the Marine Fauna of New Zealand

A style guide for authors

The NIWA Biodiversity Memoirs are comprehensive, definitive, illustrated reference works that capture the rigorous, peer-reviewed scientific study of New Zealand's distinctive marine fauna and flora. The information in these monographs provides the foundation upon which marine biological and ecological research sits.

The NIWA Biodiversity Memoir series comprises technical works that describe New Zealand's invertebrate marine life—sponges, corals, hydroids, worms, molluscs, crustaceans, sea stars and lesser-known groups. They are beautifully presented, stand-alone monographs that reveal the history and diversity of the subject groups, with new species names and revisionary work that is relevant globally.

These important publications are indispensable references for academic researchers and postgraduate students interested in marine systematics and the conservation of New Zealand's unique aquatic biodiversity, much of which is found nowhere else in the world.

Many marine invertebrates such as sponges and corals form 'gardens' or biological habitats that support other animals, including commercially important fish species. These habitats can be vulnerable to damage by human activities such as fishing and seabed mining; thus, knowledge of their biodiversity is critical for understanding the function of deep-sea and seamount ecosystems to improve their management.

1 Criteria for publication

The three key criteria for eligibility for publication in the NIWA Biodiversity Memoir series are: 1) Geographical coverage - taxa mainly pertain to the New Zealand EEZ region; 2) NIWA specimens - in most cases the work should be based on a comprehensive study of the material in the NIWA collections, whether collected by NIWA or foreign going vessels, but is not restricted to NIWA held collections where appropriate to fully document the New Zealand biodiversity; 3) Size of manuscript - the minimum printed [finished] size is 50 pages. Manuscripts are usually prepared only after invitation from NIWA, but we are open to proposals.

2 Review process

Manuscripts are externally peer-reviewed for scientific importance, novelty, accuracy and taxonomic and systematic integrity of the work, but also for other standard criteria for

publication, such as quality and appropriateness of figures, tables and statistics. Authors may suggest up to three appropriate reviewers.

3 Deposition of specimens

We encourage authors to ensure that all specimens referred to in the manuscript are registered in national or international public museums or collections. It is a requirement of New Zealand law that primary type specimens are deposited in the country of origin for all newly described species. The technical editor of this series can assist with the location of, registration of and shipment of material between collections if required.

4 Preparation of manuscript

Manuscripts should be prepared in the styles of the latest NIWA Biodiversity Memoir. A pdf can be sent to you upon request.

4.1 Manuscript sections

The manuscript must be in English using Times New Roman font size 12 in a single 1.5 spaced column. Use the following section headings:

PREFACE
- Abstract
- Keywords
- Introduction
- Methods and materials
- Terminology
- Abbreviations
- Acknowledgments

TAXONOMY & SYSTEMATICS
- Checklist of species known from the New Zealand EEZ
- Systematics
- **Diagnosis.**
  - **Remarks.**
- **Type material.**
- **Material examined.**
  - **Type locality.**
  - **Type & locality.** [when type material has not been examined]
  - **Distribution.** [locality, depth/depth range]
  - **Habitat.**
  - **Description.**
  - **Skeleton.** [or a parameter specific to your organism group]
  - **Spicules.** [or a parameter specific to your organism group]
  - **Etymology.** [for new species only]
  - **Remarks.** [comparisons between this and other species]
  - **Key diagnostic characters.**
- Discussion
- References
- Appendices [including seafloor images of living organisms if appropriate]
- Taxonomic Index

4.2 Cover and section images

Please provide an image of your choice for the memoir cover and section dividers. The editors are happy to work with you to select an appropriate image and will do all photographic manipulations.

4.3 Numerical ranges or spans

Page and numerical ranges or spans (e.g. Fig. 3–4; 1987–1989) are connected by an En Dash (–), not a hyphen (-), which is used to connect two words. All measurements must be in metric.

4.4 Abbreviations

- When referring to a Figure in the text, the word "Figure" is abbreviated as "Fig."; plural “Figs”
- When referring to a Plate in the text, the word "Plate" is abbreviated as "Pl."
- When referring to a Table in the text, the word "Table" is not abbreviated
- scuba, sem, etc. are in lower case

4.5 Capitalisation

It is not necessary to capitalise taxon names like phylum, class, order, family, genus within text

4.6 Hyphenation

When two words are used as adjectives, e.g. shallow-water sponge, northern-hemisphere primnoids, please use a hyphen

4.7 Tables

To facilitate a simpler layout where tables are unique to individual species descriptions, please:

- Provide only one species per table within a species description, unless reviewing multiple species at the end of the manuscript, separate from the species descriptions
- Use the table function in your word processor
- Check that all text references to the tables are correct
- Place tables and table legends after the references

4.8 Figures

We welcome discussion with you on construction of your figures. To facilitate a simpler layout where figures are unique to individual species descriptions, and not shared between species, please:

- Provide only one or two figures, or group of figures per species description, which may include gross and detailed morphology.
- The final maximum print size of figures and maps is 17 cm wide by 25 cm deep. Images can be submitted separately as jpeg, tiff or psd files and be a minimum size of 600 dpi.
- Please check that all text references to the figures are correct.
- Place the figures and figure legends after the tables

4.9 Distribution maps

Distribution maps are preferably separate. If you need assistance with production of individual species distribution maps please get in contact with the technical editor.

5 Taxonomy & Systematics

Taxonomic nomenclature must agree with the International Code of Zoological Nomenclature (4th edition 1999), which came into force on 1 January 2000, or the International Code of Nomenclature for algae, fungi, and plants (2011).

5.1 Citation of taxonomic authorities

The taxonomic authority (Author, date) of a species name or pertinent higher taxon should be supplied in full the first time that it appears in the abstract, and then again in the body of the manuscript. If you cite the date of a taxonomic authority provide the reference.

5.2 New taxon annotation

New species are cited as **sp. nov.** after the species name; new higher taxon cited as [**higher taxon**]**. nov.** after the higher taxon name.

5.3 Synonymy

The punctuation used in the listing of the synonyms is quite specific. Please follow the general style listed below, with examples provided:

- The citation for the **authority of a specific taxon** is written with a comma separating the author's name from the date of publication, with page and figure numbers following as these citations double up as a literature reference.
- All **additional citations** for that taxon, where later authors have included it in their publication, only refer to literature and as such there should be no comma between the author's name and the date.
- References to plates and figures in the synonymy should be written not as Pl. and Fig., but in the lower-case pl. and fig.

***Primnoella australasiae* (Gray, 1850)**
Primnoa australasiae Gray, 1850: 146, pl. 2, fig. 8–9.
Primnoella australasiae, Gray 1858: 286; Verrill 1876: 76–77; Wright & Studer 1889: 88, pl. 18, fig. 1, 1a, pl. 21, fig. 15; Versluys 1906: 52–54, text fig. 55–59; Thomson & Mackinnon 1911: 688, pl. 61, Fig. 1; Kükenthal 1919: 401–402, pl. 41, fig. 62–63; Kükenthal 1924: 286; Benham 1927: 67, 68 (listed); Bayer 1996: 167–171, fig. 18–19; Cairns & Bayer 2009: 26, fig. 4Q–Z; Cairns *et al*. 2009: 93 (listed).

***Ecionemia alata* (Dendy, 1924)**
Ancorina alata Dendy, 1924: 298; pl. V, fig. 1, 2; pl. VIII, fig. 1–7.
Ancorina alata, Bergquist 1968: 38; pl. 5d, 6a, 13f, g; fig. 12.
Ancorina osculifera Dendy, 1924: 300.

6 "Material examined" style guide

The order in which specimen data is listed in the *Material examined* sections is quite specific and careful and detailed attention must be brought to getting this right. We provide examples of the following situations below:

- **Known species**: Holotype/paratype/syntype NOT BOLD, separated from number by EM dash, insert place name after latitude and longitude
- **New species**: Holotype/paratype/syntype BOLD, NOT separated from number by EM dash, insert place name after latitude and longitude
- **Order of data**: Catalogue number, Cruise/Station number, latitude (decimal degrees to at most three decimal points), longitude (decimal degrees to at most three decimal points), place name if known or more exact than region grouping, depth (range separated by EN dash), date, (subsample information of catalogued lots at other institutions, if relevant, in parentheses).
- **Non-New Zealand specimens.** Please check station data for Exclusive Economic Zone status (whether New Zealand EEZ, Australian EEZ, or from International waters). This is particularly important for Macquarie Ridge stations. Our technical editor can assist with this.
- **When there is more than one specimen with the same registration prefix**, you need only list the numbers afterwards, i.e., NIWA 1234, 3546, 3436, NIWA Stn TAN1105/53 etc.
- **All paratypes and non-type material examined (excluding holotype)**: group by region as in the following examples.
- **Scientific Observer collected specimens**: Please truncate latitude and longitude to one decimal point for any samples from a TRIP station. This is a requirement of use of MPI observer collected specimens.

Example of a known species where the type species HAS BEEN examined:

Material examined. Holotype—NHMUK1923.10.1.36, wet subsample from R.N.XXXII5, 7 miles east of North Cape, British Antarctic Terra Nova Expedition, 1910, 16 Jul–24 Sep 1911, 128 m; NHMUK1923.10.1.36, microscope slides from R.N.XXXII3, 7 miles east of North Cape, British Antarctic Terra Nova Expedition, 1910, 16 Jul–24 Sep 1911, 128 m.

Other material. *Three Kings Islands*: NIWA 73302, NIWA Stn TAN1105/53, 33.959° S, 171.795° E, 107–108 m, 29 Mar 2011.

Northland: NIWA 43923, NZOI Stn J953, 34.660° S, 172.218° E, 270 m, 18 Jun 1981.

Hauraki Gulf: NIWA 43910, NZOI Stn Z8487, 36.007° S, 175.917° E, 230 m, Jan 1994.

Bay of Plenty: NIWA 52857, NIWA Stn SO135/98, Mayor Island, 37.614° S, 177.101° E, 160–161 m, 9 Oct 1998; NIWA 52867, NIWA Stn SO135/99, Tauranga, 37.615° S, 177.096° E, 165–170 m, 9 Oct 1998.

Type locality.

Distribution.

Example of known species where the type material has NOT BEEN examined:

Material examined. *Three Kings Islands*: NIWA 73302, NIWA Stn TAN1105/53, 33.959° S, 171.795° E, 107–108 m, 29 Mar 2011.

Northland: NIWA 43923, NZOI Stn J953, 34.660° S, 172.218° E, 270 m, 18 Jun 1981.

Hauraki Gulf: NIWA 43910, NZOI Stn Z8487, outer Hauraki Gulf, 36.007° S, 175.917° E, 230 m, Jan 1994.

Bay of Plenty: NIWA 52857, NIWA Stn SO135/98, 37.614° S, 177.101° E, 160–161 m, 9 Oct 1998; NIWA 52867, NIWA Stn SO135/99, Tauranga, 37.615° S, 177.096° E, 165–170 m, 9 Oct 1998.

Type & locality. Holotype—NHMUK1923.10.1.36, wet subsample from R.N.XXXII5, 7 miles east of North Cape, British Antarctic Terra Nova Expedition, 1910, 16 Jul–24 Sep 1911, 128 m; NHMUK1923.10.1.36, microscope slides from R.N.XXXII3, 7 miles east of North Cape, British Antarctic Terra Nova Expedition, 1910, 16 Jul–24 Sep 1911, 128 m.

Distribution.

Example of a new species:

Material examined. Holotype NIWA 50592, SOP Stn TRIP2101/4, 48.370° S, 172.968° E, Campbell Plateau, 913–1000 m, 20 May 2005. **Paratypes** *Bounty Plateau*: NIWA 66048, SOP Stn TRIP2970/76, 47.3° S, 178.7° E, 845–978 m, 28 Nov 2009; NIWA 66161, SOP Stn TRIP2718/146, 47.3° S, 178.2° E, 904–907 m, 28 Nov 2008.

Other material. *Tasman Sea (International Waters)*: NIWA 44515, NZOI Stn Z10308, 49.375° S, 150.450° E, 913–1148 m, 31 Jul 2000; NIWA 98917, NZOI Stn Z10307, 49.38° S, 150.46° E, 918–1018 m, 1 Aug 2000.

Macquarie Ridge: NIWA 50612, SOP Stn TRIP2571/154, 50.3° S, 163.5° E, 934–1051 m, 19 Mar 2008.

Bay of Plenty: NIWA 52857, NIWA Stn SO135/98, 37.614° S, 177.101° E, 160–161 m, 9 Oct 1998; NIWA 52867, NIWA Stn SO135/99, 37.615° S, 177.096° E, 165–170 m, 9 Oct 1998.

Type locality.

Distribution.

7 "References" style guide

References should be cited in the text as Cairns (2012), Cairns & Bayer (2009), Tracey *et al.* (2011) for three or more authors, or alternatively in a parenthesis (Cairns 2012), (Cairns 2000, 2004), (Cairns 2009; Baird 1997, 2000) with no comma separating the author and year). Use an En Dash (–), not a hyphen (-) to separate dates. All literature cited in the text must be listed in the references in the following format:

7.1 Journal articles

Bayer, F.M. (1954) New names for two genera of Octocorallia. *Journal of the Washington Academy of Sciences 44*: 296.

Bostock, H.C., Tracey, D.M., Currie, K.I., Dunbar, G.B., Handler, M.R., Mikaloff-Fletcher, S.E., Smith, A.M., Williams, M.J.M. (2015) The carbonate mineralogy and distribution of habitat-forming deep-sea corals in the southwest pacific region. *Deep-Sea Research I*, 100: 88–104.

7.2 Book chapters

Cairns, S.D., Gershwin, L.-A., Brook, F.J., Pugh, P., Dawson, E.W., Ocana, V.O., Vervoort, W., Williams, G., Watson, J.E., Opresko, D.M., Schuchert, P., Hine, P.M., Gordon, D.P., Campbell, H.J., Wright, A.J., Sánchez, J.A., Fautin, D.G. (2009) Phylum Cnidaria: Corals, medusae, hydroids, myxozoans. Pp. 59–101 *in*: Gordon, D.P. (Ed) *New Zealand Inventory of Biodiversity*: *Volume 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch. xii + 219 pp.

7.3 Books

Kükenthal, W. (1924) *Coelenterata*: *Gorgonaria*. Das Tierreich 47. Walter de Gruyter & Co., Berlin, 478 pp.

7.4 Older literature

In many older references the plates and figures are not paginated within the text and may even be in a separate part of the journal. In these instances, the plates need to be added to the reference, for example:

Sollas, W.J. (1888) Report on the Tetractinellida collected by H.M.S. 'Challenger' during the years 1873–1876. Report on the scientific results of the voyage of H.M.S. 'Challenger', 1873–1876. *Zoology*, 25, 1–458, pls I–XLIV, map.

7.5 Internet resources

Gordon, D.P., Mills S. (2016) Bountiful Bryozoans, an interactive e-guide to the common bryozoans of New Zealand. V 1.0, NIWA 52 pp. Available from: http://www.niwa.co.nz/coasts-and-oceans/marine-identification-guides-and-fact-sheets/Bryozoans (Date of Access).

Client or technical reports, unpublished graduate theses and conference proceedings should be treated as book references.

8 Seafloor images of living invertebrates

With increasing use of NIWA's DTIS (Deep Towed Imaging System) onboard RV *Tangaroa*, and other seafloor imaging tools such as Remotely Operated Vehicles (ROV) and submersibles, to record our national marine biodiversity beyond diving depths, there is a critical need to provide accurate identifications from images only. While we may be able to improve our accuracy by examining specimens taken from the same stations, an element of doubt remains as to the identity of invertebrate species using images only, especially if they do not have any obvious diagnostic morphological characters that facilitate determination at the specimen level.

We encourage you to put together an appendix of ROV, submersible, or DTIS images that fill this need, providing the most accurate identification as possible, based upon our understanding of the species featured in the Memoir. Again, our editors are only too happy to facilitate this with the provision of images to go through.

9 Submission to NIWA Biodiversity Memoir Series

Submit your manuscript to Michelle.kelly@niwa.co.nz, with tables, figures (compressed in document) and figure legends at the end of the file. We would expect to have been in discussion with you well before this stage!

10 Key contacts

Please contact the Series and Managing Editor Michelle Kelly, for manuscript submission, review and general enquires.

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Please contact the technical editor, Sadie Mills, if you require NIWA catalogue numbers for examined material, specific acknowledgment wording for projects that provided material, or any updated locality and preparation information for NIWA Invertebrate Collection registered specimens.

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