



Saving an octocoral genus from a “zoanthid” genus: reversal of precedence of *Palythoe* Lamouroux, 1812, and *Muricea* Lamouroux, 1821 (Cnidaria: Anthozoa: Octocorallia)

MARTYN E. Y. LOW¹ & JAMES DAVIS REIMER^{2,3}

¹Department of Marine and Environmental Sciences, Graduate School of Engineering and Science, University of the Ryukyus, 1 Senbaru, Nishihara, Okinawa 903-0213, Japan. E-mail: m.low@me.com

²Molecular Invertebrate Systematics and Ecology Laboratory, Rising Star Program, Trans-disciplinary Organization for Subtropical Island Studies, University of the Ryukyus, 1 Senbaru, Nishihara, Okinawa 903-0213, Japan; Marine Biodiversity Research Program, Institute of Biogeosciences, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2-15 Natsushima, Yokosuka, Kanagawa 237-0061, Japan. E-mail: jreimer@sci.u-ryukyu.ac.jp

³Corresponding author

Lamouroux (1812: 360) established the genus-group name *Palythoe*, with the following diagnosis in French: “*Palythoe* [...] P[olypiers] dendroïde rameux; axe presque toujours comprimé, recouvert d’une écorce très épaisse, en partie calcaire, parsemé de mammelous saillans, chacun terminé par une cellule polypifère”. This translates as: “A group dendroid in branching; almost always axially compressed, covered with very thick ectoderm, partly calcareous dotted with prominent bumps, each terminated by a polyp”.

Within this genus-group, Lamouroux included three available species-group names—*Gorgonia antipathes* Linnaeus, 1758, *Gorgonia muricata* Pallas, 1766, and *Gorgonia papillosa* Esper, 1797. No type species was designated.

Four years later, in his treatise *Histoire des Polypiers Coralligènes*, Lamouroux (1816: 359) established the genus-group name *Palythoa*, with the following diagnosis in French: “*Palythoé. Palythoa*. [...] Polypier en plaque étendue, couverte de mamelons nombreux, cylindriques, de plus d’un centimètre de hauteur, réunis entre eux; les cavités ou cellules isolées, presque cloisonnées longitudinalement et ne contenant qu’un seul polype”, which translates as “platelike, covered in a number of nipples that are cylindrical and more than one centimetre in height, joined together, the cavities or cells are isolated almost longitudinally partitioned containing only one polyp”.

Two available species-group names were included in *Palythoa* by Lamouroux (1816: 359–362)—*Alcyonium mammosum* Ellis & Solander, 1786, and *Alcyonium ocellatum* Ellis & Solander, 1786. Haddon & Shackelton (1891b: 691) designated *Alcyonium mammosum* as the type species of *Palythoa*.

It would appear that the name “*Palythoe*” (as used by Lamouroux 1812) was simply the French vernacular (and thus unavailable) name of *Palythoa* (as used by Lamouroux 1816). However, the style and format in which the name was printed in Lamouroux (1812) is indicative that it was indeed a Latinised name. Firstly, there is no accent on the last letter “e” of *Palythoe* (as used in Lamouroux 1812), despite accents being used on other “e”s in the rest of the text, as consistent with their use in French language. Secondly, no French vernacular names for any of the other genera are given in Lamouroux (1812). All the other genus-group names (e.g. *Isis*, *Melitea*, *Adeona*) are clearly in Latin. Finally, the descriptions of the 1812 and 1816 genus-groups are clearly different. Thus, the genus-group names *Palythoe* and *Palythoa* are two separate and distinct names proposed by Lamouroux in 1812 and 1816, respectively.

Article 56.2 of The International Code of Zoological Nomenclature (hereafter the Code, ICZN 1999: 60) states that a one-letter difference between two genus-group names is sufficient to prevent homonymy. Thus, both *Palythoe* and *Palythoa* are available names.

It is clear from the respective diagnoses of *Palythoe* and *Palythoa* that they are distinct taxonomic entities. *Palythoe* is clearly a “partially calcerous”, branching octocoral group, while *Palythoa* is clearly a colonial zoanthid.

Palythoa is currently considered to be a valid zoanthid genus and is in widespread use (e.g. Burnett *et al.* 1997: 55, 57–59, 63–67; Reimer *et al.* 2006: 87–93; Ryland & Lancaster 2003: 407–411, 416, 420, 422, 426–428). The genus-group name *Palythoe* as defined by Lamouroux (1812) has not been used as a valid genus in over 100 years. Furthermore, all instances of the name “*Palythoe*” in post-1899 literature are clearly incorrect spellings of *Palythoa* and refer to zoanthids and not octocorals (e.g. Branch *et al.* 2007: 16; Stimson 1974: 445). To prevent future confusion and

continued incorrect use of *Palythoe* as a zoanthid genus-group name, its identity needs to be fixed with the designation of a type species.

All three nominal species names included in *Palythoe* by Lamouroux (1812: 188)—*Gorgonia antipathes*, *Gorgonia muricata*, and *Gorgonia papillosa*—qualify for designation as type species (Article 67.2, ICZN 1999: 66, 67). Herein, *Gorgonia muricata* Pallas, 1766, is designated as the type species of *Palythoe* Lamouroux, 1812. *Gorgonia muricata* is currently assigned to the genus *Muricea* Lamouroux, 1821 (e.g. see Bayer 1961: 182), making *Palythoe* and *Muricea* subjective synonyms.

The genus *Muricea* was established by Lamouroux (1821: 36) with the inclusion of two new species, *Muricea spicifera* and *Muricea elongata*. *Muricea spicifera* was subsequently designated as type species of *Muricea* by Milne Edwards & Haime (1850: lxxx). Lamouroux (1821: 36) defined *Muricea* as follows: “Polypier dendroïde, rameux; axe cylindrique souvent comprimé a l’aisselle des rameaux; écoree, cylindrique, d’une épaisseur moyenne; cellules en forme de mamelons saillants, épais, couverts d’écailles imbriquées et hérissées; ouverture étoilée à huit rayons”. This can be translated as “Dendroid branching corals, compressed along the axis of the branches; ectoderm of average thickness; protruding nipples, thick, covered with overlapping scales and bristles, terminated with eight-sided-star-shaped”. This description is not unlike that of *Palythoe*.

The Principle of Priority (Article 23, ICZN 1999: 24) requires that the oldest available name for the taxon under consideration is to be used. However, replacing *Muricea* with *Palythoe* is not in the interest of nomenclatural stability. To mediate the Principle of Priority, Article 23.9 of the Code (ICZN 1999: 27, 28) requires a reversal of precedence of a junior synonym when the senior synonym has not been used as a valid name after 1899 (Article 23.9.1.1) and the junior synonym “has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years” (Article 23.9.1.2). The genus-group name *Palythoe* has not been used as valid name since 1899 (thus fulfilling Article 23.9.1.1 of the Code). In the Appendix, we list 30 publications by 71 different authors in the past 47 years in which the name *Muricea* has been used as valid name for the taxon it denotes (thus fulfilling Article 23.9.1.2 of the Code).

As both requirements of Article 23.9.1 are met, and in accordance with Article 23.9.2, the name *Muricea* Lamouroux, 1821, is considered a valid name and takes precedence over *Palythoe* Lamouroux, 1812. *Muricea* now becomes a *nomen protectum* and *Palythoe* a *nomen oblitum*.

With the objective determination of its identity and its objective synonymy with *Muricea*, *Palythoe* should cease to cause confusion in the nomenclature of the octocorals and zoanthids.

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Appendix

A list of 30 publications by 71 different authors published in the last 47 years using *Muricea* Lamouroux, 1821, as a valid name to fulfil the requirements of Article 23.9.1.2 of the Code (ICZN 1999: 28).

- Anderson, S.A., Northcote, P.T. & Page, M.J. (2010) Spatial and temporal variability of the bacterial community in different chemotypes of the New Zealand marine sponge *Mycale hentscheli*. *FEMS Microbiology Ecology*, 72(3), 328–342 [pp. 337, 339].
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- Cadena, N.J., Rey, C., Hernández-Hoyos, M., Sánchez, J.D., Teillaud, S., Ardila, N. & Sánchez, J.A. (2010) Linking local to global properties in branching modular networks: gorgonian coral colonies. *Marine Biology*, 157(5), 1003–1010 [p. 1004].
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