

Annotated check list of New Caledonian soft corals

Leen P. van OFWEGEN

National museum of natural History, Leiden, The Netherlands

ofwegen@naturalis.nnm.nl

The knowledge of the New Caledonian shallow-water soft coral fauna is mainly based on the work of Tixier-Durivault (1970) and Verseveldt (1974), small additions were made by Alderslade (1994) and Ofwegen (2001). The below check list is essentially the list Tixier-Durivault published, and consists of 173 species of soft corals in 20 genera, and 8 species of sea pens in 3 genera. The list must be considered somewhat doubtful as nowadays many of Tixier-Durivault's identifications are challenged and a re-examination of the complete collection is necessary to get certainty about her identifications.

Still very little is known about octocoral biogeography, the only somewhat comparable study is Ofwegen (1996), in which 105 species of soft corals have been listed from the Bismarck Sea. These data suggest New Caledonia to be a much richer area, however, the Bismarck Sea material was collected in only three localities, Laing Island, Boësa Island, and Madang.

Ofwegen (2002) compared the distribution of all Indo-Pacific *Sinularia* species, New Caledonia was among the richest areas, only the Red Sea, the Seychelles-Mauritius Plateau, and eastern Africa had more species. But as already stated in that paper, those findings mostly reflected collection efforts. Similarly, because of lack of comparable studies, also little can be said about the level of endemism.

- 1 The species was described by Tixier-Durivault, 1970, as *Alcyonium catalai*. From the description it seems to be a species of *Eleutherobia*.
- 2 The species was identified by Tixier-Durivault, 1970, as *Anthomastus granulatus* Kükenthal, 1911. From the description it seems to be a species of *Paraminabea*.
- 3 A number of *Lobophytum* species identified by Tixier-Durivault, 1970, from New Caledonia were synonymized with *L. crassum* Marenzeller, 1886, by Verseveldt (1983): *Lobophytum caledonense* Tixier-Durivault, 1956; *Lobophytum crebriplacatum* Marenzeller, 1886; *Lobophytum crassospiculatum* Moser, 1919, and *Lobophytum cristagalli* Marenzeller, 1886.
- 4 Verseveldt (1983) synonymized *Lobophytum chevalieri* Tixier-Durivault, 1970, with *L. pauciflorum* (Ehrenberg, 1834).
- 5 Verseveldt (1983) referred *Sarcophyton proprium* Tixier-Durivault, 1970, to *Lobophytum*.
- 6 Verseveldt (1983) synonymized *Lobophytum roxasi* Moser, 1919, with *L. gazellae* Moser, 1919, while creating a new species for several specimens identified by Tixier Durivault, but nothing was said about her New Caledonia material.
- 7 Verseveldt (1983) synonymized *Lobophytum spissum* Tixier-Durivault, 1970, with *L. varium* Tixier-Durivault, 1970.
- 8 *Sarcophyton poculiforme* Tixier-Durivault, 1958, was mentioned by Tixier-Durivault (1970) to occur around New Caledonia; but Verseveldt (1982) synonymized this species with *S. cinereum*.
- 9 *Lobophytum radiatum* Tixier-Durivault, 1957, and *Lobophytum undatum* Tixier-Durivault, 1957, were mentioned by Tixier-Durivault (1970) to occur around New Caledonia but both species were synonymized with *Sarcophyton crassocaulum* Moser, 1919, by Verseveldt (1983).
- 10 *Sarcophyton acutangulum* Marenzeller, 1886, and *S. molle* Tixier-Durivault, 1946, were mentioned by Tixier-Durivault (1970) to occur around New Caledonia but these two species were synonymized with *S. ehrenbergi* Marenzeller, 1886, by Verseveldt (1982).
- 11 *Sarcophyton gracile* Burchardt, 1902, was mentioned by Tixier-Durivault, (1970) to occur around New Caledonia but the species was synonymized with *S. glaucum* (Quoy & Gaimard, 1833) by Verseveldt (1982).

- 12 Verseveldt (1982) mentioned that *Sarcophyton moseri* Roxas, 1933, could be synonymous with *S. ehrenbergi* Marenzeller, 1886, but apparently specimens identified to this species were not re-examined by him.
- 13 Verseveldt 1982 synonymized *Sarcophyton puertogalerae* Roxas, 1933, with *S. crassocaula* Moser, 1919, excluded the identifications of Tixier-Durivault, but failed to mention what species they did belong to.
- 14 *Sarcophyton certum* Tixier-Durivault, 1970, and *S. manifestum* Tixier-Durivault, 1970, both were synonymized with *S. trocheliophorum* Marenzeller, 1886, by Verseveldt (1982).
- 15 The species was described by Tixier-Durivault, 1970, as *Anthomastus agilis*. Alderslade (1994) referred it to *Sinularia*.
- 16 Verseveldt (1980) mentioned identifications of *Sinularia andamanensis* (Thomson & Simpson, 1909) by Tixier-Durivault were incorrect, but didn't refer them to any other species.
- 17 Verseveldt (1980) synonymized *Sinularia cervicornis* Tixier-Durivault, 1970, and *Sinularia triaena* Kolonko, 1926, with *S. brassica* May, 1898; Benayahu *et al.* (1998) synonymized *S. dura* (Pratt, 1903), mentioned by Tixier-Durivault to occur around New Caledonia, with *S. brassica*.
- 18 Verseveldt (1980) mentioned identifications of *Sinularia capitalis* (Pratt, 1903) by Tixier-Durivault were incorrect, but didn't refer them to any other species.
- 19 Verseveldt (1980) mentioned identifications of *Sinularia conferta* (Dana, 1846) by Tixier-Durivault were incorrect, but didn't refer them to any other species.
- 20 Verseveldt (1980) mentioned Tixier-Durivault wrongly identified *Sinularia fungoides* Thomson & Henderson, 1906, but didn't refer them to any other species.
- 21 Vennam & Ofwegen (1996) referred specimens identified by Tixier-Durivault as *Sinularia gyrosa* (Klunzinger, 1877) to *S. gravis* Tixier-Durivault, 1970.
- 22 Verseveldt (1980) mentioned Tixier-Durivault wrongly identified *Sinularia hirta* (Pratt, 1903), but didn't refer them to any other species.
- 23 Verseveldt (1980) synonymized *Sinularia renei* Tixier-Durivault, 1970, with *Sinularia inflata* Tixier-Durivault, 1970.
- 24 Verseveldt (1980) synonymized *Sinularia partita* Tixier-Durivault, 1970, with *S. lochmodes* Kolonko, 1926.
- 25 *Sinularia intacta* Tixier-Durivault, 1970, and *Sinularia rotundata* Tixier-Durivault, 1970, were synonymized with *Sinularia molesta* Tixier-Durivault, 1970, by Ofwegen (2001).
- 26 Verseveldt (1980) synonymized *Sinularia crispa* Tixier-Durivault, 1970, with *S. numerosa* Tixier-Durivault, 1970.
- 27 Verseveldt (1980) synonymized *Sinularia elegans* Tixier-Durivault, 1970, with *S. querciformis* (Pratt, 1903).
- 28 Ofwegen (2005) referred *Nephthea granulata* Kükenthal, 1910, and *Nephthea inermis* (Holm, 1895) to the genus *Chromonephthea* Ofwegen, 2005. *N. granulata* was synonymized with *Chromonephthea hartmeyeri* (Kükenthal, 1910). Tixier-Durivaults identifications of these species were considered incorrect.
- 29 Alderslade (2000) suggested this could be a species of *Klyxum*; re-examination of the material is needed to confirm this.

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List of the taxa

CNIDAIRES

OCTOCORALLIAIRES

ALCYONACEA Lamouroux, 1812

ALCYONIIDAE Lamouroux, 1812

(1) *Eleutherobia* sp.

Klyxum echinatum (Tixier-Durivault, 1970)

Klyxum flaccidum (Tixier-Durivault, 1965)

Klyxum gracillimum (Kükenthal, 1906)

Klyxum legitimum (Tixier-Durivault, 1970)

Klyxum molle (Thomson & Dean, 1931)

Klyxum rotundum (Thomson & Dean, 1931)

Klyxum simplex (Thomson & Dean, 1931)

(2) *Paraminabea* sp.

Cladiella aspera Tixier-Durivault, 1970

Cladiella conifera (Tixier-Durivault, 1943)

Cladiella densa Tixier-Durivault, 1970

Cladiella digitulata (Klunzinger, 1877)

Cladiella elegantissima (May, 1899)

Cladiella elongata (Tixier-Durivault, 1944)

Cladiella foliacea (Tixier-Durivault, 1944)

Cladiella hicksoni (Tixier-Durivault, 1944)

Cladiella hirsuta Tixier-Durivault, 1970

Cladiella humesi Verseveldt, 1974

Cladiella krempfi (Hickson, 1919)

Cladiella latissima (Tixier-Durivault, 1944)

Cladiella madagascarensis (Tixier-Durivault, 1944)

Cladiella multiloba Tixier-Durivault, 1970

Cladiella pachyclados (Klunzinger, 1877)

Cladiella papillosa (Tixier-Durivault, 1942)

Cladiella prattae (Tixier-Durivault, 1944)
Cladiella pulchra (Tixier-Durivault, 1944)
Cladiella ramosa Tixier-Durivault, 1970
Cladiella rotundata Tixier-Durivault, 1970
Cladiella scabra Tixier-Durivault, 1970
Cladiella similis (Tixier-Durivault, 1944)
Cladiella sphaerophora (Ehrenberg, 1834)
Cladiella subtilis Tixier-Durivault, 1970
Cladiella tuberosa (Tixier-Durivault, 1944)
Cladiella tulearensis (Tixier-Durivault, 1944)
Lobophytum borbonicum (Marenzeller, 1886)
Lobophytum catalai Tixier-Durivault, 1957
(3) *Lobophytum crassum* Marenzeller, 1886
Lobophytum cristatum Tixier-Durivault, 1970
Lobophytum densum Tixier-Durivault, 1970
Lobophytum depressum Tixier-Durivault, 1966
Lobophytum irregulare Tixier-Durivault, 1970
Lobophytum legitimum Tixier-Durivault, 1970
Lobophytum microlobulatum Tixier-Durivault, 1970
(4) *Lobophytum pauciflorum* (Ehrenberg, 1834)
Lobophytum planum Tixier-Durivault, 1970
(5) *Lobophytum proprium* (Tixier-Durivault, 1970)
Lobophytum pusillum Tixier-Durivault, 1970
(6) *Lobophytum roxasi* Moser, 1886
Lobophytum salvati Tixier-Durivault, 1970
Lobophytum sarcophytoides Moser, 1886
Lobophytum schoedei Moser, 1886
Lobophytum solidum Tixier-Durivault, 1970
Lobophytum variatum Tixier-Durivault, 1957
(7) *Lobophytum varium* Tixier-Durivault, 1970
Lobophytum verum Tixier-Durivault, 1970
Sarcophyton acutum Tixier-Durivault, 1970
(8) *Sarcophyton cinereum* Tixier-Durivault, 1946
(9) *Sarcophyton crassocaulum* Moser, 1919
Sarcophyton crassum Tixier-Durivault, 1946
Sarcophyton digitatum Moser, 1919
(10) *Sarcophyton ehrenbergi* Marenzeller, 1886
Sarcophyton elegans Moser, 1919
(11) *Sarcophyton glaucum* (Quoy & Gaimard, 1833)
Sarcophyton implanum Verseveldt, 1974
Sarcophyton infundibuliforme Tixier-Durivault, 1958
Sarcophyton latum (Dana, 1846)
(12) *Sarcophyton moseri* Roxas, 1933
Sarcophyton portentosum Tixier-Durivault, 1970
(13) *Sarcophyton puertogalerae* Roxas, 1933
Sarcophyton regulare Tixier-Durivault, 1946
Sarcophyton tenuispiculatum Thomson & Dean, 1931

- (14) *Sarcophyton trocheliophorum* Marenzeller, 1886
 (15) *Sinularia agilis* (Tixier-Durivault, 1970) (3)
 (16) *Sinularia andamanensis* (Thomson & Simpson, 1909)
 (17) *Sinularia brassica* May, 1898
 (18) *Sinularia capitalis* (Pratt, 1903)
Sinularia compacta Tixier-Durivault, 1970
 (19) *Sinularia conferta* (Dana, 1846)
Sinularia crassa Tixier-Durivault, 1945
Sinularia cristata Tixier-Durivault, 1970
Sinularia discrepans Tixier-Durivault, 1970
Sinularia dissecta Tixier-Durivault, 1945
Sinularia elongata Tixier-Durivault, 1970
Sinularia firma Tixier-Durivault, 1970
Sinularia flexibilis (Quoy & Gaimard, 1833)
Sinularia foveolata Verseveldt, 1974
 (20) *Sinularia fungoides* Thomson & Henderson, 1906
 (21) *Sinularia gravis* Tixier-Durivault, 1970
Sinularia halversoni Verseveldt, 1974
 (22) *Sinularia hirta* (Pratt, 1903)
 (23) *Sinularia inflata* Tixier-Durivault, 1970
Sinularia leptoclados (Ehrenberg, 1834)
 (24) *Sinularia lochmodes* Kolonko, 1926
Sinularia macropodia (Hickson & Hiles, 1900)
Sinularia mayi Lüttschwager, 1914
Sinularia microclavata Tixier-Durivault, 1970
Sinularia microspiculata Tixier-Durivault, 1970
 (25) *Sinularia molesta* Tixier-Durivault, 1970
 (26) *Sinularia numerosa* Tixier-Durivault, 1970
Sinularia ornata Tixier-Durivault, 1970
Sinularia peculiaris Tixier-Durivault, 1970
Sinularia pedunculata Tixier-Durivault, 1945
Sinularia polydactyla (Ehrenberg, 1834)
 (27) *Sinularia querciformis* (Pratt, 1903)
Sinularia ramosa Tixier-Durivault, 1945
Sinularia rigida (Dana, 1846)
Sinularia robusta Macfadyen, 1836
Sinularia triangula Tixier-Durivault, 1970
Sinularia variabilis Tixier-Durivault, 1945
Sinularia venusta Tixier-Durivault, 1970
Sinularia whiteleggei Lüttschwager, 1897

NEPHTHEIDAE Gray, 1862

- Lemnalia bournei* Light M.S., Roxas, 1933
Lemnalia elegans (May, 1898)
Lemnalia ramosa Tixier-Durivault, 1970
Paralemnalia thyrsoides (Ehrenberg, 1834)
Litophyton arboreum Forskäl, 1775
Nephthea albida (Holm, 1894)

Nephthea bayeri Verseveldt, 1966
Nephthea capnelliformis Thomson & Dean, 1931
Nephthea chabrolii Audouin, 1828
Nephthea columnaris Studer, 1894
(28) *Nephthea granulata* Kükenthal, 1910
(28) *Nephthea inermis* (Holm, 1895)
Nephthea laevis Kükenthal, 1913
Nephthea pacifica Kükenthal, 1903
Nephthea sibogae Thomson & Dean, 1931
Nephthea striata Kükenthal, 1903
Nephthea tongaensis Kükenthal, 1903
Dendronephthya armata (Holm, 1895)
Dendronephthya cervicornis (Wright & Studer, 1889)
Dendronephthya echinata (Tixier-Durivault & Prevorsek, 1959)
Dendronephthya elegans Henderson, 1909
Dendronephthya filigrana Kükenthal, 1906
Dendronephthya flammea Sheriffs, 1922
Dendronephthya gigantea (Verrill, 1864)
Dendronephthya golgotha Utinomi, 1952
Dendronephthya hirsuta (Tixier-Durivault & Prevorsek, 1960)
Dendronephthya köllikeri Kükenthal, 1905
Dendronephthya kükenihali Gravier, 1908
Dendronephthya merleti (Tixier-Durivault, 1970)
Dendronephthya microspiculata (Pütter, 1900)
Dendronephthya mucronata (Pütter, 1900)
Dendronephthya noumeensis Verseveldt, 1974
Dendronephthya novaezeelandiae Kükenthal, 1905
Dendronephthya palaoensis Utinomi, 1952
Dendronephthya palmata Utinomi, 1952
Dendronephthya punicea (Studer, 1888)
Dendronephthya roemeri Kükenthal, 1911
Dendronephthya spinifera (Holm, 1895)
Dendronephthya studeri (Ridley, 1884)
Dendronephthya wijzmanae Verseveldt, 1974
Stereonephthya hirsuta Tixier-Durivault, 1970
Stereonephthya inordinata Tixier-Durivault, 1970
Stereonephthya irregulare Tixier-Durivault, 1970
Stereonephthya plessisi Tixier-Durivault, 1970
Stereonephthya unicolor (Gray, 1862)
Umbellulifera striata (Thomson & Henderson, 1905)

NIDALIIDAE Gray, 1869

(29) *Nidalia tuberculosa* Tixier-Durivault, 1970
Siphonogorgia asperula Thomson & Simpson, 1909
Siphonogorgia dofleini Kükenthal, 1906
Siphonogorgia pendula Studer, 1889
Siphonogorgia squarrosa Kölliker MS, Studer, 1878
Siphonogorgia stuckiae Tixier-Durivault, 1970

Siphonogorgia variabilis (Hickson, 1903)

XENIIDAE Ehrenberg, 1828

Anthelia glauca Savigny, 1817

Funginus heimi (Tixier-Durivault, 1970)

Xenia intermedia Roxas, 1933

Xenia lillieae Roxas, 1933

Xenia membranacea Schenk, 1896

Xenia novaecaledoniaea Verseveldt, 1974

Xenia viridis Schenk, 1896

TUBIPORIDAE Ehrenberg, 1828

Tubipora musica Linné, 1758

PENNATULACEA Verrill, 1865

PTEROEIDIDAE Kölliker, 1880

Pteroeides bestae d'Hondt, 1984

Pteroeides caledonicum Kölliker, 1869

Pteroeides laboutei d'Hondt, 1984

Pteroeides caledonicum (Kölliker, 1869)

VERETILLIDAE Herklots, 1858

Cavernularia obesa Valenciennes MS & Haime, 1850

Cavernulina grandiflora d'Hondt, 1984

VIRGULARIIDAE Verrill, 1868

Virgularia juncea (Pallas, 1766)

Virgularia gustaviana (Herklots, 1863)

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