, 411 (ecol. etc.); Gordon & Ballantine, 1977: 98 (listed from Leigh region); Bergquist & Fromont, 1988: 120–123, pl. 56, F, pl. 57, A–B, table 94 (descr., distrib. etc., remarks incl. new name *Plocamia levii* proposed for South African species recorded by Lévi & Lévi (1983: 965, fig. 27) as *Plocamilla novizelanica*); Uriz, 1988: 90–91, text-fig. 65 (in *Plocamilla* Topsent, 1928 as *P. novicelandica* [sic] and *P. novizelandica*, descr., distrib., etc.; [= *Plocamia levii* Bergquist & Bergquist, 1988].

Plocamia prima (Brøndsted, 1924)

Brøndsted, 1924: 470–471, figs 22a-d (*Lissoplocamia*); Topsent, 1928: 63; de Laubenfels, 1936: 76;

* cf. Lévi, 1960: 58, 64–65 (spicules etc.).

Bergquist, thesis 1961: 127–129, Lévi, 1963: 63–64, fig. 73 (descr. etc., South African record, 1st record beyond N.Z., E. of North Cape); Lévi & Lévi, 1983: 965–966 (descr. etc., noted as 1st record from beyond Bay of Islands, N.Z., off New Caledonia 250–350 m), text-fig. 27.

Genus **Pseudoanchinoe** Burton, 1929

Pseudoanchinoe scotti (Dendy, 1924)

Dendy, 1924: 352–353, pl. X, fig. 1, pl. XIV, figs 5–8 (*Clathria*); de Laubenfels, 1936: 109 (*Pseudoanchinoe*); Bergquist & Fromont, 1988; 110–111, text-fig. 10d, pl. 51, B–D, table 84 (descr. etc.).

Genus **Rhaphidophlus** Ehlers, 1870

Rhaphidophlus anchoratum (Carter, 1881)

Carter, 1881: 379 (*Echinonema*); Lendenfeld, 1888: 220 (as *E. anchoratum* var. *lamellosa*); Hallmann, 1912: 299 (N.Z. record of Lendenfeld, 1888 ref. to *Wilsonella lamellosa*); de Laubenfels, 1936: 109 (*Microciona*); Lévi, 1960: 54 (*Rhaphidophlus*); Bergquist & Fromont, 1988: 112 (remarks on generic placing etc. — "... the type specimen appears to have been lost, and as the original description was very brief, it may not be possible to re-identify the species.").

Rhaphidophlus coriocrassus Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 112, text-fig. 10e, pl. 51, E–F, pl. 52, A–B, table 85.

Family COELOSPHAERIDAE
Genus **Amphiastrella** Dendy, 1895

Amphiastrella kirkpatricki (Dendy, 1924)

Dendy, 1924: 371–372, pl. IX, fig. 2, pl. XV, figs 28–31; Brøndsted, 1924: 473–474, figs 26a-d (as *Cornulum novae zealandiae* from 10 miles SW of Cape Maria van Diemen, 50 fm); Burton 1929: 439 (referred to *Inflatella belli* (Kirkpatrick, 1907); de Laubenfels, 1936: 54 (as *Xytopsene novae zealandiae* (Brøndsted, 1924), 71 (*Amphiastrella*); Bergquist, thesis 1961: 113–116; Bergquist & Fromont, 1988: 50–51, pl. 20, A–E, pl. 33 (descr. etc.).

Genus **Coelosphaera** Thomson, 1873

Coelosphaera calcifera (Burton, 1934)

Burton, 1934b: 548, fig. 8a-c (*Histoderma*, Australia); Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement — see p. 40, "obviously new introductions from south-eastern Australia"); Hoshino, 1976: 5, pl. 2, figs 13–16 (*Coelosphaera*); Hoshino, 1981: 129, text-fig. 53; Hoshino, 1987a: 27 (listed from "Japanese waters"); Bergquist & Fromont, 1988: 48, pl. 18, E, table 30 (descr., distrib., incl. Campbell Plateau, 84 m, and Great Barrier Reef, 51 m); Tanita, 1989: 12 (descr. etc.), text-fig. 79.

Coelosphaera globosa Bergquist, 1961

Bergquist, 1961b: 176, figs 5a-d; Bergquist & Fromont, 1988: 47–48, pl. 18, C–D, table 29 (descr.).

Coelosphaera transiens Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 48–49, pl. 18, F, pl. 19, A, table 31.

Genus **Inflatella** Schmidt, 1875

Inflatella spherica Dendy, 1924

Dendy, 1924: 371–373, pl. IX, fig. 3 (from "Terra Nova" Stn 90, near Three Kings Is); Burton, 1929: 439–440 (refs & syn. etc., as *Inflatella belli* (Kirkpatrick, 1907: 283–284 (*Joyeuxia*), incl. *I. spherica*; Kirkpatrick, 1908: 41–42, pl. XVI, figs 1–5a; Burton, 1932: 318; Koltun, 1964b: 48–49 (diag., refs & syn.), pl. VIII, figs 1–3 (1966, transl: 50); Koltun, 1969: pl. 4, map 6 (distrib.); Vacelet & Arnaud, 1972: 16, fig. 5; cf. Boury-Esnault & van Beveren, 1982: 72–73 (Kerguelen Is); Bergquist & Fromont, 1988: 51–52, pl. 20, F, pl. 21, A–C, pl. 35 (desc., status etc. — "This species is closely related to a sponge described as *Inflatella belli* by Boury-Esnault and van Beveren (1982) from Kerguelen ... It is possible that *I. sphaerica* should be synonymised with *I. belli*, but both species should be retained until the type specimen of *I. belli* can be examined ..."); Uriz, 1988: 82–83 (descr., distrib., syn. etc., including *Joyeuxia tubulosa* Hentschel, 1914, *J. fistulosa* Dendy, 1924, and *Inflatella sphaerica* Dendy, 1924).

Genus **Histodermella** Lundbeck, 1910

Histodermella australis Dendy, 1924

Dendy, 1924: 373–374, pl. XV, figs 24–27; de Laubenfels, 1936: 72 (to *Hiltonus* new genus); Bergquist, thesis 1961: 120; Lévi, 1963: 29; Bergquist & Fromont, 1988: 49–50, pl. 19, B–F, table 32 (descr. etc.).

Genus **Manawa** Bergquist & Fromont, 1988

Manawa demonstrans (Dendy, 1924)

Dendy, 1924: 370, pl. IX, fig. 4, pl. XV, figs 22–23b

(*Pyloderma*); Burton, 1929: 439 (syn. with *Anchinoe latrunculioides* (Ridley & Dendy, 1886: 326 (*Halichondria*), in part); Ridley & Dendy, 1887: 6–7, pl. I, figs 5–5a, pl. II, fig. 1, pl. XLVI, fig. 5; Kirkpatrick, 1908: 51 (as type species of new genus *Pyloderma*) — see also Burton, 1932b: 315; Burton, 1934: 30; Koltun, 1964b: 47–48, pl. IX, figs 1–2 (diag., distrib. etc. as *Inflatella latrunculioides* (Ridley & Dendy); Bergquist & Fromont, 1988: 52–53, pl. 21, D–F, pl. 22, A (status etc.).

Family CORNULIDAE
Genus **Coelocarteria** Burton, 1934

Coelocarteria spatulosa Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 55–56, pl. 23, A–E, table 38.

Genus **Cornulum** Carter, 1876

Cornulum strepsichela Dendy, 1921
Dendy, 1921: 105, pl. 16, fig. 3a-b; Vacelet *et al.*, 1976: 58–59, fig. 37; Bergquist & Fromont, 1988: 53–54, pl. 22, B, table 36.

Genus **Paracornulum** Hallmann, 1920

Paracornulum sinclairae Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 54–55, pl. 22, C–F, table 37 (as *P. sinclairi* [sic] — "named after Mrs M. Sinclair ...").

Genus **Zyzza** de Laubenfels, 1936

Zyzza massalis (Dendy, 1921)
Dendy, 1921: 78–79, pl. 14, figs 5a-c (*Plocamia*); Burton, 1935: 400 (*Lissodendoryx*); de Laubenfels, 1936: 64 (*Zyzza*); Burton, 1959a: 240–241, text-fig. 25 (as *Damirina verticillata* n,.sp.); Bergquist & Fromont, 1988: 56–57, pl. 23, F, table 39 (descr. etc.); Hooper & Krasochin, 1989: 133–140 (redescr.), figs 1–6; Fromont & Bergquist [1985] *in* Rützler, 1990 (structural characters/taxonomy/cladistics.

Family CRELLIDAE
Genus **Crella** Gray, 1867

Crella affinis Brøndsted, 1924
Brøndsted, 1924: 467–468, figs 22a-e (*Anchinoe*); Burton, 1938: 13; Koltun, 1964b: 81–82; Bergquist & Fromont, 1988: 80–81, pl. 36, F, pl. 37, A–C, table 61 (descr. etc.).

Crella fristedi (Dendy, 1924)
Dendy, 1924: 359–360, pl. XV, figs 5–8 (*Anchinoe*); Bergquist & Fromont, 1988: 79–80, pl. 36, B–E, table 60 (descr. etc.).

Crella incrustans (Carter, 1885)
Carter, 1885a: 353 (*Echinonema*), 355 (as *Plumohalichondria mammilata*); Ridley & Dendy, 1887: 156, pl. XXX, figs 4–4a, pl. XLVII, figs 5–4a (as *P. mammilata*); Lendenfeld, 1898: 220 (as *Echinonema levis*), 21 (as *Clathria macropora*), 222 (as *C. australis*); Hallmann, 1912: 164 (*Crella incrustans*), 164 (as *C. i.* var. *levis*); Hallmann, 1914: 267 (as *C. i.* var. *levis*); Dendy, 1924: 360–361, pl. XII, fig. 2, pl. XV, figs 9–11 (as *Anchinoe novae-zelandiae*); Brøndsted, 1924: 466–467, (as *A. novae zealandiae*); Bergquist, thesis 1961: 70–79 (*A. incrustans*); Bergquist, 1961[b]: 179, fig. 6a-c (as *A. novaezealandiae* Dendy), Tanita, 1967: 223–117, text-fig. 3, pl. 2, fig. 7 (Japan Sea, as *A novae-zealandiae*); Hogg, thesis 1967: table 5.2 (descr. and ecol. notes); Morton & Miller, 1968: 271, 390, 411, 573 (ecol. etc.), pl. 5 (col.); Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement); Gordon & Ballantine, 1977: 98 (listed from Leigh region); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Rho & Sim, 1979: 63, pl. 2, figs 1–3 (as *A. novaezealandiae* Dendy); Hoshino, 1981: 1124; Grange *et al.*, 1981: 220, 223 (fiord biol. as *A. novaezealandiae*); Liaaen-Jensen *et al.*, 1982: 167–174 *passim*, table 1 (carotenoids); Pritchard, 1984: 50 (descr., habitat etc.), fig. (p. 51), 134 (recorded as *C. novaezealandiae* and *C. incrustans* from the Cape Rodney to Okakari Point Marine Reserve; Kotua-Dickson, 1984: 10 (listed from Motukawao Is, off Coromandel Peninsula); Hoshino, 1987a: 29 (listed from "Japanese waters" as *Anchinoe novaezealandiae* Dendy, 1924); Bergquist & Fromont, 1988: 77–79, pl. 35, A–F, pl. 36, A–F, tables 57–59 (transf. to *Crella*, descr. etc.).

Crella sp. Ayling, 1976
Ayling, thesis 1976: —; Gordon & Ballantine, 1977: 98 (Ayling's record listed from Leigh region as *Anchinoe*); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve as *Anchinoe* sp.).

Genus **Naniupi** de Laubenfels, 1950

Naniupi novaezealandiae Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 82, pl. 37, D–F, pl. 38, A–B, pl. 62.

Family DESMACIDONIDAE
Genus **Chondropsis** Carter, 1886

Chondropsis kirki (Carter, 1881)

Carter, 1881: 374 (*Dysidea*); Carter, 1885a: 216; Lendenfeld, 1889: 611 (? as *Sigmatella australis fide* Dendy, 1894: 251), 620, pl. 40, fig. 2 (as *S. corticata* var. *papillosa* Marshall, 1880 *fide* Bergquist & Fromont, 1988: 43); Dendy, 1894: 257 (= ? *Psammascus kirki* (Carter)); Kirk *in* Hutton, 1904: 3254 (listed as *S. corticata* Lendenfeld, 1888 var. *papillosa* Marshall); Dendy, 1916b: 127 (refs & syn.); Dendy, 1924: 363 (in *Phoriospongia* from "Terra Nova" Stn 134, near Spirits Bay); Brøndsted, 1924: 448, fig. 7a-b (as *Gelliodes strongylofera* [see also Gordon & Ballantine, 1977: 8 (listed from Leigh region after Bergquist, thesis 1961)]; de Laubenfels, 1936: 99 (*Psamamscus*); de Laubenfels, 1948: 146 ("unrecognisable"); Pritchard, 1984: 44 (descr., habitat etc.), fig. on p. 45, 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Bergquist & Fromont, 1988: 43–44, pl. 14, D–F, pl. 16, A-B, tables 23–24 (descr., distrib., etc. syn.).

Chondropsis topsenti Dendy, 1894

Dendy, 1894: 254; Bergquist & Fromont, 1988: 44–45, pl. 16, C–F, tables 25–26 (descr., distrib. etc.).

Chondropsis sp. Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 45 ("... only one worn specimen has been collected from Muriwai Beach, hence full description cannot be undertaken at present ... This sponge could be *Chondropsis arenifera* Carter.").

Chondropsis sp. Pritchard, 1984

Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Desmacidon** Bowerbank, 1864

Desmacidon mamillatum Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 37–38, pl. 12, A–E, table 17 (presumably also includes *Desmacidon* n.sp. Bergquist, 1961); Bergquist, thesis 1961: 50, figs 3a-c, 4a, pls 30a, 41d, maps 6–7; Gordon & Ballantine, 1977: 98 (listed from Leigh region as *D.* n.sp. after Bergquist, 1961); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif. — note, this is an undescribed benthic species from lat. 35°S).

Desmacidon sp. Doak, 1971

Doak, 1971: fig. 10, pl. 12 (col.); Doak, 1974: 669 (habitat).

Desmacidon sp. Ballantine *et al.*, 1973

Ballantine *et al.*, 1973: 19, fig. 4 (Mimiwhangata).

Desmacidon sp. Grace, 1983

Grace, 1983: 105 (in "Very deep zone [i.e., 45–60 m, see figs 6 & 7], sublittoral rocky bottom, Hauraki Gulf).

Genus **Echinostylinos** Topsent, 1927

Echinostylinos reticulatus (Topsent, 1892)

Topsent, 1892: 91, pl. VI, figs 1–3 (*Esperiopsis*); Topsent, 1927: 8; Topsent, 1928: 207, pl. II, fig. 21, pl. VII, figs 15–16; Bergquist & Fromont, 1988: 45–46, pl. 17, A–D, table 27.

Genus **Guitarra** Carter, 1874

Guitarra antarctica var. **novaezealandiae** Dendy, 1924

Dendy, 1924: 336 ("Terra Nova" Stn 144, off Cape Maria van Diemen); Burton, 1929: 426 (as *G. fimbriata* incl. also *G. indica* Dendy, 1916); Lévi, 1963: 25 (*G. fimbriata indica*, off South Africa); Bergquist & Fromont, 1988: 41–42 (status etc. — "As there are obvious differences in the descriptions of the New Zealand specimens of *G. fimbriata* and *G. antarctica* var. *novaezealandae*, the use of a subspecific category is adopted until the type specimen of *G. antarctica* var. *novaezealandiae* can be examined.").

Guitarra fimbriata Carter, 1874

Carter, 1874: 21, pl. XIII, figs 2–5, pl. XV, figs 34; Brøndsted, 1924: 458–459, fig. 16 (as *G. bipocillifera* from Colville Channel, 35 fm); Burton, 1929: 426–428 (refs & syn.); Burton, 1932b: 287; de Laubenfels, 1955: E37; Koltun, 1958: 53; Koltun, 1959: 93, text-fig. 48, pl. 8, figs 2–3; Burton, 1959a: 231; Tanita, 1960: 18 (descr.), pl. 109, fig. 5; Koltun, 1962: 189; Koltun, 1964: 45 (diag., refs & syn.), pl. VII, figs 12–14; Descatoire, 1966: 242–244, text-fig. 7A, pl. 1, fig. 3; Koltun, 1969: pl. 4, map 6 (N.Z. and Antarctic distrib.); Koltun, 1970b: 195 (descr. etc.), fig. 20, pl. VIII, fig. 4; Hoshino, 1987a: 27 (listed from "Japanese

seas"); Bergquist & Fromont, 1988: 40–41, pl. 14, D–F, pl. 15, A–C, table 22 (descr., syn. etc.).

Genus **Isodictya** Bowerbank, 1864

Isodictya cavicornuta Dendy, 1924

Dendy, 1924: 335–336, pl. X, figs 2–3; Burton, 1929: 424 (Antarctic); Burton, 1938: 10 (*Platychalina*); Koltun, 1964b: 42 (diag.); Bergquist & Fromont, 1988: 39–40, pl. 13, D–E, table 20 (descr. etc.).

Isodictya microchela (Topsent, 1915)

Topsent, 1915: 37 (*Homoeodictya*); Burton, 1932: 286, pl. LI, fig. 5; Burton, 1938: 10 (*Platychalina*); Koltun, 1964b: 43 (diag.) (Macquarie Is.).

Genus **Plumocolumella** Burton, 1929

Plumocolumella novaezealandiae (Brøndsted, 1924)

Brøndsted, 1924: 460, figs 17a-d (*Desmacidon*); Burton, 1929: 425 (*Plumocolumella*); Bergquist & Fromont, 1988: 40, pl. 13, F, pl. 14, A–C, table 21 (descr. etc.).

Genus **Psammopemma** Marshall, 1880

Psammopemma crassum (Carter, 1885)

Carter, 1885: 211 (*Holopsamma*); Lendenfeld, 1889: 529–638 (*Psammopemma*); Kirk *in* Hutton, 1904: 324 (listed); Brøndsted, 1926: 322; Bergquist, thesis 1961: 162 (*Holopsamma*); Bergquist & Fromont, 1988: 45 (distrib., etc.: "The species has not been recollected and Brøndsted's specimen is lost, so the record cannot be verified.").

Psammopemma sp. "a" Brøndsted, 1926

Brøndsted, 1926: 296; Bergquist & Fromont, 1988: 45 ("This species was not fully described by Brøndsted, the type specimen is lost, and no new material has been collected.").

Psammopemma sp. "b" Brøndsted, 1926

Brøndsted, 1926: 297; Bergquist & Fromont, 1988: 45 (remarks, as for the preceding species).

Psammopemma sp. Bergquist, 1968

Bergquist, 1968: 63; Brøndsted, 1926: 319 (*Chondrosia collectrix* Lendenfeld, 1888, now = *C. clucalla* de Laubenfels, 1936: 184).

Genus **Psammascus** Marshall, 1880

Psammascus sp. Hogg, 1967

Hogg, thesis 1967: —; Gordon & Ballantine, 1977: 98 (listed from Leigh region following Hogg's record); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Genus **Strongylacidon** Lendenfeld, 1897

Strongylacidon conulosa Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 38–39, pl. 12, F, pl. 13, A–C, table 19.

Strongylacidon inaequalis (Hentschel, 1911)

Hentschell, 1911: 325, fig. 20 (*Batzella*); Lendenfeld, 1887: 763, pl. XXVII, fig. 27 (as *Cacochalina truncatella* var. *mollissima* from Port Chalmers, Dunedin); Burton, 1927a: 292 (varieties); Burton, 1934b: 550; Burton, 1959: 242 (*Strongylacidon*); Bergquist & Fromont, 1988: 31, 39 (" it must be noted as being a very doubtful record."). [See also remarks above under *Callyspongia ramosa*.]

Genus **Tetrapocillon** Brøndsted, 1924

Tetrapocillon novaezealandiae Brøndsted, 1924

Brøndsted, 1924: 457, fig. 15a-f; Lévi, 1963: 25–26 (descr. etc.), text-fig. 25, pl. II, fig. J (South Africa); Bergquist & Fromont, 1988: 46–47, pl. 17, E–F, pl. 18, A–B, table 28 (descr., distrib. etc.); Pritchard, 1984: 48 (descr., habitat etc.), fig. (p. 49), 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Family HYMEDESMIIDAE

Genus **Hymedesmia** Bowerbank, 1864

Hymedesmia anisostrongyloxea Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 66–67, text-fig. 7a, pl. 29, A-C.

Hymedesmia lundbecki Dendy, 1924

Dendy, 1924: 358–359, pl. XIV, figs 28–30; Gordon & Ballantine, 1977: 98 (listed from Leigh region following Ayling's 1976 thesis record); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Bergquist & Fromont, 1988: 65, table 6 (descr. etc.).

Hymedesmia microstrongyla Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 66, text-fig. 7b, pl. 28, E–F, table 47.

Hymedesmia sp. Hogg, 1967

Hogg, thesis 1967: —; Gordon & Ballantine, 1977: 98 (listed from Leigh region following Hogg's thesis record); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Hymedesmia n.sp. Doak, 1974

Doak, 1974: 625, 625 (habitat of an undescribed species).

Genus **Stylopus** Fristedt, 1885

Stylopus australis Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 68–69, text-fig. 7d, pl. 30, A–E, table 50: Prinsep *et al.*, 1989: 657–659 (new sterol — "obtained from the sponge *Stylopus australis* n.sp. (Battershill (Hymedesmiidae)"; "... collected by scuba diving in April 1986 from Goat Island Canyon, Leigh, off the North Island of New Zealand. A voucher specimen 86L02-01, is held at the Department of Chemistry, University of Canterbury.").

Stylopus lissostyla Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 68, text-fig. 7c, pl. 29, D–F, table 49.

Family ABYSSOCLADIDAE
Genus **Abyssocladia** Lévi, 1964

Abyssocladia bruuni Lévi, 1964

Lévi, 1964: 78, text-fig. 30 ("Galathea" Stn 661, Kermadec Trench).

Family MYCALIDAE
Genus **Aegogropila** Gray, 1867

Aegogropila flagelliformis Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 21, text-figs 6b-c, pl. 2, D–F, pl. 3, A–B, table 3.

Genus **Carmia** Gray, 1867

Carmia hentscheli Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 24, pl. 5, A–D, table 6.

Carmia macilenta (Bowerbank, 1866)

Bowerbank, 1866: 176–177 (*Hymeniacidon*); Topsent, 1924: 105, figs 111–112 (*Mycale*); Arndt, 1935: 48; de Laubenfels, 1936: 116 (*Carnia*); Little, 1963: 50–51, text-fig. 23; Lévi, 1963: 12 (descr. etc.), text-fig. 6; Bakus, 1966: 512 (*Carnia* returned to *Mycale*); Hogg, thesis 1967: 9, 59 (reprod.), figs 2.6, F–H, fig. 2.7, F, fig. 2.9, A–C, table 2.3 (larval characteristics); Bergquist & Sinclair, 1968: 428 *et seq.* (larval morphol., and behav.), text-fig. 1D, tables 1–2; Bergquist *et al.*, 1970: 247–271 *passim* (larval intertidal adapts); Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement); Bergquist, 1978: 183 (larval reactions, after Bergquist *et al.*, 1970); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve, as *Mycale*); Bergquist & Fromont, 1988: 22, text-fig. 6d, pl. 3, C–F, table 4 (descr., etc. transf. to *Carmia*).

Carmia tasmani Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 22–23, text-fig. 6c, pl. 4, A–F, table 5.

Genus **Esperiopsis** Carter, 1882

Esperiopsis crassofibrosa Brøndsted, 1923

Brøndsted, 1923: 139, fig. 198a-c; Bergquist & Fromont, 1988: 27 (remarks on alleged type specimen).

Esperiopsis edwardii (Bowerbank, 1866)

Bowerbank, 1866: 325 (*Isodictya*); Dendy, 1924: 340 (*Esperiopsis*); Burton, 1932b: 289–292, pl. LIV, figs 1–4 (review, detailed refs & syn.) (to *Amphilectus fucorum* (Esper, 1794: 278, pl. CLIX, figs 1–2 (*Spongia*); [see also Johnston, 1842: 112, pl. IX, pl. XII, fig. 2 (*Halichondria*); Lundbeck, 1905: 13, pl. VIII, fig. 2 (as *Esperiopsis normani*); Brøndsted, 1923: 130, figs 19a-c (as *E. crassofibrosa*), 138, figs 18a-b (as *E. normani*); Dendy, 1924: 340–341 (as *E. edwardii* (Bowerbank 1866)); Burton, 1929: 428 (all N.Z. spp. to *Esperiopsis villosa* (Carter) or to *Amphilectus fucorum* (Esper)); Burton, 1930a: 492–493 (geogr. and bathmetric distrib.); Burton, 1930c: 332 (Campbell I. record)]; Arndt, 1935: 53 (descr., distrib.), text-figs 92, 92A); Koltun, 1964: 39, pl. VII, figs 22–24 (diag., refs & syn.); Tanita, 1964: 18, text-fig. 1, pl. 1, fig. 5 (as *A. fucorum*); Koltun, 1969: 14 (as bipolar species); Desqueyroux, 1972: 35–36 (diag., refs & syn.), figs 119–121; Sim, 1981: 87, pl. 2, figs 4–5; Hoshino, 1981a: 174, text-fig. 80; Uriz, 1986: 18 (in key), fig. 104 (*Esperiopsis*); Hoshino, 1987a: 26 (listed from Japan as *A. fucorum*); Bergquist & Fromont, 1988: 27, pl. 6, D, table 8 (remarks etc. — "Burton's synonymy is clearly invalid and has served only to confuse the concept of the genus *Amphilectus* and the relationships between species referred to that genus and to *Esperiopsis*.").

Esperiopsis glaber Brøndsted, 1923

Brøndsted, 1923: 141, fig. 20a-c; Burton, 1929: 428 in new genus *Brondstedia*); de Laubenfels, 1936: 125; Bergquist & Fromont, 1988: 26–27, pl. 6, B–C (to *Esperiopsis*).

Esperiopsis megachela Dendy, 1924

Dendy, 1924: 341, pl. XIII, figs 21–25; Burton, 1929: 429 (*E. macrosigma* var. *novaezealandiae* and *E. megachela* synonymised with *E. villosa* (Carter, 1874: 213, pl. XII, figs 13–15, pl. XV, fig. 36 (*Esperia*); [see also Carter, 1882: 296 (*Esperiopsis*); Kirkpatrick, 1908: 35 (refs etc.), pl. XX, figs 3, 3a-c, pl. XXIV, figs 9a-b; Dendy, 1924: 341, pl. XIII, figs 14–20 (as *Esperiopsis macrosigma* Stephens, 1916 var. *novae-zealandiae* from "Terra Nova" Stn 90, Three Kings Is), 341–342, pl. XIII, figs 21–25 (as *E. megachela* from "Terra Nova" Stn 90)0; Stephens, 1921: 19, pl. II, fig. 4; Burton, 1929: 429–430 (refs & syn.); Burton, 1930a: 490-491 (geogr. and bathymetric distrib.); Koltun, 1959: 85, text-fig. 41, pl. VII, fig. 2; Koltun, 1964b: 38 (diag.); Koltun, 1969: pl. 4, map 8 (Antarctic distrib.)]; Lévi & Lévi, 1983: 259, text-fig. 21 (descr., etc., 1st record beyond N.Z. [*forma novaezealandiae* Dendy, 1924, off Three Kings Is, 182 m] of *E. macrosigma* Stephens, 1921 [off Ireland, 450–1325 m], from off New Caledonia, 250–375 m); Bergquist & Fromont, 1988: 28, pl. 7, B.

Esperiopsis normani (Bowerbank, 1866)

Bowerbank, 1866: 320 (*Isodictya*); Bowerbank, 1874: 141, pl. LVI, figs 1–5; Lundbeck, 1905: 13, pl. VIII, fig 2a-d; Brøndsted, 1923: 138; Bergquist & Fromont, 1988: 27 ("the record cannot be verified.").

Genus **Mycale** Gray, 1867

Mycale murrayi (Ridley & Dendy, 1886)

Ridley & Dendy, 1886: 338 (*Esperella*); Ridley & Dendy, 1887: 67, pl. XIII, figs 11, 13, 14, 16–18, pl. XIKV, figs 1-1a; Whitelegge, 1906: 469; Bergquist & Fromont, 1988: 20–21, text-fig. 6a, pl. 1, D–F, pl. 2, A–C, table 2 (descr. etc.).

Mycale novaezealandiae Dendy, 1924

Dendy, 1924: 339–340, pl. V, fig. 3, pl. XIII, figs 6–13; Bergquist & Fromont, 1988: 19, text-fig. 6a, pl. 1, A–C, table 1 (descr. etc.).

Mycale rara Dendy, 1896

Dendy, 1896: 18 (*Esperella*); Bergquist, 1961: 39 (*Mycale*); Bergquist & Fromont, 1988: 21 ("... the record ... from New Zealand must be regarded as doubtful.").

Mycale n.sp. Bergquist, 1961

Bergquist, thesis 1961: —; Gordon & Ballantine 1977: 98(listed from Leigh region after Bergquist's thesis record); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif. — note, this is an undescr. intertidal epizoitic sp. from lat. 46°S).

Mycale sp. Perry *et al.*, 1988

Perry *et al.*, 1988: 4850 (isolation of mycalamide A, an antiviral agent); Perry *et al.*, 1990: 223–227 (antiviral and antitumour agents, material from Otago Harbour, voucher specimens 87P0I–01, University of Canterbury Chemistry Department).

Genus **Paresperella** Dendy, 1905

Paresperella microsigma Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 25, pl. 5, E–F, pl. 6, A, table 7.

Family MYXILLIDAE
Genus **Allocia** Hallmann, 1920

Allocia chelifera (Hentschel, 1911)

Hentschell, 1911: 362 (*Spanioplon*); Hallmann, 1920: 768 (*Allocia*); Dendy, 1921: 70, pl. 14, fig. 3a-e; Bergquist & Fromont, 1988: 96 (redescr., distrib. etc.), text-fig. 8c, pl. 45, E–F, pl. 46, A–C, table 73.

* Genus **Antho** Gray, 1867

Antho brondstedi Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 97–98, text-fig. 8b, pl. 46, D–F, pl. 47, A–C, table 74.

Genus **Ectyodoryx** Lundbeck, 1909

Ectyodoryx crelloides (Brøndsted, 1924)

Brøndsted, 1924: 468–469, figs 23a-d (*Myxilla*); de Laubenfels, 1936: 84 (*Ectyodoryx*); Lévi, 1956a: 391 (*Myxilla*); Bergquist, thesis 1961: 148–150 (*Merriamium*); Bergquist & Fromont, 1988: 89 (descr. etc.), pl. 41, D–F, pl. 42, A, table 68.

Genus **Ectyomyxilla** Lundbeck, 1909

Ectyomyxilla kerguelensis (Hentschel, 1914)

Hentschel, 1914: 103, pl. IV, fig. 10, pl. VII, fig. 10

* cf. Lévi, 1960: 57–58 (diagnosis, status etc.), 76–80 (species etc.).

(*Myxilla*); Brøndsted, 1923: 142, figs 21a-d (as *Myxilla tornotata*); Dendy, 1924: 364–365, pl. XV, figs 16–21 (as *Crellomyxilla intermedia*); Brøndsted, 1924: 469 (as *C. intermedia* Dendy); Burton, 1929: 437–438 (refs & syn.); Burton, 1934a: 28; Burton, 1938: 13; Lévi, 1956b: 28–29, text-figs 4, 1–6 (Kerguelen Is record, descr. etc. as *Myxilla kerguelensis* Hentschel), 30–31 (Kerguelen Is record, descr. etc. as *M. chilensis* Thiele, 1905: 443, figs 22 & 62; notes on syn.), text-fig, 1–5; Lévi, 1963: 35–36 (descr. etc.), text-fig. 38; Koltun, 1954: 77, pl. XI, figs 24–28 (diag., refs & syn.); Boury-Esnault & van Beveren, 1973: 279–280, fig. 33 (as *E. kerguelensis*) incl. N.Z. records of Dendy and Brøndsted); Boury-Esnault & van Beveren, 1982: 83, pl. XIV, figs 24f-m (*Crellomyxilla*); Bergquist & Fromont, 1988: 87 (descr., as *Ectyomyxilla kerguelensis* (Hentschel, 1914), distrib. etc.), text-fig. 8d, pl. 39, E–F, pl. 40, A–B, table 66; Uriz, 1988: 72, text-fig. 47 (descr., as *Crellomyxilla chilensis* (Thiele, 1905), distrib. (incl. N.Z. Dendy, 1924 as *Crellomyxilla*), syn. incl. *Ectyomyxilla kerguelensis* (Hentschel, 1914), of Boury-Esnault, 1973.

Ectyomyxilla ramosa Bergquist & Fromont, 1988

Bergquist & Fromont, 1988: 87–89, pl. 40, C–F, pl. 31, A–C, table 67.

Genus **Iophon** Gray, 1867

Iophon laevistylus Dendy, 1924

Dendy, 1924: 347, pl. X, fig. 1a; Brøndsted, 1924: 461–462, fig. 18 (as *Iophonopsis major*), 462 (as *I. m.* var. *tenuis*); Burton, 1932b: 348 (Brøndsted's three N.Z. spp. to *laevistylus*); Bakus, 1966: 484; Batham, 1969: 78 (table II), 80 (ecol. at Glory Cove, Stewart Is.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: pl. 8a; Bergquist & Fromont, 1988: 91 (descr. etc.), pl. 47, E–F, pl. 43 A--D, table 70.

Iophon minor Brøndsted, 1924

Brøndsted, 1924: 462–463; Burton, 1932: 348 (as *I. laevistylus* Dendy, 1924); Gordon & Ballantine, 1977: 98 (listed from Leigh region following Bergquist's 1961 thesis record); Bergquist, 1978: 184 (substrate selection, on bivalve *Chlamys zealandiae* Gray, 1843); Doak, 1979: pl. 9 (col.); Pritchard, 1984: 42 (descr., habitat etc.), fig. on p. 43, 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Lawson *et al.*, 1984: 375–393, tables 2, 4, 5 etc. (fatty acid composition/sponge classification); Bergquist & Fromont, 1988: 91–94 (descr., remarks etc.), pl. 43, E–F, pl. 44, A–C, table 71.

Iophon proximum (Ridley, 1881)

Ridley, 1881a: 119, pl. C, fig. 8 (*Alebion*); Burton, 1932b: 296 (to *lophon*, syn. etc.), text-figs 21–24, pl. LVII, figs 1–13; Burton, 1938: 15; Bergquist, thesis 1961: 114–116; Bergquist, 1961b: 180, figs 7a-c (as *I. semispinosus*); Koltun, 1964b: 56–57 (diag., distrib., refs & syn.); Lévi, 1963: 38–39 (descr., etc.), text-fig. 42, pl. V, c, f, g; Bergquist *et al.*, 1970: 253 (assoc. with the shell of *Chlamys zealandiae* Gray, 1843); Doak, 1971: pl. 10 (col.), 12B; Desqueyroux, 1972: 22–23 (diag., distrib., syn.); Boury-Esnault, 1973: 280–281, fig. 34; Doak, 1974: 699 (habitat); Grace & Puch, 1977: 62 (transect, Moturoa Is, northeast N.Z.), fig. 10 (habitat, 40 m); Ayling, 1978: 9, 1 fig. (Cape Rodney to Okakari Point Marine Reserve habitats); Ritchie *et al.*, 1979: 50 (listed from Poor Knights Islands Marine Reserve); Westerskov & Probert, 1981: pl. 15 (col.); Ritchie *in* Tortell, 1981: 12 (habitat); Boury-Esnault & van Beveren, 1982: 89–90 (Kerguelen Is.); Bergquist & Fromont, 1988: 90–91 (descr. etc.), pl. 42, B–D, table 69; Seldes *et al.*, 1988: 299–300 (sterols); Uriz, 1988: 76–77 (descr., distrib. etc.), text-fig. 72, pl. 40, figs a-b, pl. 41.

Iophon sp. Ballantine *et al.*, 1973

Ballantine *et al.*, 1973: 19, fig. 4 (Mimiwhangata).

Iophon sp. Grace, 1983

Grace, 1983: 105 (in "very deep zone" [i.e., 45–60 m], sublittoral rocky bottom, Hauraki Gulf).

Genus **Lissodendoryx** Topsent, 1894

Lissodendoryx isodictyalis (Carter, 1882)

Carter, 1882a: 285 (*Halichondria*); Topsent, 1897: 456 (*Lissodendoryx*); Lundbeck, 1905: 154; Topsent, 1925: 701 (syn.); de Laubenfels, 1936: 93–94 (descr. etc.), pl. 11, fig. 2; Hartman, 1958a: 41 (syn.), fig. 11, table 1–2; Hentchel, 1965: 38 (syn.); Simpson, 1968: 81, pl. 16, figs 11–12; Kim *et al.*, 1968: 40, text-fig. 12, pl. 2, fig. 1; Hoshino, 1971: 23; Rho & Sim, 1972: 184; Thomas, 1973: 31 (descr., distrib. etc.), pl. II, fig. 3; Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement — note, pl. 38 as "a recent introduction to New Zealand from southeastern Australia"); Wiedenmayer, 1977: 135 (incl. syn.), figs 141–142, pl. 29, fig. 2; Bergquist *et al.*, 1977: 179–184 *passim* (morphol. of cilia of larvae); Bergquist, 1978: fig. 5.19c (spiculation), pl. 12b (SEM photo of larva); Pansini & Pronzato, 1981: 79 (table 1: 4 year settlement study); Hoshino, 1981a: 145, text-fig. 61; Fell *et al.*, 1984: 127–141 *passim* (life history, larval settlement); Soest, 1984: 54–57 (diag., descr. etc.), text-fig. 19, pl. V, figs

2–3; Pettit *et al.*, 1986: 415–421 (antineoplastic constituents); Hoshino, 1987a: 35 (listed from "Japanese waters"); Bergquist & Fromont, 1988: 85–86 (descr., distrib. etc.), pl. 39, B–D, table 65.

Genus **Myxilla** Schmidt, 1862

Myxilla columna Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 84–85, pl. 38, E–F, pl. 39, A, table 64.

Myxilla novaezealandiae Dendy, 1924
Dendy, 1924: 361–362, pl. X, fig. 6, pl. XV, figs 12–15b; de Laubenfels, 1950: 17 (*Burtonanchora*); Bakus, 1966: 415 (*Burtonanchora* as a syn. of *Myxilla*); Bergquist & Fromont, 1988: 83–84 (to *Myxilla*, descr. etc.), pl. 38, C–D, table 63.

Genus **Sigmarotula** Bergquist & Fromont, 1988

Sigmarotula lamellata Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 94–95, pl. 44, D–F, pl. 45, A–D, table 72.

Family PHORBASIDAE
Genus **Hamigera** Gray, 1867

Hamigera macrostrongyla Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 74, pl. 33, C–F, pl. 34, A, table 55.

Hamigera tarangaensis Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 74–75, pl. 34, B–F, table 56.

Genus **Phorbas** Duchassaing & Michelotti, 1864

Phorbas areolata Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 70–75, pl. 31, C–F, table 52.

Phorbas intermedia Bergquist, 1961
Bergquist, 1961a: 36, figs 5a-b; Hogg, thesis 1967: table 5.2 (descr. and ecol. notes); Morton & Miller, 1968: 66, 114 (ecol. etc.); Gordon & Ballantine, 1977: 98 (listed from Leigh region); Bergquist *et al.*, 1977: 179–184 *passim* (morphol. of cilia of larvae); Bergquist & Fromont, 1988: 70 (descr. etc.),, pl. 30, F, pl. 31, A–B, table 51.

Genus **Pronax** Gray, 1867

Pronax anchorata Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 72, text-fig. 7f, pl. 32, A–F, table 53.

Pronax fulva Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 72–73, text-fig. 7e, pl. 32, F, pl. 33, A–B, table 54.

Family TEDANIIDAE
Genus **Tedania** Gray, 1867

Tedania battershilli Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 61–62, pl. 26, C–F, pl. 27, A–B, table 43.

Tedania connectens (Brøndsted, 1924)
Brøndsted, 1924: 471–473, figs 25a-d (*Tedanione*); Burton, 1932b: 345 (*Tedania*); Gordon & Ballantine, 1977: 98 (listed as *T. annectens* [sic] from Leigh region after Bergquist's 1961 thesis record); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist & Fromont, 1988: 58–59 (descr. etc.), pl. 24, A–E, table 40.

Tedania diversirhaphidophora Brøndsted, 1923
Brøndsted, 1923: 133–134, figs 15a-e, 135–136, figs 16a-d (as *T. placentæformis*); Bergquist, 1961b: 183; Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Bergquist & Fromont, 1988: 59 (descr., remarks etc.), pl. 24, F, pl. 25, A–D, table 41.

Tedania purpurescens Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 62–63, pl. 27, C–F, table 44.

Tedania spinostylota Bergquist & Fromont, 1988
Bergquist & Fromont, 1988: 58–61, pl. 25, E–F, pl. 26, A–B, table 42.

Tedania n.sp. Bergquist & Sinclair, 1973
Bergquist & Sinclair, 1973: 34–44 *passim* (larval settlement — note p. 40, ref. as "undescribed species").

Tedania sp. Hogg, 1967
Hogg, thesis 1967: —; Gordon & Ballantine, 1977: 98 (listed from Leigh region after Hogg's thesis record).

Tedania sp. Doak, 1974
Doak, 1974: 669 (habitat); Doak, 1979: 10, 30.

Tedania sp. Ritchie *et al.*, 1979

Ritchie *et al.*, 1979: 49 (listed from Poor Knights Islands Marine Reserve); Ritchie *in* Tortell, 1981: 11 (algal forest habitat).

Genus **Tedaniopsis** Dendy, 1924

Tedaniopsis turbinata Dendy, 1924

Dendy, 1924: 357–370, pl. XI, figs 2–3, pl. XIV, figs 31–35; Burton, 1932b: 346 (*Tedania*); Bergquist & Fromont, 1988: 64 (descr. etc.), pl. 28, A–D, table 45.

Order HALICHONDRIDA
Family HALICHONDRIIDAE
Genus **Ciocalypta** Bowerbank, 1864

Ciocalypta penicillus Bowerbank, 1864

Bowerbank, 1864: 180–181, pl. XXX, figs 360–361; Bowerbank, 1866: 81–82; Bowerbank, 1874: 33, pl. XIII, figs 2–4; Carter, 1883: 323, pl. XIV, fig. 15 (as *Leucophloeus massalis*); Carter, 1885: 366 (as *C. penicillus* var. *aciculata*), 366 (as *L. massalis*); Dendy, 1897: 238–239 (descr.); Topsent, 1921: 687 (syn.); Brøndsted, 1923: 156, figs 30a-d (as *Sigmaxinella papillata*); Brøndsted, 1924: 474–475, figs 27a-b (as *Axinella colvilli*), 477–479, fig. 31 (as *Hymeniacidon novaezealandiae*); Arndt, 1928: 54–55 (descr., discuss., syn.), text-figs 60–61; Burton, 1934b: 564; Arndt, 1935: 105 (descr., distrib., refs & syn.), text-figs 225a-d; de Laubenfels, 1936: 130 (as *Axiamon novaezealandiae*); Burton, 1956: 135–136; Burton, 1959a: 264 (detailed refs & syn. in *Ciocalypta*); Burton, 1959b: 50 (distrib., syn.), 71; Wells *et al.*, 1960: 226, fig. 49 (good illus.); Bergquist, 1961b: 187, figs 11a-b (as *Axiamon novaezealandiae* (Brøndsted, 1924)); Bergquist, 1967: 166 (Hawaii); Bergquist, 1968: frontis. (col.); Bergquist, 1970: 12, 35 (descr. etc., refs & syn.), pl. 8, figs A-B, pl. 19, fig. D, pl. 20, fig. A, table 9; Gordon & Ballantine, 1977: 97 (listed from Leigh region); Soest, 1977: 270, pl. 3, fig. C; Bergquist, 1978: 205 (biochem. diversity); Pritchard, 1984: 56 (descr., habitat etc.), fig. on p. 57, 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Uriz, 1986: 19 (in key), fig. 108; Tanita, 1989: 110–111 (descr., refs & syn.), text-fig. 66, pl. 11, fig. 4.

Ciocalypta polymastia (Lendenfeld, 1888)

Lendenfeld, 1888: 186, pl. IV, fig. 1 (*Stylotella*); Hallmann, 1914: 353, fig. 7 (*Ciocalypta*); Hogg, 1966: 58 (in key), 61 (first N.Z. record listed from Auckland area); Bergquist, 1970: 12, 34 (descr. etc.), pl. 7, fig. D, pl. 13, fig. C, pl. 19, fig. C, table 26; Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Ciocalypta sp. Grace & Grace, 1976

Grace & Grace, 1976: 99 (in benthic community, Great Mercury Is).

Genus **Cladochalina** Schmidt, 1870

Cladochalina dendyi Burton, 1929

Burton, 1929: 421; Dendy, 1924: 325 (as *Chalina oculata* var. *novae-zealandiae*); Koltun, 1964: 107–108 (diag.), pl. XIV, fig. 7.

Genus **Halichondria** Fleming, 1828

Halichondria intermedia Brøndsted, 1923

Brøndsted, 1923: 119–120, fig.2; Morton & Miller, 1968: 271; Bergquist, 1970: 12, 34.

Halichondria knowltoni Bergquist, 1961

Bergquist, 1961b: 186, fig. 10; Brøndsted, 1924: 450–451, fig. 9 (as *H. reticulata*, pre-occupied for fourth time, see de Laubenfels, 1936: 133); Ralph & Hurley, 1952: 5, tables I–II (wharf pile fauna as *H. reticulata* Brøndsted); Morton & Miller, 1968: 418 (ecol. as *H. reticulata*); Bergquist, 1970: 12, 32 (descr. etc.).

Halichondria moorei Bergquist, 1961

Bergquist, 1961a: 40–41, figs 11a-b; Hogg, 1966: 58 (in key); Morton & Miller, 1968: 66, 112, 389 (ecol. etc.), pl. 5 (col.); Bergquist & Sinclair, 1968: 430 *et seq.* (larval morphol. and behav.), text-fig. 1C, table 1–2; Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Bergquist, 1970: 12, 32–33 (descr. etc.), frontis; Bergquist *et al.*, 1970: 247–271 (intertidal adapts); Gordon & Ballantine, 1977: 97 (listed from Leigh region after Hogg, thesis 1967); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Green, 1977a: 85–86 (method for cell/surface contact in SEM); Bergquist & Green, 1977b: 289–302, pl. 1b-c, 2, 3b-c, e, 4b, 5c (larval settlement and metamorphosis, ultrastructure); Evans, 1977: 427–433, pls I–III (ultrastructure of larvae); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: 106 (larval release time), 132 (ovocyte prod.), 182 (larval movement), 184 (substrate selection), 185 (larval behav. and habitat), pl. 12a (SEM photo of lava); Gregson *et al.*, 1979: 63 (anti-inflammatory constituent; Auckland Harbour); Bergquist *et al.*,

1980: tables 1, 2 & 4 (sterol composition/sponge classification); Green & Bergquist, 1980: 153–158 (cell membrane specialisations); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Pont Marine Reserve); Bradstock, 1985: 105, fig.; Bergquist & Glasgow, 1986: 111–122 (larval cells etc.); Lawson *et al.*, 1986: 19–26 (chemistry, fatty acids); Lawson *et al.*, 1991: 51–54.

Halichondria panicea (Pallas, 1766)

Pallas, 1766: 388 (*Spongia*); Johnston, 1842: 114, pl. XI, fig. 5 (*Halichondria*) (earlier syn.); Bowerbank, 1866: 229; Bowerbank, 1874: 229, pls XXXIX–XL; Ridley & Dendy, 1887: 2–3 (refs & syn.), pl. II, figs 2–3; Dendy, 1905: 57 (refs & syn.); Dendy, 1916b: 112–113 (descr., etc.); Brøndsted, 1924: 451; Wilson, 1925: 394–396; Burton, 1929: 321–322; Brøndsted, 1930: 1–13 (biometry), 3 figs; Vosmaer, 1932: 522 (detailed syn.); Burton, 1932a: 199, pl. 7, figs 5–9; Burton, 1935b: 75 as *H. panicea* and as *Topsentia fibrosa*); Arndt, 1935: 103; Burton, 1956: 136; Lévi, 1955b: 32 (Kerguelen Is), text-fig. 6; Hartman, 1958b: 24 (syn.); Koltun, 1958: 70; Tanita, 1958: 134, text-fig. 6, pl. 3, figs 11–15; Koltun, 1959: 205, text-fig. 163, pl. 36, fig. 2, pl. 37, fig. 3; Bergquist, 1961a: 41; Koltun, 1962: 197; Tanita, 1963: 125; Koltun, 1964b: 90 (diag., distrib., refs); Tanita, 1964: 18; Graat-Kleeton, 1965: 167–168, fig. 1; Yazykov, 1965a-c: 96–101, 690–699, figs (cellular aggreg. etc.); Leloup & Polk, 1967: 20, 22, figs 9–11; Morton & Chapman, 1968: 24 (habitat at Leigh); Morton & Miller, 1968: 114, 271, 572 (ecol. etc.); Tanita, 1968: 52; Kim *et al.*, 1968: 40, text-fig. 9, pl. 2, fig. 8; Juniper & Steele, 1969: 161–162; Rho *et al.*, 1969: 155, pl. 1, figs 2–4; Hoshino, 1970: 221; Bergquist, 1970: 12, 33–34 (descr., distrib. etc.), pl. 7, fig. C, pl. 19, fig. B; Bergquist *et al.*, 1970: 247–271 *passim* (intertidal adapts); MacLennan, 1970: 299–334 *passim*, table I (cellular aggreg.); Curtis, 1970: 334–352 (cellular aggreg.); Korotkova, 1970: 423–436 *passim*, fig. 5 (regen., embryogenesis, refs to Korotkova, 1961–68); Hoshino, 1971: 23; Robbins, 1971: 36–38 (population etc.); Vaskovsky *et al.*, 1972: 777–784 (arsenic content); Korotkova, 1972: 74–109 (regener.); Sarà, 1972: 786 (in key etc.), fig. 7H; Rasmussen, 1973: 17; Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement); Cimino *et al.*, 1973: 1063–1064 (chemistry); Anger [1972] 1973: 80–83 (hydroid parasite); Vogel, 1974: 443–456 (water flow); Hoshino, 1974: 10; Hoshino, 1975b: 14, pl. 1, figs 4–6; Fletcher & Jones, 1975: 1 *et seq.*; Reiswig, 1975a: 493–502 (water currents); Hoshino, 1976: 6; Frith, 1976: 353–362 (commensals); Gordon & Ballantine, 1977: 97 (listed from Leigh region after Hogg, thesis 1967); Soest, 1977: 268; Dembitsky *et al.*, 1977: 530–533 (lipids); Bergquist *et al.*, 1977: 179–184 *passim* (morphol. of cilia in larvae); Bergquist, 1978: 40, 41 (table 6, pumping rate, after Jørgensen, 1955); Gregson *et al.*, 1979: 1108–1108 (fluorine as major constituent); George & George, 1979: 15, pl. 5/7 (habitat etc.); Forester, 1979: 1–10 (scallop/sponge assoc.); Bakus & Abbott, 1980: 28–29 (refs), 1 fig.; Bergquist *et al.*, 1980: tables 1, 2 & 4 (sterol composition/sponge classification); Peattie & Hoare, 1981: 621–635 (ecol./assoc. fauna etc.); Hoshino, 1981a: 177, text-figs 82; Liaaen-Jensen *et al.*, 1982: 167–174 *passim*, table 1 (carotenoids); Makrushin, 1982: 51–52 (gemmules); Langenbuch, 1983: 337–346 (water-conducting system); Bongers, 1983: 39–46 (bionomics of commensal nematode); Kozloff, 1983: pl. 1 (col.); Palumbi, 1984: 1478–1480 (wave interaction); Kostetsky, 1984: 46–53 (phospholipid content); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Christensen, 1985: 5–7 (assoc. with the green alga *Microspora ficulinae*); Richter, 1985: 141–149 (substrate/fungus assoc. etc.); Barthel, 1985: 1–12 (role in ecosystem); Dembitsky & Chelomin, 1985: 54, 57 (lipids); Lawson *et al.*, 1986: 19–26 *passim* (fatty acid localisation); Dams, 1986: 882 (RNA sequence analysis); Bergquist & Glasgow, 1986: 111–122 *passim* (larval ciliated epithelium/metamorphosis); Amano, 1986: 371–378; Barthel, 1986: 291–298 (substrate specificity/growth/reprod.); Palumbi, 1986: 208–214 (wave interaction); Barthel & Theede, 1986: 75–82 (rearing techniques); Uriz, 1986: 19 (in key), fig. 107; Sims & Bakus, 1986: 16; Hoshino, 1987: 21 (listed from "Japanese waters"); Costello & Myers, 1987: 115–121 (amphipod fauna); Hummel *et al.*, 1988: 195–198 (bacterial growth/mass mortality etc.), figs 1–2; Barthel, 1988: 87–93 (biomass prod./energy budget etc.); Wolfrath & Barthel, 1989: 81–94 (faecal-pellet prod.); Christophersen *et al.*, 1989: 459–461 (source of stench); Tanita, 1989: 108 (descr., detailed refs); Lawson *et al.* [1985] 1990: 51–54, fig. 1] *in* Rützler, 1990: q.v., (fatty acid/membranes etc.); Barthel, 1991: 387–394 (growth forms); Moss, 1992 : 48.

Halichondria punctata Bergquist, 1970

Bergquist, 1970: 12, 34 (new name for *H. incrustans* of Brøndsted, 1923: 117–119, figs 1a-b, preocc. for third time, see de Laubenfels, 1936: 133).

(?) **Halichondria** sp. Skerman, 1958

Skerman, 1958: 228 (fouling at Port of Lyttelton).

Genus **Trachyopsis** Dendy, 1905

Trachyopsis halichondrioides Dendy, 1905

Dendy, 1905: 147, pl. X, fig. 10; Bergquist, 1961b: 185, figs 9a-b (as *Halichondria rugosa* Ridley & Dendy, 1887: 4–5); Bergquist, 1970: 12, 34 (remarks distrib.); Vacelet *et al.*, 1976: 76 (descr. etc.), text-fig. 51, pl. II, fig. d.

Family HYMENIACIDONIDAE
Genus **Hymeniacidon** Bowerbank, 1861

Hymeniacidon conica (Kirk, 1909)

Kirk, 1909: 539, pl. XXV, figs 1–3 (*Stylohalina*); de Laubenfels, 1936: 139 (*Hymeniacidon*); Bergquist, 1970: 12, 38 (remarks).

Hymeniacidon hauraki Brøndsted, 1924

Brøndsted, 1924: 477, fig. 30; Bergquist, 1961a: 41, fig. 12 (as *Axiamon erecta* (Brøndsted, 1924: 449, text-figs 32a-b); Bergquist, 1970: 12, 35–36, pl. 8, figs C–D, pl 17, fig. B; Gordon & Ballantine, 1977: 97 (listed from Leigh region after Bergquist, 1970); Bergquist *et al.*, 1980: tables 1 & 2 (sterol composition/sponge classification); Pritchard, 1984: 54 (descr., habitat etc.), fig. on p. 55, 134 (recorded from the Cape Rodney to the Okakari Point Marine Reserve).

Hymeniacidon indistincta Brøndsted, 1923

Brøndsted, 1923: 146–147, fig. 24; Bergquist, 1970: 12, 36.

Hymeniacidon perleve (Montagu, 1818)

Montagu, 1818: 86 (*Spongia*); Bowerbank, 1866: 166 (as *H. caruncula*), 168 (as *H. sanguinea*); Bowerbank, 1874: 81, pl. 32, figs 1–4 (as *H. caruncula*), 81, pl. 32, figs 5–8 (as *H. sanguinea*); Arndt, 1935: 105 (descr. etc. as *H. sanguinea*); Burton, 1956: 111–147 (*H. perlevis*); Burton, 1959b: 47; Bergquist, 1961a: 41 (first N.Z. record as *H. perlevis*); Hogg, 1966: 58 (in key as *H. perleve*), 61 (listed from Auckland area); cf. Borojevic *et al.*, 1968: 17 (*H. sanguinea*, refs); Morton & Chapman, 1968: 17, 28 (habitat at Leigh); Morton & Miller, 1968: 66, 112, 272, 278, 386, 410, 542 (ecol. etc.), pl. 5 (col.); Juniper & Steele, 1969: 160; Bergquist & Hogg, 1969: 205–220 *passim* (biochem.); Stone, 1970: 443–459, figs 1–11 (growth and reprod.); Bergquist, 1970: 12, 36 (descr. etc.), pl. 9, figs A & D, pl. 20, figs B–C; Bergquist *et al.*, 1970: 247–271 *passim*, figs 2–3 (reprod. adapts); Erdman & Thomson, 1972: 5163–5173; Stone, 1972: 203–206 (spicule extrusion); Bergquist & Sinclair, 1973: 35–44 *passim* (larval settlement); cf. Cimino *et al.*, 1975: 756–757 (chemistry of *H. sanguinea*); cf. Pansini & Pronzato, 1975: 21–32 (*H. sanguinea*, as pollution indicator); Frith, 1976: 353–362 (commensals); Luckens, 1976: 18, 612 (rocky shore succession, Auckland); Gordon & Ballantine, 1977: 97 (listed from Leigh after Hogg, thesis 1967); Bergquist *et al.*, 1977: 179–184 (morphol. of cilia of larvae); Tietz & Robinson, 1977: 56, pl. 29 (col.); Soest, 1977: 270–271, text-fig. 5 (spicules); Evans & Bergquist, 1977: 191–199 *passim* (biochem./taxon.); Bergquist & Bedford, 1978: 215–221 *passim* (antibacterial activity, signif.); Bergquist, 1978: 132 (ovocyte production); George & George, 1979: 15 (descr., habitat etc.), pl. 5/2; Bergquist *et al.*, 1980: tables 1 & 2 (sterol composition/sponge classification); Meinkoth, 1981: fig. 6 (col.); Kotua-Dickson, 1984: 10 (listed from Motukawao Is. off Coromandel Peninsula); Pritchard, 1984: 134 (recorded from the Cape Rodney to Okakari Point Marine Reserve); Costello & Myers, 1987: 115–121 (amphipod fauna); Tanita, 1989: 112–113 (descr., syn. incl. *H. caruncula* Bowerbank, 1866 (and *H. sanguinea* Bowerbank, 1866); Moss, 1992: 48.

Hymeniacidon racemosa Brøndsted, 1924

Brøndsted, 1924: 476–567, fig. 29; Bergquist, 1970: 12, 37; Gordon & Ballantine, 1977: 97 (listed from Leigh region after Bergquist, 1970).

Hymeniacidon spherodigitata Bergquist, 1970

Bergquist, 1970: 11, 37–38, pl. 9, figs B–C, pl. 11, fig. B, pl. 20, fig. D, table 11; Gordon & Ballantine, 1979: 97 (listed from Leigh region after Bergquist, 1970).

Genus **Acanthella** Schmidt, 1862

Acanthella cristagalli (Dendy, 1924)

Dendy, 1924: 365–366, pl. XII, fig. 8 (*Tedania*); Burton, 1932: 346 (*Acanthella*); Bergquist, 1970: 11, 38 (remarks), pl. 13, fig. D.

Acanthella sp. Lawson *et al.*, 1984

Lawson *et al.*, 1984: 373–393 *passim*, tables 2, 4, 5 (fatty acid composition/sponge classification).

* Class CALCAREA

* Note revision of the supraspecific classification of the Subclass Calcinea by Borojevic *et al.*, 1990: 243–276 (in which all existing generic taxa are redefined and discussed); p. 247, diagnosis of Class Calcarea Bowerbank, 1864 and of Subclass Calcinea Bidder, 1898; p. 249, of Order Clathrinida Hartman, 1958 emended, Family Clathrinidae Minchin, 1900; p. 250, of Genus *Clathrina* Gray, 1867; p. 273, key to genera of the Calcinea. See also useful summaries in the re-examination of Bidder's (1898) classification of the Calcarea by Hartman (1958a: 97–110, refs etc).

Subclass CALCINEA
Order CLATHRINIDA
Family CLATHRINIDAE
Genus **Ascandra** Haeckel, 1872

Ascandra sp. Bergquist *et al.*, 1986

Bergquist *et al.*, 1986: 106 (table 1), 109 (table 3), 110 (table 4) (Hen & Chickens Is., sterol composition/ classification etc.); cf. Borojevic, 1966a: 357–367 (generic discuss. etc.).

Genus **Clathrina** Gray, 1867

Clathrina coriacea (Montagu, 1818)

Montagu, 1818: 116 (*Spongia*); Bowerbank, 1866: 34; Haeckel, 1872: 24 (*Ascetta*), pl. III, pl. V, fig. 2; Bowerbank, 1874: pl. III (*Leucosolenia*); Burton, 1936: 9, 26, 29–30, 32–34, 117, 125–127, 135, 137, 156–157, 159, 183–215, 583–584, text-figs 36–75 (review of species, including as synonyms:

1. Pp 8, 32, 124, 186–188, 194, 580, text-figs 39–40, "named form" *Leucosolenia cerebrum* (Haeckel, 1872); see also Haeckel, 1872: 54, pl. VIII, figs 1–14, pl. X, fig. 2 (*Acaltis*); Kirk, 1896: 207 (*Leucosolenia*); Kirk *in* Hutton, 1904: 332 (listed); Dendy & Row, 1913: 724; Topsent, 1936: 17, figs 8–9 (review); Tuzet, 1947: 127–148 (oogenesis/ reprod.); Tuzet, 1948: 103–114 (early develop.); Fell, 1950: 5; [see also Farquhar, 1907: 132 (bipolarity) and additional refs in Burton, 1963: 186; Borojevic *et al.*, 1968: 31];
2. Pp 8, 125, 188–189, 200, 580, text-fig. 41, "named form" *Leucosolenia clathrus* (Schmidt, 1864); see also Schmidt, 1864: 24, pl. III, fig. 3 (*Grantia*); Kirk, 1896: 206 (*Leucosolenia*); Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 725; Topsent, 1936: 7, fig. 3 (review); Fell, 1950: 4 [see also Farquhar, 1907: 132 (bipolarity) and additional refs in Burton, 1963: 188; also see Morton & Miller, 1968: 111, 357, text-fig. 40d (as *L. clathrus*); Borojevic *et al.*, 1968: 31; Uriz, 1986: 11 (in key), fig. 2; Sim & Bakus, 1986: 4; Borojevic *et al.*, 1990: fig. 5.5].
3. Pp 33, 125, 215, text-fig. 78, "named form" *Leucosolenia laxa* (Kirk, 1896); see also Kirk, 1896: 208, pl. IV, fig. 1a-i; Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 722; Fell, 1950: 4,; Burton 1963: 215 (for Japanese refs) [see also Morton & Miller, 1968: 111 (ecol. note)];

Borojevic & Grua, 1965: — (Kerguelen Is.); Borojevic, 1967: 188–189, text-fig; Tanita, 1967: 112, pl. 1, fig. 1; Borojevic *et al.*, 1968: 31–32 (ecol., refs); MacLennan, 1970: 318 *passim*, table III (cellular aggreg.); Tuzet, 1970: 437 *et seq.* (larval symmetry etc., refs); Borojevic, 1971: 114 (Kerguelen Is.), fig. 1; Sarà, 1972: 60 (in key, etc.), figs 4B–C; Johnson, 1976: 1–442 *passim*; Gordon & Ballantine, 1977: 97 (listed from Leigh region); Soest, 1977: 264, pl. 1, fig. c; Johnson, 1977: 1669–1677, figs (external and spicule morphol., use in taxon.); Johnson, 1978a: 73–79 (reprod. cycle); Johnson, 1978b: 570–574, fig. 1 (life cycle stages, use in taxon., syn.); Bergquist, 1978: fig. 5.3 (choanocytes, after Minchin, 1900); Johnson, 1979: 183–191 (gametogenesis, embryology etc.); George & George, 1979: 13 (desc., habitat), pl. 1/1, 1/3; Pritchard, 1984: 136 (listed from the Cape Rodney to Okakari Point Marine Reserve, as *Leucosolenia coriacea*); Sim & Bakus, 1986: 4 (descr. etc.); Uriz, 1986: 11 (in key), fig. 1.

Clathrina sp. Green & Bergquist, 1980

Green & Bergquist, 1980: 153–158 (cell membrane specialisation).

Clathrina sp. Pritchard, 1984

Pritchard, 1984: 130 (descr., habitat, distrib., etc.), fig. on p. 129, 136 (listed from the Cape Rodney to Okakari Point Marine Reserve).

* Genus **Dendya** Bidder, 1898

Dendya poterium (Haeckel, 1872)

Haeckel, 1872: 17, pl. II, figs 8–9 (*Ascetta primordialis* var. *poterium*); Burton, 1963: 29–30, 33–34, 125–127, 135, 137, 141, 216–231, text-figs 79–98, review of species, including as synonyms:

1. Pp 37, 219, 580, text-fig. 81 "named form" *Leucosolenia challengeri* (Poléjaeff, 1883); see also Poléjaeff, 1883: 38, pl. I, fig. 1, pl. III, fig. 4; von Lendenfeld, 1885: 1085 (*Ascetta*); Kirk, 1896: 207 (*Leucosolenia*); Kirk *in* Hutton 1904: 322 (listed); Dendy & Row, 1913: 724; Fell, 1950: 5; [see also Borojevic & Grua, 1965: 7–10 (Kerguelen Is and N.Z. as *Clathrina challengeri*), text-figs 2A–C; Borojevic, 1971: 114–154 (Kerguelen Is., descr., distrib., incl. N.Z. records of Kirk and Brøndsted as *Leucosolenia intermedia*, syn. etc.), fig. 2; Sarà *et al.*, 1974; 11–16 (aggreg. of *Clathria challengeri*)];

* *Dendya*, generic diagnosis in Borojevic *et al.*, 1990: 254 (the only included species is *D. tripodifera* Carter, 1885 — see p. 254, fig. 11 for inclusion in new family Soleniscidae; p. 273, *Dendya* in key to the genera of the Calcinea).

2. Pp 34–35, 125, 218–219, 221, 586, text-fig. 82 "named form" *Leucosolenia clathrata* (Carter, 1883); see also Carter, 1883: 33, pl. 1, figs 13–17 (*Leucetta*); Carter, 1891: 68 (as *Leucosolenia tripodifera* var. *gravida*); Kirk, 1896: 208, pl. IV, figs 2a-j (as *L. intermedia*); Kirk *in* Hutton, 1904: 322 (listed as *H. intermedia* Kirk); Dendy & Row, 1913: 724 (*L. clathrata*, and as *Grantia cliftoni* Bowerbank); Brøndsted, 1926: 298 (as *L. intermedia* Kirk); Fell, 1950: 4 (as *L. intermedia*); Burton, 1963: 218 (as *D. poterium*; note Japanese refs).

3. Pp 29, 35, 37, 125, 223, 226, 590, text-fig. 87 "named form *Leucosolenia osculum* (Carter, 1886); see also Carter, 1886a: 503–505 (*Clathrina*); Dendy, 1889: 69 (*Leucosolenia*); Dendy, 1891: 62, pl. II, figs 1–2, pl. VIII, figs 1–4, pl. XI, fig. 2 (as *Leuco solenia proxima* n.sp. [see Ayling *et al.*, 1982: 104 re Dendy's original material]; Kirk, 1896: 207 (as *L. proxima*); Kirk *in* Hutton, 1904: 322 (listed as *L. proxima* Dendy); Dendy & Row, 1913: 725 (*L. osculum*), 727 (*L. proxima*); Tanita, 1942: 72 (*L. osculum*), 73 (*L. proxima*); Fell, 1950: 5 (*L. proxima*); [see also Morton & Miller, 1968: 111 (as *L. proxima*)];

4. Pp 36–37, 198, 225, 590, text-fig. 90 "named form" *Leucosolenia protegenes* (Haeckel, 1872); see also Haeckel, 1872: 17 (*Ascetta primordialis* var. *protogenes*); Dendy, 1891: 58, pl. III, fig. 1, pl. XI, fig. 1 (*Leucosolenia*); Dendy & Row, 1913: 726; Brøndsted, 1923 (as *Clathria*); Brøndsted, 1926: 297–298; Fell, 1950: 5; Burton, 1963: 2245 (refs as *Dendya poterium* (Haeckel)).

5. Pp 36–37, 126, 227, text-fig. 92 "named form" *Leucosolenia rosea* Kirk, 1896; see also Kirk, 1896: 209, pl. III, fig. 1; Kirk *in* Hutton, 1904: 322 (listed); Dendy & Rowe, 1913: 727; Tanita, 1943: 79; Fell, 1950: 4 (see also Morton & Miller, 1968: 111)].

* Genus **Leucettusa** Haeckel, 1872

Leucettusa corticata (Haeckel, 1872)

Haeckel, 1872: 129, pl. XXII, figs 4–8 (*Leucetta*); Burton, 1963: 41, 49, 52, 147, 549–553, text-figs 353–357, review of species, including as synonyms:

1. Pp 131–552–553, text-fig. 337, "named form" *Leucandra connectens* Brøndsted, 1926: 308–310, text-fig. 8;

2. Pp 50, 52, 127, 550–551, "named form" *Leucettusa sambucus* (Preiswisch, 1904); [see also Preiswisch, 1904: 12–14, pl. 3, fig. 7 (*Leucetta*) (Chatham Is.); Dendy & Row, 1913: 739 (*Leucettusa*)].

Leucettusa imperfecta (Polćjaeff, 1883)

Polćjaeff, 1883: 67–68, pl. VII, figs 9a-e (*Leucetta*); Burton, 1963: 29–30, 49–52, 127, 132, 136, 147, 553–557, 598, text-figs 358–361, review of species, including as synonyms:

1. Pp 50–51, 127, 555, 598, text-fig. 359, "named form" *Leucettusa lancifer* Dendy, 1924; see also Dendy, 1924: 278–280, pl. I, figs 11–18 ("Terra Nova" Stn 90, Three Kings Is.); Brøndsted, 1926: 301; Burton, 1929: 402 (Antarctic) [see also Bergquist, 1978a: pl. 8, fig. 5; Doak, 1979a: pl. 3 (col.); Westerskov & Probert, 1981: pl. 18 (col.); Ritchie *in* Tortell, 1981: 11 (algal-forest habitat); Pritchard, 1984: 128 (descr., habitat etc.), fig. on p. 129, 136 (listed from the Cape Rodney to Okakari Point Marine Reserve)].

2. Pp 50, 52, 127, 555, "named form" *Leucettusa mariae* Brøndsted, 1926: 302–303, text-fig. 3;

3. Pp 50, 52, 127, 555, "named form" *Leucettusa pyriformis* Brøndsted, 1926a: 301–302, text-fig. 4;

4. Pp 132, 556, "named form" *Leucandra schauinslandi* (Preiswich, 1904); see also Preiswich, 1904: 10, pl. 2, figs 1-6 (*Leucetta*); Dendy & Row, 1913: 774 (*Leucandra*)).

5. Pp 50–52, 599, "named form" *Leucettusa tubulosa* Dendy, 1924; see also Dendy, 1924: 276–278, pl. I, figs 1–10 ("Terra Nova" Stn 90, Three Kings Is).

George & George, 1979: 13 (descr. etc.), pl. 1/8

Leucettusa sp. Pritchard, 1984

Pritchard, 1984: 136 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

* Subclass CALCARONEA
Order LEUCOSOLENIIDA
Family LEUCOSOLENIIDAE
Genus **Leucosolenia** Bowerbank, 1861

Leucosolenia asconoides (Carter, 1886)

Carter, 1886: 134–135 (*Aphroceras*); Burton 1963: 29–30, 34, 38, 126, 135, 137, 182–183, 577, text-fig. 35, review of species, including as synonym:

* *Leucettusa*, generic diagnosis in Borojevic *et al.*, 1990: 258–259; p. 274, in key to the genera of the Calcinea.

* Note discussion of relationships of Subclass Calcaronea to Subclass Calcinea by Borojevic *et al.*, 1990: 244–247.

P. 182, (named form" *Leucosolenia stolonifer* Dendy, 1891; see also Dendy, 1891: 46, pl. I, fig., pl. VI, figs 1–3, pl. IX, fig. 2; [see Ayling *et al.*, 1982: 106 re Dendy's original material]; Dendy & Row, 1913: 723; Dendy, 1924: 275 ("Terra Nova" Stn 90, Three Kings Is.); Tanita, 1942: 81); [see also Gordon & Ballantine, 1977: 97 (listed from Leigh region)].

Pritchard, 1984: 136 (recorded from the Cape Rodney to Okakari Point Marine Reserve).

Leucosolenia botryoides (Ellis & Solander, 1786)

Ellis & Solander, 1786: 190, pl. LVIII, figs 1–4 (*Spongia*); Bowerbank, 1866: 28; Haeckel, 1872: 65, pl. 9, pl. 10, fig. 7 (*Ascaltis botryoides*), 101, pl. 16, fig. 1 (*Ascandra botryoides*); Bowerbank, 1874: 164, pl. XXVI; Vasseur, 1879: 59–66 (reprod.); Minchin, 1904: 386; Topsent, 1936: 33; Tuzet, 1948: 103–114 (early develop.); Burton, 1963: 8–9, 28, 30, 32–34, 38, 117, 124–126, 162–181, 191, 578–579, 582, text-figs 1–33, review of species, including as synonyms:

1. Pp 33, 125, 15–154, 161–162 (descr. etc.), 167, 585, text-fig. 8, "named form" *Leucosolenia discoveryi* Jenkin, 1908; see also Jenkin, 1908: 6, pl. XXVIII, figs 12–13 (*L. discoveryi*), 8, pl. XXVIIII, figs 14–15 (*L. minchini*); Dendy & Row, 1913: 222 (*L. discoveryi* Jenkin), 723 (*L. minchini* Jenkin); Burton, 1932: 258; Tanita, 1942: 84 (*L. discoveryi*), 84 (*L. minchini*).
2. Pp 125, 162, 166, 585, "named form" *Leucosolenia echinata* Kirk, 1894; see also Kirk, 1894: 175, pl. XXII, fig. 1; Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 722; Brøndsted, 1926: 299, fig. 2; Tanita, 1942: 86; Fell, 1950: 4–5 [see also Hartman, 1958a: 108 (table 2, spicule characteristics); Morton & Miller, 1968: 111, text-fig. 40c; Tuzet, 1970: 437 *et seq.* (larval symmetry, refs)].
3. Pp 28, 33, 125, 153–155, 162, 166–167, 587, text-fig. 15, "named form" *Leucosolenia lucasi* Dendy, 1891 [see also Dendy, 1891: 45, pl. I, fig. 1, pl. IV, fig. 1, pl. IX, fig. 1; [see Ayling *et al.*, 1982: 103 re Dendy's original material]; Kirk, 1894: 178, pl. XXII, fig. 2; Kirk *in* Hutton, 1904: 322 (listed); Topsent, 1907: 5; Kirk, 1909: 339; Dendy & Row, 1913: 723; Brøndsted, 1926: 298–299, fig. 1; Row & Hozawa, 1931: 729; Tanita, 1942: 85, 109, pl. VI, fig. 3; Fell, 1950: 5–6 (see also Morton & Miller, 1968: 111; Borojevic *et al.*, 1968: 32 (ecol., refs); Juniper & Steele, 1969: 157; Soest, 1977: 264 (forms), pl. I, figs A–B)].
4. Pp 125, 161–162, 167, 588, "named form" *Leucosolenia minchini* Jenkin, 1908; see also Jenkin, 1908: 8, pl. XXVIII, figs 14–15 and other refs under *L. discoveryi* Minchin, 1908.

Juniper & Steele, 1969: 157; Rasmussen, 1973: 14; George & George, 1979: 13 (descr., habitat, pl. 1/4; Panzini & Pronzato, 1981: 79 (table I; 4-year settlement study); Uriz, 1986: 11 (in key), fig. 4.

Leucosolenia sp. Miller & Batt, 1973

Miller & Batt, 1973: 67; 124 (ecol.).

Order SYCETTIDA
Family GRANTIIDAE
Genus **Aphroceras** Gray, 1858

Aphroceras ensata (Bowerbank, 1858)

Bowerbank, 1858: 295 (*Grantia*); Bowerbank, 1866: 25; Bowerbank, 1874: pl. II, figs 16–20; Hanitsch, 1890: 234 (*Leucaltis impressa*), pl. 15, figs 1–3; Stephens, 1912: 14 (*Aphroceras cliavensis*), pl. 1, figs 1–16; Burton 1963: 491–523, text-figs 305–329, review of species, including as synonyms:

1. Pp 81, 107, 132, 493–496, 622–623, text-figs 309–309, "named form" *Leuconia aspera* (Schmidt, 1862); see also Schmidt, 1862: 15, pl. I, fig. 4 (*Sycon*); Dendy & Row, 1913: 769 (*Leucandra*); Brøndsted, 1926: 311 [other refs & syn. in Burton, 1963: 493; Sarà, 1972: 63 (in key, etc.), figs 4, H–I; see also Rainer, 1981: 35 (listed from soft-bottom benthic community, Otago)].
2. Pp 110, 130, 502–504, text-figs 316–317, "named form" *Sycute dendyi* (Kirk, 1896); see also Kirk, 1896: 287, pl. XXIV, figs 1–16 (*Sycon*); Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1914: 763 (*Sycute*); Kirk, 1922: 14 (as *Syconute dendyi*, Island Bay); Fell, 1950: 7 [see also Poore, 1968: 584 (table 3), 590 (wharf-pile fauna, Lyttelton, determinations by S. Rind and P. Bergquist)].
3. Pp 109, 131, 506, "named form" *Leucandra haurakii* Brøndsted, 1926: 311; Tanita, 1942: 126, text-fig. 7, pl. VII, fig. 14.
4. Pp 20, 90–91, 130, 521–522, 620–621, "named form" *Ute syconoides* (Carter, 1886); see also Carter, 1886: 135–136 (*Aphroceras*); Dendy, 1892: 92 (*Ute*); Dendy & Row, 1913: 764; Dendy, 1924: 284 ("Terra Nova" Stn 96, E of North Cape); Brøndsted, 1926: 306–308, fig. 7; Burton & Rao, 1932: 305; Fell, 1950: 7.

Borojevic, 1966b: 703–724 (taxon.), 6 figs; Borojevic *et al.*, 1968: 35 (refs etc.); Bergquist, 1978: text-fig. 5.5a (oscular tube).

Aphroceras sp. Kenny & Haysom, 1962

Kenny & Haysom, 1962: 250, 252, 258 (ecol. at Macquarie Is.).

Genus **Eilhardia** Poléjaeff, 1883

Eilhardia schulzei Poléjaeff, 1883

Poléjaeff, 1883: 70–73, pl. II, fig. 7, pl. IX, figs 1–10; Burton, 1963: 117, 131–132, 135, 139, 316–317, 634, text-fig. 170, review of species, including as synonym:

Pp 132, 319, "named form" *Leucandra secutor* Brøndsted, 1926: 313–315, text-fig. 10).

Genus **Lamontia** Kirk, 1895

Lamontia zona Kirk, 1895

Kirk, 1895: 289, pl. XXV, figs 1–8, pl. XXVI, figs 1–8; Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 779; Fell, 1950: 8–9, 12; Burton, 1963: 116, 133, 136, 148, 557–558, 634, text-fig. 362 (review).

Genus **Leuconia** Grant, 1833

Leuconia armata Urban, 1908

Urban, 1908: 24–26, pl. V, figs 1–16; Urban, 1909: 250: Dendy & Row, 1913: 769 (*Leucandra*); Brøndsted, 1931: 38–40, figs 29–30; Burton, 1963: 476–478, text-fig. 294, review of species, including as synonyms:

P. 487, text-fig. 303, "named form" *Grantia scotti* (Jenkin, 1908); see also Jenkin, 1908: 10–12, pl. XXVII, pl. XXVIII, figs 16–20, pl. XXIX, figs 26–37 (as *Tenthrenodes scotti*), 22–23, pl. XXVII, fig. 5, pl. XXXI, figs 59–62, pl. XXXII, figs 63–64 (as *Dermatatetron chartaceum*), 23–24, pl. XXVII, fig. 1, pl. XXXII, figs 65–74 (as *D. hodgsoni*); Dendy, 1924: 381–284, pl. 2 (*Grantia ramulosa*); Borojevic, 1967: 16–18, text-fig. 22.

Leuconia barbata (Duchassaing & Michelotti, 1864)

Duchassaing & Michelotti, 1964: 111, pl. XXIV, figs 9–10 (*Medon*); de Laubenfels, 1936: 195, pl. XVIII, fig. 4 (*Leuconia*); Burton, 1963: 20–21, 28, 30, 81, 126–128, 135, 138, 233–309, 381, 623, text-figs 100–161, review of species, including as synonyms:

1. Pp 18, 29, 38–40, 126, 241–242, 594, "named form" *Leucascus clavatus* Dendy, 1892; see also Dendy, 1892: 78 [see Ayling *et al.*, 1982: 102 re Dendy's original material]; Dendy & Row, 1913: 731; Brøndsted, 1926: 300, fig. 3; Row & Hozawa, 1931: 743.

2. Pp 20, 31, 243–244, 624, "named form" *Leucandra conica* Lendenfeld, 1885b: see also Lendenfeld, 1885b: 1126; Dendy, 1892: 98; Dendy & Row, 1913: 733; Brøndsted, 1923: 166.

3. Pp 132, 290, "named form" *Leucandra regina* Brondsted, 1926: 315–316, text-fig. 11 (*L. regina*), 316–317, text-fig. 12 (as var. *regularis*).

4. Pp 18, 29, 38–40, 126, 295, 594, "named form" *Leucascus simplex* Dendy, 1892; see also Dendy, 1892: 77 [see Ayling *et al.*, 1982: 105 re Dendy's original material]; Kirk, 1898: 313; Kirk *in* Hutton, 1904: 322 (listed); Dendy, 1913: 9, pl. I, fig. 5, pl. IV, fig. 1; Dendy & Row, 1913: 731; Row & Hozawa, 1931: 742; Fell, 1950: 5.

5. Pp 132, 206, "named form" *Leucandra vesicularis* Brøndsted, 1926: 317–319, text-fig. 13.

Juniper & Steele, 1969: 157.

Genus **Uteopsis** Dendy & Row, 1913

Uteopsis argentea (Poléjaeff, 1883)

Poléjaeff, 1883: 43–45, 73, pl. I, fig. 3, pl. IV, fig. 3, pl. V, figs 1a-b (*Ute*); Dendy, 1891: 92; Dendy & Row, 1913: 766 (*Uteopsis*); Brøndsted, 1924: 305–306 (*Ute*); Burton, 1963: 145, 530, 621, text-fig. 335 (review).

Family HETEROPIIDAE

Genus **Sycettusa** Haeckel, 1872

Sycettusa bathybia (Haeckel, 1872)

Haeckel, 1872: 156, pl. XXVIII, fig. 2 (*Leucaltis*); Burton, 1963: 29, 71, 74, 81, 104, 129, 318–329, text-figs 1781–180, review of species, including as synonyms:

Pp 321–322, text-fig. 173, "named form" *Vosmaeropsis macera* (Carter, 1886); see also Carter, 1886: 50–51 (*Heteropia*); Dendy, 1892: 110 (*Vosmaeropsis*); Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 755; Dendy, 1924: 280–281, pl. I, fig. 19 (N.Z. specimens as *Grantia poculum* (Poléjaeff), cf. Burton, 1963: 28, 74, 129, 323, 611–612; other refs in Burton, 1963: 321).

Sycettusa glomerosa (Bowerbank, 1873)

Bowerbank, 1873: 17, pl. IV, figs 1–6 (*Leuconia*); Burton, 1963: 28, 71, 75, 78–80, review of species, including as synonyms:

1. P. 349, text-fig. 196, "named form" *Grantessa intusarticulata* (Carter, 1886); see also Carter, 1886: 45–46 (*Hypograntia*); Dendy, 1892: 108 (*Grantessa*); Dendy, 1893: 181, pl. XIII, fig. 18; Kirk *in* Hutton, 1904: 322 (listed as *Grantessa intusarticulata*); Dendy & Row, 1913: 753; Kirk, 1922: 14 (as *G. intus-articulata* from Island Bay); Brøndsted, 1926: 308 (note Japanese refs in Burton, 1963: 248); Tanita, 1965: 45)].

2. P. 350, "named form" *Grantessa preiswischi* Dendy & Row, 1904; see also Dendy & Row, 1904: 753 (new name for *Ebnerella compressa* Preiswich, 1904: 19–23, pl. 4, figs 13–18 (Chatham Is)].

Family SCYETTIDAE
Genus **Sycon** Risso, 1826

Sycon ciliata (Fabricius, 1780)

Fabricius, 1780: 488 (*Spongia*); Haeckel, 1872: 296, pl. 51, fig. 1, pl. 58, fig. 2 (*Sycandra ciliata*), 304, pl. 51, fig. 2, pl. 60, figs 1–6 (*S. coronata*); Burton, 1963: 130, 359–442, text-figs 203–269, review of species and extensive synonymy, including as synonyms:

1. P. 408, text-fig. 243, "named form" *Sycon ornatum* (Kirk, 1898); see also Kirk, 1898: 314, pl. XXXI, figs IIa-b, pl. XXXII, fig. II; Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 747; Brøndsted, 1926: 303–304; Fell, 1950: 6 [other refs in Burton 1963: 408; see also Ralph & Hurley, 1952: 5 (wharf-pile fauna), table I–II; Skerman, 1958: 228 (fouling organisms at Port Lyttelton); Morton & Miller, 1968: III, text-fig. 40a; Gordon thesis, 1968: see Gordon & Ballantine, 1977: 97 (as *S. ciliata*); Hicks, 1971: 48, 54 (in coralline algae, Wellington); Gordon, 1972: 510–511 (in bryozoan community — see fig. 3); Miller & Batt, 1973: 67)].
2. P. 409, text-fig. 243, "named form" *Sycon pedicellatum* Kirk 1898; see also Kirk, 1898: 313–314, pl. XXXI, figs 1a-b, pl. XXII, fig. 1; Kirk *in* Hutton, 1904: 322 (listed); Dendy & Row, 1913: 747; Fell, 1950: 6 [see also Morton & Miller, 1968: III, text-fig. 40a)].
3. P. 413, "named form" *Grantia primitiva* Brøndsted, 1926: 304–305, text-fig. 6; see also Tendal, 1965: 997, text-fig. 2a)].

Juniper & Steele, 1969: 157; MacLennan, 1970: 299–324 *passim* (cellular aggreg.); Alvarado & Bautista, 1972: 207–213 (*Sycon*), figs (spicules, SEM); Curtis & Cowden, 1973: 299–311, 1 pl. (exper. reaggreg.); Gaino & Valentini, 1973a: 620; Gaino & Valentini [1972] 1973b: 75–87, 4 pls (reaggreg.); Miller & Batt, 1973: 67; Ledger, 1975: 13–18, figs (morphol., junctions); Boaden *et al.*, 1976: 535–542 (sizes); Ledger & Jones, 1977: 553–567 (spicule formation); Koechlin, 1977: 325–337 (epifauna); Gordon & Ballantine, 1977: 97 (listed from Leigh region after record of Gordon, thesis 1968 as *Sycon ornatum*); Soest, 1977: 265 (forms), pl. 2, figs A–B; Cotter, 1978: 117–122 (factors affecting respiration); George & George, 1979: 13 (descr. etc.), pl. 1/5; Pansini & Pronzato, 1981: 79 (table 1, 4-year settlement study); Hoshino, 1984: 23–61 (copepod associates); Jones & Ledger, 1986: 149–158 (calcium effects/spicule secretion Uriz, 1986: 11 (in key), fig. 10: Gaino *et al.*, 19[illegible] 73–82 (oogenesis/fertilisation etc.); Franzén, 19[illegible] 349–357 (oogenesis/larval develop.).

Sycon lunulata (Haeckel, 1872)

Haeckel, 1872: 189, pl. XXXI, fig. 2, pl. XXXVIII fig. 1 (*Leucandra lunulata*), 189 (as *Dyasycus lunulatus* Dendy & Row, 1913: 771 (*Leucandra*); Burton 196[illegible] 474–490, text-figs 279, 293–305, review of species including as synonyms:

Pp 126, 480–481, 596, text-fig. 297, "named form" *Leuconia joubini* (Topsent, 1907); see also Topsent 1907b: 542 (*Leucandra*); Topsent, 1908b: 9; Dendy & Row, 1913: 772; Dendy, 1918: 9, pl. 1, figs 3 & [illegible] (as *Leucetta macquariensis*); Burton 1929: 40[illegible] Burton, 1932b: 259 (as *L. macquariensis*).

Sycon ramsayi (Lendenfeld, 1885)

Lendenfeld, 1885: 1097, pl. LIX, figs 35–36, pl. LXII, figs 28–39, pl. LXVI, fig. 37 (*Sycandra*); Carter, 1886: 35–36; Dendy, 1892: 82 (*Sycon*), 106 (as *Grantessa hispida*); Dendy & Row, 1913: 748 (*S. ramsayi*), 752 (*G. hispida*); Brøndsted, 1926: 303; Fell, 1950: 6; Burton, 1963: 28, 64–65, 88, 129, 459–464, text-fig. 283, review of species, including as synonyms:

Pp 65, 132, 459–460, 623, "named form" *Leuconia australiensis* Carter, 1886); see also Carter, 1886: 127–128 (*Leuconia fistulosa* (Johnston) var. *australiensis*); Dendy, 1892: 97 (*Leucandra*); Dendy & Row, 1913: 769; Brøndsted, 1926: 312, fig. 9; Fell, 1950: 8; note also Japanese refs in Burton, 1963: 463.

Sycon sp. Grace & Grace, 1976

Grace & Grace, 1976: 99 (in benthic community, Great Mercury Is).

Sycon sp. Lawson *et al.*, 1984

Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 (fatty acid composition/sponge classification).

Sycon spp. 1 & 2 Bergquist *et al.*, 1986

Bergquist *et al.*, 1986: 106 (table 1), 109 (table 3), 110 (table 4) (Hen & Chicken Is, sterol composition/classification).

* Class HEXACTINELLIDA

* Note — Reid, 1963a (dictyonal structure in Hexactinosa); 1963b (classification of the Hexactinosa); 1963c (classification and status etc. of Hexactinellida); cf. also Reiswig & Mackie, 1983 (review of status and classification of hexactinellid sponges).

Subclass AMPHIDISCOPHORA
Order AMPHIDISCOSA
Family HYALONEMATIDAE
Genus **Hyalonema** Gray, 1832

Hyalonema sp. Lévi, 1964
Lévi, 1964: 83–84, 109 ("Galathea" Stn 654, Kermadec Trench); Lal *et al.*, 1970: 366 (listed), 367 (as *Hyalonema (Oonema)*).

Genus **Corynonema** Ijima, 1927

Corynonema tenuifusum (Lendenfeld, 1915)
Lendenfeld, 1915: 222–229 (*Hyalonema*), pl. 67, figs 1–26, pl. 68, figs 1–25; Ijima, 1926: 366 (listed as *Hyalonema corynonema*); Lévi, 1964: 84, 93, 109, text-fig. 44, pl. V, figs A & C ("Galathea" Stn 575, Tasman Sea).

Genus **Cycliconema** Ijima, 1927

Cycliconema tasmani Lévi, 1964
Lévi, 1964: 84, 96, text-fig. 39, pl. V, fig. B ("Galathea" Stn 626, Tasman Sea).

Genus **Oonema** Lendenfeld, 1915

Oonema bipinnulum Lévi, 1964
Lévi, 1964: 94, 96–97, 109, text-fig. 40, pl. VI, fig. B ("Galathea" Stn 665, Kermadec Trench); Lal *et al.*, 1970: 249, table 3 (silicon 32 concentration, Kermadec Trench, 2470 m).

Family PHERONEMATIDAE
Genus **Pheronema** Leidy, 1868

Pheronema gigas (Schulze, 1887)
Schulze, 1887 [1886]: 257–259 (*Poliopogon*), 389, pls XLVII–XLVIII ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1896: 20 (listed); Kirk *in* Hutton, 1904: 323 (listed); Ijima, 1926: 364 (listed under *Pheronema*); Lévi & Lévi, 1982: 286 (listed as *P. giganteum*, distinguished from *P. conicum* n.sp.); Tabachnik, 1990: (in new genus *Schulzviella*); Reiswig, 1992: 30 (retained in *Poliopogon*).

Subclass HEXASTEROPHORA
Order HEXACTINOSIDA
Family EURETIDAE
Genus **Chonelasma** Schulze, 1887

Chonelasma hamatum Schulze, 1887
Schulze, 1887 [1886]: 323–324 (*C. hamatum*), 397, 429 (as *C. uncinatum*), pl. XCI ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1896: 20 (listed); Kirk *in* Hutton, 1904: 323 (listed); Ijima, 1926: 369 (listed).

Chonelasma lamella Schulze, 1887
Schulze, 1887 [1886]: 321–323, 397, pls LXXXVII–LXXXVIII ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1896: 20 (listed); Kirk *in* Hutton, 1904: 323 (listed); Ijima, 1926: 329 (listed).

Family FARREIDAE
Genus **Farrea** Carter, 1885

Farrea occa occa (Bowerbank, 1862)
Bowerbank, 1862: 1087; Schulze, 1887 [1886]: 277–285, 390, pls LXXI–LXXII, LXXVI, figs 1–3 ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1896: 20 (listed); Kirk *in* Hutton, 1904: 323 (listed as genus); Ijima, 1926: 130, 151, 367 (review of subspp., distrib. etc.); Burton, 1928: 15 (distrib., refs); Tanita, 1960 [1963]: 221 (descr.), pl. 110, fig. 7; Lévi & Lévi, 1989: 39, text-fig. 8, pl. 1, fig. 6 (MUSTORSTOM 2, collections off the Philippines); Reiswig, 1992: 31 (descr., syn.).

Family TRETODICTYIIDAE
Genus **Euryplegma** Schulze, 1887

Euryplegma auriculare Schulze, 1887
Schulze, 1887 [1888]: 176–178, 380, 490, pl. CII ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1896: 19 (listed); Kirk *in* Hutton, 1904: 323 (listed); Ijima, 1926: 370 (listed).

Order LYSSACINOSIDA
Family CAULOPHACIDAE
Genus **Caulophacus** Schulze, 1885

Caulophacus hadalis Lévi, 1964
Lévi, 1964: 84, 102, 107, text-figs 58, 62 (distrib. map) ("Galathea" Stn 638, Kermadec Trench).

Caulophacus schulzei Wilson, 1904
Wilson, 1904: 43–50, pl. 4, figs 1, 3, 5–10, pl. 5, figs 1–6, 8–10; Lévi, 1964: 84, 100–101, 107, text-fig. 55, 62 (distrib. map), pl. IX ("Galathea" Stns 599, 601, 602, Tasman Sea); Lal *et al.*, 1970: 249 (silicon 32 concentration, 3830 m, 4510 m, Tasman Sea).

Family EUPLECTELLIDAE
Genus **Malacosaccus** Schulze, 1885

Malacosaccus erectus Lévi, 1964
Lévi, 1964: 84, 102–103, 106, text-figs 59, 63 (distrib. map), pl. VI, fig. A ("Galathea" Stn 574, Tasman Sea).

Genus **Regadrella** Schmidt, 1880

Regadrella okinoseana Ijima, 1896
Ijima, 1896: 259; Ijima, 1926: 372; Bruce & Baba, 1973: 155, 169 (first New Zealand record, as host for the natant decapod crustacean *Spongiocaris yaldwyni*); Reiswig, 1992: 33 (diag., descr., refs & syn.), figs 9–12).

Genus **Walteria** Schulze, 1887

Walteria flemingi Schulze, 1887
Schulze, 1887 [1888]: 96–99, 369, pls IX, X, XI, figs 4–6 ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1986: 19 (listed); Kirk *in* Hutton, 1904: 324 (listed); Ijima, 1926: 373 (listed).

Family ROSSELLIDAE
Genus **Aulochone** Schulze, 1887

Aulochone cylindrica Schulze, 1887
Schulze, 1887 [1886]: 168–171, 379, pls LXVI–LXVIII, fig. 1 ("Challenger" Stn 170A, off Kermadec Is); Hamilton, 1896: 20 (listed); Kirk *in* Hutton, 1904: 323 (listed); Ijima, 1926: 373 (listed); Lévi & Lévi, 1982: 297 (listed).

Genus **Rossella** Carter, 1872

Rossella ijimai Dendy, 1924
Dendy, 1924: 284–286, pl. III, fig. 5, pl. IV, figs 1–16 ("Terra Nova" Stn 96, E of North Cape); Koltun, 1969: 13, pl. 3, map 1 (northern N.Z. record plotted as *Rossella*), pl. 3, map 2 (Antarctic record of *Anoxycalyx ijimae* — see also Koltun, 1970: 290); Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5 etc. (fatty acid composition/sponge classification); Uriz, 1988: 26 (generic diag.).

Genus **Symplectella** Dendy, 1924

Symplectella rowi Dendy, 1924
Dendy, 1924: 287–290, pl. III, figs 1–3, pl. IV, figs 17–39 ("Terra Nova" Stn 96, E of North Cape); [Bergquist, n.d. ?1965]: plate facing p. 33; Lawson *et al.*, 1984: 375–393 *passim*, tables 2, 4, 5, etc. (fatty acid composition/sponge classification); Hicks, 1986: 349–362 (harpacticoid copepods/assoc.).

Family/Genus INCERTAE SEDIS

Species?
Bergquist, 1961: 205 (Chatham Is 1954 Exped. Stn 7, Chatham Rise, 280 fm — "The material, which cannot be assigned to a genus, represents fragments from the interior of a large hexactinellid." — in family Askunematidae ? = Lanuginellidae, cf. de Laubenfels, 1955: E68).

Note:
This may be an earlier record of a large conical sponge found to be characteristic of benthic communities on the Chatham Rise (see Kudrass & Cullen, 1982: 12–13, pl. 2). Distinctive "tractor wheel" marks across the bottom sediment have been shown by TV video analysis to have been made by the rolling of such giant sponges (Dawson, 1984: 215, pl. 2, fig. d). Specimens collected at NZOI Stn T10, 43°57.2'S, 179°41.2'E, 400 m, are under study by C. Lévi.

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