

Porifera of New Caledonia.

Remarks on the check list of shallow water species

John HOOPER, Monika SCHLACHER-HOENLINGER

Queensland Museum, PO Box 3300, South Brisbane, Qld 4101, Australia

john.hooper@qm.qld.gov.au - monika.schlacher@qm.qld.gov.au

Prior to a concerted taxonomic program on the New Caledonian shallow-water sponge fauna, Claude Lévi suggested (presumably from existing collections he had available to him at that time), that 157 species of sponges inhabited the New Caledonian Lagoon and shelf region (Lévi, 1979). He further predicted that most were probably 'widely distributed' tropical Indo-west Pacific species, with only a minor endemic component in this fauna (less than 20% of the fauna). This contrasted greatly with the (at that time) better-known deeper-water sponge fauna which was found to have levels of endemism around 75%. Further details on the biogeography and affinities of the New Caledonian sponge fauna can be found in Hooper & Lévi (1994).

Since Lévi's 1979 predictions the published New Caledonian shallow water sponge fauna (0-100m depth) now consists of 149 species in 94 genera, 54 families, 10 orders and two classes (Demospongiae and Calcarea), and a much higher level of endemism than previously recognised. Of course, this diversity represents only a small proportion of species actually living in the region, as evidenced by the huge collections made during the SMIB and other research programs of IRD (ORSTOM), but unfortunately taxonomic resources are not available to complete a full faunal inventory, including description of potentially many more new species. Remarkably 60 of these 149 species, or 40%, are either indigenous to New Caledonia (the majority of these), or were first described from New Caledonia and subsequently recorded from the northeast coast of Australia (so far only several Microcionidae species). Of the species that have more extensive distributions outside of the New Caledonian EEZ, eight are recorded elsewhere in the western Pacific islands (e.g. Fiji, Micronesia), 35 are also found in Australian waters (mostly the Great Barrier Reef), nine also occur in the Indo-Malay Archipelago, 26 are more widely distributed in the western Indian Ocean (e.g. Sri Lanka to the Red Sea), and seven are allegedly 'cosmopolitan' (e.g. Mediterranean, Caribbean) but these are also possible misidentifications or cryptic sibling species that cannot be differentiated using morphological criteria. Surprisingly the fauna has very little overlap (one species) with the New Zealand fauna.

Several highly speciose families are so far very under-represented in the New Caledonian sponge inventory (e.g. Chalinidae, Mycalidae, Halichondriidae, Irciniidae, Niphathidae), indicating that much taxonomic work still remains to be done. Conversely, several of the rare, highly ecologically specialised families are well represented in this inventory (e.g. Minchinellidae, some of the cryptic coral-dwelling calcareans), but this moreso reflects a particular taxonomic expertise available at the time rather than any major peculiarities in the sponge fauna. Finally, the Porifera research community is indeed fortunate to have benefited from the resources of IRD (ORSTOM), CNRS and the MNHN Paris that enabled a concerted international taxonomic effort to be applied to the New Caledonian sponge fauna, particularly during the 1990s, and which culminated in the publication of the popular field guide 'Sponges of the New Caledonian Lagoon' (Lévi *et al.*, 1998).

REFERENCES

- HOOPER, J.N.A. & LÉVI, C. 1994. Biogeography of Indo-west Pacific sponges: Microcionidae, Raspailiidae, Axinellidae. Pp. 191-212. *In* Soest, R. W. M. v., Kempen, T. M. G. v. & Braekman, J.-C. (ed.) Sponges in Time and Space. (Balkema: Rotterdam).
- LÉVI, C. 1979. The Demosponge Fauna from the New Caledonian Area. Pp. 307-315. *In* (ed.) Proceedings of the International Symposium on Marine Biogeography and Evolution in the Southern Hemisphere. 1979 (New Zealand Oceanographic Institute Special Volume: Wellington).
- LÉVI, C., LABOUTE, P., BARGIBANT, G. & MENO, J. 1998. Sponges of the New Caledonian Lagoon. Vol. (Orstom: Paris, France).

List of the PORIFERA of New Caledonia (0-100 m)

(Following the name of each species, the locality of the first description)

ACANTHOCHAETETIDAE Fischer, 1970

Acanthochaetetes wellsi Hartman & Goreau, 1975 (Marianas)

ACARNIDAE Dendy, 1922

Acarnus caledoniensis Hooper & Lévi, 1993 (New Caledonia)

AGELASIDAE Verrill, 1907

Agelas ceylonica Dendy, 1905 (Gulf of Manaar)

Agelas mauritiana (Carter, 1883) (Mauritius)

ANCORINIDAE Schmidt, 1870

Asteropus simplex (Dendy, 1905) (Western Australia)

Ecionemia acervus Bowerbank, 1864 (Fiji)

Jaspis splendens (de Laubenfels, 1954) (Micronesia)

Rhabdastrella globostellata (Carter, 1879) (Sri Lanka)

APLYSINELLIDAE Bergquist, 1980

Porphyria flintae Bergquist, 1995 (New Caledonia)

Suberea creba Bergquist, 1995 (New Caledonia)

Suberea laboutei Bergquist, 1995 (New Caledonia)

ASTROCLERIDAE Lister, 1900

Astroclera willeyana Lister, 1900 (Christmas Island)

Stromatospongia micronesica Hartman & Goreau, 1976 (Micronesia)

AXINELLIDAE Ridley & Dendy, 1887

Cymbastela cantharella (Lévi, 1983) (New Caledonia)

Cymbastela concentrica (Lendenfeld, 1887) (East Australia)

Phakellia stipitata (Carter, 1881) (Bass Strait)

Drarmacidon debitusae (Hooper & Lévi, 1993) (New Caledonia)

Ptilocaulis epakros Hooper & Lévi, 1993 (New Caledonia)

Ptilocaulis fusiformis Lévi, 1967 (New Caledonia)

Phycopsiss papillatus (Hooper & Lévi, 1993) (New Caledonia)

Reniochalina condylia Hooper & Lévi, 1993 (New Caledonia)

CALLYSPONGIIDAE de Laubenfels, 1936

Callyspongia aerizusa Desqueyroux-Faundez, 1984 (New Caledonia)

Callyspongia azurea Fromont, 1995 (GBR)

Callyspongia bullata (Lamarck, 1813) (Aust.)

Callyspongia (Cladochalina) diffusa (Ridley, 1884) (Northern Australia)

Callyspongia flammea Desqueyroux-Faundez, 1984 (New Caledonia)

Callyspongia fruticosa Desqueyroux-Faundez, 1984 (New Caledonia)

Callyspongia hispidocnulososa Desqueyroux-Faundez, 1984 (New Caledonia)

Callyspongia (Cladochalina) subarmigera (Ridley, 1884) (N. Aust.)

CHALINIDAE Gray, 1867

Haliclona (Gellius) cymaeformis (Esper, 1794) (Sri Lanka)

Haliclona olivacea Fromont, 1995 (Great Barrier Reef)

Haliclona sanguinea Fromont, 1995 (GBR)

Haliclona tyria Fromont, 1995 (GBR)

CHONDRILLIDAE Gray, 1872

Chondrilla australiensis Carter, 1873 (Australia)

CLATHRINIDAE Minchin, 1900

Clathrina chrysea Borojevic & Klautau, 2000 (New Caledonia)

CLIONAIDAE d'Orbigny, 1851

Cliona orientalis Thiele, 1900 (Ternate)

Cliona jullieni Topsent, 1891 (La Réunion)

COELOSPHAERIDAE Hentschel, 1923

Lissodendoryx (Waldoschmittia) schmidti (Ridley, 1884) (New South Wales)

- CRELLIDAE Hentschel, 1923**
Crella (Grayella) papillata (Lévi, 1958) (Red Sea)
Crella (Yvesia) spinulata (Hentschel, 1911) (WA)
- DARWINELLIDAE Merejkowsky, 1879**
Chelonaplysilla aurea Bergquist, 1995 (New Caledonia)
Dendrilla rosea Lendenfeld, 1883 (S. Aust.)
- DESMACELLIDAE Ridley & Dendy, 1886**
Neofibularia hartmani Hooper & Lévi, 1993 (New Caledonia)
- DESMOXYIDAE Hallmann, 1917**
Higginsia anfractuosa Hooper & Lévi, 1993 (New Caledonia)
Higginsia massalis Carter, 1885 (South Africa)
Higginsia tanekea Hooper & Lévi, 1993 (New Caledonia)
Myrmekioderma granulatum (Esper, 1794) (Indonesia)
- DICTYODENDRILLIDAE Bergquist, 1980**
Acanthodendrilla australis Bergquist, 1995 (New Caledonia)
Dendrilla elegans Lendenfeld, 1888 (Aust.)
- DICTYONELLIDAE Van Soest, Diaz & Pomponi, 1990**
Acanthella pulcherrima Ridley & Dendy, 1886 (N Aust.)
Liosina paradoxa Thiele, 1899 (Sulawesi)
Rhaphoxya systemma Hooper & Lévi, 1993 (New Caledonia)
Stylissa carteri (Dendy, 1889) (India)
Stylissa flabelliformis (Hentschel, 1912) (Aru Island)
Stylissa massa (Carter, 1887) (Mergui)
- DYSIDEIDAE Gray, 1867**
Citronia vasiformis Bergquist, 1995 (New Caledonia)
Dysidea arenaria Bergquist, 1965 (Palau)
Dysidea frondosa Bergquist, 1995 (New Caledonia)
Dysidea nigrescens Bergquist, 1995 (New Caledonia)
Euryspongia delicatula Bergquist, 1995 (New Caledonia)
Lamellodysidea herbacea (Keller, 1889) (Eritrea)
- HALICHONDRIIDAE Vosmaer, 1887**
Axinyssa aplysinoides (Dendy, 1921) (Carajos)
- HETEROPIIDAE Dendy, 1892**
Syconessa syconiformis (Borojevic, 1967) (New Caledonia)
Sycettusa tenuis Borojevic & Klautau, 2000 (New Caledonia)
Vosmaeropsis hozawai Borojevic & Klautau, 2000 (Brazil)
- HYMEDESMIIDAE Topsent, 1928**
Hamigera strongylata (Burton, 1934) (GBR)
- IANTHELLIDAE Hyatt, 1875**
Anomoianthella rubra Bergquist, 1995 (New Caledonia)
Ianthella basta (Pallas, 1766) (Indian Ocean)
- IOTROCHOTIDAE Dendy, 1922**
Iotrochota baculifera Ridley, 1884 (N. Aust.)
- IRCINIIDAE Gray, 1867**
Ircinia irregularis (Poléjaeff, 1884) (Irian Jaya)
Psammocinia bulbosa Bergquist, 1995 (New Caledonia)
- JENKINIDAE Borojevic, Boury-Esnault & Vacelet, 2000**
Anamixilla torresi (Poléjaeff, 1883) (N. Aust.)
Leucascandra caveolata Borojevic & Klautau, 1998 (New Caledonia)
- LELAPIELLIDAE Borojevic, Boury-Esnault & Vacelet, 1990**
Lelapiella incrustans Vacelet, 1977 (Madagascar)
- LEPIDOLEUCONIDAE Vacelet, 1967**
Lepidoleucon inflatum Vacelet, 1967 (Madagascar)
- LEUCALTIDAE Dendy & Row, 1913**
Leucaltis clathria Haeckel, 1872 (Florida) [doubtful ID]

LEUCASCIDAE Dendy, 1892

Leucascus neocaledonicus Borojevic & Klautau, 2000 (New Caledonia)

LEUCETTIDAE de Laubenfels, 1936

Leucetta chagosensis Dendy, 1913 (Seychelles)

Leucetta grisea (Dendy & Frederick, 1924) (WA)

Leucetta microraphis Haeckel, 1872 (Medit.)

Pericharax heteroraphis Poléjaeff, 1883 (Tristan de Cunha)

MERLIIDAE Kirkpatrick, 1908

Merlia deficiens Vacelet, 1980 (Medit.)

Merlia normani Kirkpatrick, 1908 (Madiera)

MICROCIONIDAE Carter, 1875

Clathria (Clathria) bulbosa Hooper & Lévi, 1993 (New Caledonia)

Clathria (Clathria) kylista Hooper & Lévi, 1993 (New Caledonia)

Clathria (Clathria) menoui Hooper & Lévi, 1993 (New Caledonia)

Clathria (Thalysias) araiosa Hooper & Lévi, 1993 (New Caledonia)

Clathria (Thalysias) corneolia Hooper & Lévi, 1993 (New Caledonia)

Clathria (Thalysias) flabellifera Hooper & Lévi, 1993 (New Caledonia)

Clathria (Thalysias) hirsuta Hooper & Lévi, 1993 (New Caledonia & GBR)

Clathria (Thalysias) vulpina (Lamarck, 1814) (Aust.)

Clathria (Wilsonella) australiensis Carter, 1885 (Port Philip)

Clathria (Wilsonella) litos Hooper & Lévi, 1993 (New Caledonia)

Clathria (Wilsonella) rugosa Hooper & Lévi, 1993 (New Caledonia)

Echinochalina (Echinochalina) intermedia (Whitelegge, 1902) (E. Aust.)

Echinochalina (Protophliaspongia) bargibanti Hooper & Lévi, 1993 (New Caledonia)

Echinochalina (Protophliaspongia) laboutei Hooper & Lévi, 1993 (New Caledonia)

MINCHINELLIDAE Dendy & Row, 1913

Minchinella kirkpatricki Vacelet, 1981 (New Caledonia)

Plectroninia hindei Kirkpatrick, 1900 (Funafuti)

Plectroninia lepidophora Vacelet, 1981 (New Caledonia)

Plectroninia microstyla Vacelet, 1981 (New Caledonia)

Plectroninia minima Vacelet, 1967 (Madagascar)

Plectroninia novaecaledoniense Vacelet, 1981 (New Caledonia)

Plectroninia tecta Vacelet, 1967 (Madagascar)

Plectroninia tetractinosa Vacelet, 1981 (New Caledonia)

Plectroninia vasseuri Vacelet, 1967 (Madagascar)

Tulearinia stylifera Vacelet, 1977 (Madagascar)

MURRAYONIDAE Dendy & Row, 1913

Murrayona phanolepis Kirkpatrick, 1910 (Christmas I.)

MYCALIDAE Lundbeck, 1905

Mycale (Zygomycale) parishi (Bowerbank, 1875) (Malaysia)

NIPHATIDAE van Soest, 1980

Amphimedon compressa Duchassaing & Michelotti, 1864 (Caribbean) [doubtful ID]

Gelliodes carnosus Dendy, 1889 (India)

Gelliodes fibulata (Carter, 1881) (Bass Strait)

Gelliodes persica Fromont, 1995 (GBR)

Niphates erecta Duchassaing & Michelotti, 1864 (Caribb.) [doubtful ID]

PARAMURRAYONIDAE Vacelet, 1967

Paramurrayona corticata Vacelet, 1967 (Madagascar)

PETROSIIDAE van Soest, 1980

Petrosia (Petrosia) capsus Desqueyroux-Faundez, 1987 (New Caledonia)

Xestospongia bergquistia Fromont, 1995 (GBR)

Neopetrosia exigua (Kirkpatrick, 1900) (Christmas I.)

PHLOEODICTYIDAE Carter, 1882

Oceanapia tenuis Desqueyroux-Faundez, 1987 (New Caledonia)

PODOSPONGIIDAE de Laubenfels, 1936

- Diacarnus levii* Kelly-Borges & Vacelet, 1996 (New Caledonia)
- POLYMASTIIDAE Gray, 1867**
- Polymastia tropicalis* Lévi, 1967 (New Caledonia)
- PSEUDOCERATINIDAE Carter, 1885**
- Pseudoceratina verrucosa* Bergquist, 1995 (New Caledonia)
- RASPAILIIDAE Hentschel, 1923**
- Ceratopsion clavatum* (Thiele, 1898) (Japan)
- Ceratopsion expansa* (Thiele, 1898) (Japan)
- Ceratopsion palmatum* Hooper, 1991 (N. Aust.)
- Raspailia (Raspaxilla) clathrioides* (Lévi, 1967) (New Caledonia)
- Raspailia (Raspailia) wilkinsoni* Hooper, 1991 (N. Aust.)
- SPIRASTRELLIDAE Ridley & Dendy, 1886**
- Sphaciospongia inconstans* (Dendy, 1887) (India)
- Sphaciospongia vagabunda* (Ridley, 1884) (N. Aust.)
- SPONGIIDAE Gray, 1867**
- Carteriospongia delicata* Pulitzer-Finali, 1982 (GBR)
- Coscinoderma mathewsi* (Lendenfeld, 1886) (Micronesia)
- Leiosella ramosa* Bergquist, 1995 (New Caledonia)
- Phyllospongia papyracea* (Esper, 1794) (Indian O.)
- Spongia (Spongia) australis* Bergquist, 1995 (New Caledonia)
- SPONGILLIDAE Van Soest, 1980**
- Pachyrotula raceki* (Rutzler, 1968) (New Caledonia)
- SYCETTIDAE Dendy, 1892**
- Sycon gelatinosum* (Blainville, 1847) (Aust.)
- TETHYIDAE Gray, 1848**
- Tethya japonica* Sollas, 1888 (Philippines)
- Tethya sollasi* Bergquist & Kelly-Borges, 1991 (NZ)
- Tethya topsenti* Sara, Bavestrello & Calcinai, 2000 (New Caledonia)
- TETILLIDAE Sollas, 1886**
- Cinachyrella schulzei* (Keller, 1891) (Aden)
- Cinachyrella tenuiviolacea* (Pulitzer-Finali, 1982) (GBR)
- THORECTIDAE Bergquist, 1978**
- Fascaplysinopsis reticulata* (Hentschel, 1912) (Aru I)
- Hyrtilos erectus* (Keller, 1889) (Eritrea)
- Hyrtilos reticulatus* (Thiele, 1899) (Indonesia)
- Luffariella caliculata* Bergquist, 1995 (New Caledonia)
- Luffariella cylindrica* Bergquist, 1995 (New Caledonia)
- Petrosaspongia nigra* Bergquist, 1995 (New Caledonia)
- TRACHYCLADIDAE Hallmann, 1917**
- Trachycladus digitatus* Lendenfeld, 1887 (E. Aust.)
- VERTICILLITIDAE Steinmann, 1882**
- Vaceletia crypta* (Vacelet, 1977) (Madagascar)



Aka sp.

© IRD/Jean-Louis Menou



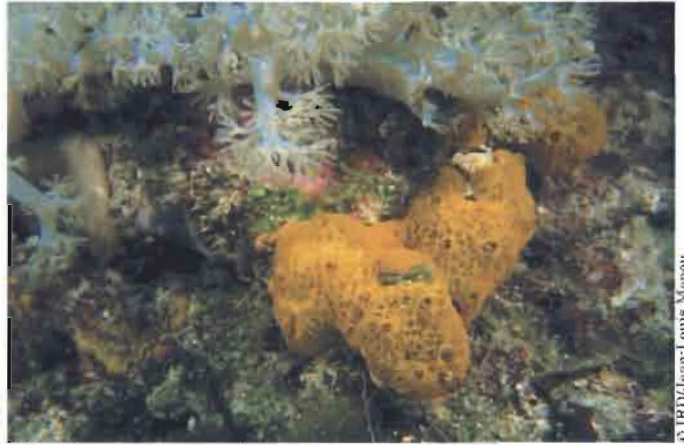
Chlathria rugosa

© IRD/Jean-Louis Menou



Dactyllia delicata

© IRD/Jean-Louis Menou



Hamigera strongylata

© IRD/Jean-Louis Menou



Lamellodysidea herbacea

© IRD/Jean-Louis Menou



Liosina paradoka

© IRD/Jean-Louis Menou



Lissodendouyx schmidti

© IRD/Jean-Louis Menou



Lufariella cylindrica

© IRD/Jean-Louis Menou



© IRD/Jean-Louis Menou

Myrmekioderma sp.



© IRD/Jean-Louis Menou

Petrosia capsa



© IRD/Jean-Louis Menou

Phakellia cavernosa



© IRD/Jean-Louis Menou

Phyllospongia papyracca



© IRD/Jean-Louis Menou

Psammocora sp.



© IRD/Jean-Louis Menou

Spheciospongia vagabunda



© IRD/Jean-Louis Menou

Sycon sp.



© IRD/Jean-Louis Menou

Xetospongia berquista

DOCUMENTS
SCIENTIFIQUES
et TECHNIQUES

II7

Volume spécial

COMPENDIUM
of marine species from
New Caledonia



Edited by
CLAUDE E. PAYRI
Bertrand RICHER DE FORGES



Institut de recherche
pour le développement

CENTRE DE NOUMÉA

DOCUMENTS
SCIENTIFIQUES
et TECHNIQUES



Institut de recherche
pour le développement

Publication éditée par:
Centre IRD de Nouméa
BP A5, 98848 Nouméa CEDEX
Nouvelle-Calédonie
Téléphone: (687) 26 10 00
Fax: (687) 26 43 26

L'IRD propose des programmes regroupés en 5 départements pluridisciplinaires :

- I DME Département milieux et environnement
- II DRV Département ressources vivantes
- III DSS Département sociétés et santé
- IV DEV Département expertise et valorisation
- V DSF Département du soutien et de la formation des communautés scientifiques du Sud

Modèle de référence bibliographique à cette revue :

Adjeroud M. *et al.*, 2000. Premiers résultats concernant le benthos et les poissons au cours des missions TYPATOLL.
Doc. Sci. Tech. II 3, 125 p.

ISSN 1297-9635

Numéro II7 - Octobre 2006

© IRD 2006

Distribué pour le Pacifique par le Centre de Nouméa.

Première de couverture : Récif corallien (Côte Ouest, NC) © IRD/C. Geoffray
Vignettes : voir les planches photographiques

Quatrième de couverture : *Platygyra sinensis* © IRD/C. Geoffray

Matériel de plongée sous-marine © IRD/C. Geoffray	L'Aldric, moyen navigant de l'IRD © IRD/J.-M. Boré
Récoltes et photographies sous-marines en scaphandre autonome © IRD/J.-L. Menou	Traitement des récoltes en laboratoire © IRD/L. Mattio

CONCEPTION/MAQUETTE/MISE EN PAGE
MAQUETTE DE COUVERTURE
PLANCHES PHOTOGRAPHIQUES
TRAITEMENT DES PHOTOGRAPHIES

JEAN PIERRE MERMOUD
CATHY GEOFFRAY/ MINA VILAYLECK
CATHY GEOFFRAY/JEAN-LOUIS MENOU/GEORGES BARGIBANT
NOËL GALAUD

La traduction en anglais des textes d'introduction, des Ascidies et des Echinodermes a été assurée par EMMA ROCHELLE-NEWALL, la préface par MINA VILAYLECK.

Ce document a été produit par le Service ISC, imprimé par le Service de Reprographie du Centre IRD de Nouméa et relié avec l'aimable autorisation de la CPS, financé par le Ministère de la Recherche et de la Technologie.

ISSN 1297-9635
Numéro II7 - Octobre 2006
© IRD 2006

**COMPENDIUM OF MARINE SPECIES FROM
NEW CALEDONIA**

Edited by
CLAUDE E. PAYRI, BERTRAND RICHER DE FORGES
