

Bulletin of the Auckland Museum

Volume 20 | 2015

AM

TAMAKI PAENGA HIRA
AUCKLAND WAR MEMORIAL MUSEUM



Kermadec Biodiscovery Expedition 2011

Edited by

Thomas Trnski and Heidi Ann Schlumpf

www.aucklandmuseum.com

Marine invertebrates collected during the Kermadec Biodiscovery Expedition 2011

Stephen J. Keable Australian Museum Research Institute

Amanda L. Reid Australian Museum Research Institute

Abstract

Marine invertebrates, excluding decapod Crustacea, collected during the Kermadec Biodiscovery Expedition 2011 are documented. Five hundred and nine taxa, including 170 species, are recorded, principally from samples of substrate obtained from depths of less than 30 metres, although results from limited intertidal and deeper sampling are also included. The highest diversity of taxa was found at Raoul and satellite islands but this is interpreted as reflecting sampling bias. The collection reinforces previously reported patterns of faunal connectivity being strongest with the tropical and subtropical southwest Pacific. Significant discoveries to date include the recognition of approximately 20 undescribed species, 44 species distribution records that are new for New Zealand waters, an additional 25 higher level (genus or family) range extensions into New Zealand waters and 27 species distribution records that are new for the Kermadec Islands. These results indicate that there is considerable scope for further discoveries in attempts to document the diversity of the invertebrate fauna in the nearshore marine environment of the Kermadec Islands. Some recommendations are made to aid future efforts in this endeavour.

INTRODUCTION

The social and economic value of New Zealand marine biodiversity is recognised as a significant resource that is important to conserve and manage (Department of Conservation, 2011). A fundamental step in this process is an accurate inventory (Morrison, 2009). With the sea area of the New Zealand Exclusive Economic Zone being the fifth largest in the world and exceeding the land area by over 1,400% (Gordon & Bisby, 2009) it is understandable that it has been suggested that approximately 90% of New Zealand's biodiversity occurs in the marine or estuarine environment (marineNZ, 2009). Invertebrates clearly constitute a significant proportion of this total, generally being recognised as comprising 95 to 99% of all animal diversity (Ponder *et al.*, 2002; Cook, 2010).

Important initiatives in documenting and analysing this diversity, which include the New Zealand marine invertebrate fauna, are several recent publications, others in press or in preparation, and on-line databases (Brook, 1998; Gordon, 2009; NZOR, 2009; Cook, 2010; Gordon, 2010; Gordon *et al.*, 2010). The Kermadec Islands group, New Zealand's only subtropical territory, represents a notable element, with inventories of the invertebrates of intertidal and subtidal habitats suggested as a research priority for documenting biodiversity (Gardner, 2010). This report contributes to this goal by reviewing the marine invertebrates collected during the Kermadec Biodiscovery Expedition 2011, with the exception of

decapod crustaceans that are documented by Ah Yong (2015). Additionally, a discussion of significant records and an overview of the biogeography of the species recorded are provided.

For an outline of the goals, expedition collection stations and biogeographic setting of the Kermadec Islands, see Trnski & de Lange (2015).

METHODS

An attempt was made to collect a wide cross-section of invertebrates; in particular, crustaceans, molluscs and polychaetes were targeted. Therefore, a number of different collecting methods were used. Methods employed at particular sites were dependent on the prevailing weather, sea conditions, and nature of the underwater topography. A range of habitats, depths, and sheltered and non-sheltered locations were also selected for sampling. From these areas various substrates in which invertebrates are found, such as encrusting growth (e.g. algae and sponges) and sediments, were collected (Trnski & de Lange, 2015).

Most sampling was done by hand while using SCUBA, with substrate collected in mesh bags (mesh size one millimetre). Other methods employed included the use of a night light and dip net, airlift while using SCUBA and baited traps. Traps with openings of approximately one centimetre diameter (Keable, 1995) were placed inside larger 10 centimetre diameter opening 'Fathom

Plus'® (San Diego, California) traps and left overnight on the bottom tied to weights and marker buoys. An attempt was made to sample sediments in the vicinity of North Meyer Island at a depth of approximately 15 to 30 metres using a hand hauled van Veen grab but the sediments were coarse and winnowed out of the grab as it was pulled to the surface.

Subtidal and surface collections were supplemented by intertidal samples collected by hand. These samples came primarily from two stations at Fishing Rock, Raoul Island, where an intensive search of the immediate shore was possible. However, additional intertidal specimens were acquired through opportunistic collection by shore parties chiefly concerned with obtaining insect and plant samples (Trnski & de Lange, 2015).

In the field, samples were reduced in size by sieving (mesh size one millimetre) and elutriation where appropriate. Samples and specimens extracted from them were fixed in 10% formalin and subsequently transferred to 70 to 80% ethanol, or fixed in 95% ethanol, in some cases, to facilitate future DNA extraction.

Following fixation, all invertebrate collections were shipped to the Australian Museum, Sydney, for further processing. Formalin-fixed material was soaked out in several changes of fresh water and transferred to 70 to 80% ethanol prior to sorting and identification. The material was then split into broad taxonomic groups, using a dissecting microscope in many cases.

After initial sorting, specimens were made available to relevant experts for identification. The Asteroidea were identified from images of preserved specimens. A standard classification was applied to these identifications and recorded, along with previously known distributions, either through reference to the Australian Faunal Directory (ABRS, 2012), Duffy & Ahyong (2015), Gordon (2009), Gordon (2010), the World Register of Marine Species (WoRMS, 2012), additional publications, or consultation with relevant experts. However, any errors in reporting are those of the authors.

Specimens have been divided equally, where possible, between the Auckland Museum and the Australian Museum for final lodgement and housing. Algal samples that were retained have been deposited at the Auckland Museum and the National Herbarium of New South Wales.

RESULTS

Table 1 lists the recognised taxa ordered alphabetically by phylum and then alphabetically by class, order, family, genus and species within a phylum. The distribution of these taxa within the island groups sampled is also indicated. Where specimens could be identified with a known species, or recognised as a species distinct from known species, the accepted distribution outside the Kermadec Islands group is also indicated.

A total of 509 invertebrate taxa, excluding the decapod Crustacea that are reported separately by Ahyong (2015), are recognised from the marine samples obtained during the Kermadec Biodiscovery Expedition 2011 (Table 1). Of these, 170 are positively identified

with previously known species. From these, 44 new distribution records for New Zealand and an additional 27 new distribution records for the Kermadec Islands were recorded (Table 1). Furthermore, approximately 25 taxa represent new distribution records for New Zealand at the level of genus or family (Table 1).

To date approximately 20 undescribed species have been recognised from these samples (Table 1; Bird, 2015; Kelly *et al.*, 2015; Mitchell, in prep.; O'Loughlin & Vandenspiegel, 2012; Reid & Wilson, 2015, C. Watson, in prep.; J. Watson, 2015; Willan & Beechey, 2015). Among the Heterobranchia, specimens of *Dunga* and *Elysia* probably represent new species, but more material may be required for their full description. In addition, 60 species of decapod Crustacea are recorded, including five new species, by Ahyong (2015); 45% of these 60 species correspond to new distribution records for New Zealand.

Four hundred and forty one taxa are recorded from Raoul and satellite islands, 105 taxa are recorded from Macaulay Island, 71 taxa are recorded from Curtis and Cheeseman islands and 86 taxa are recorded from L'Esperance Rock.

Of the material identified to species, only two rissoid micromolluscs, two tanaidacean crustaceans (*Paradoxapseudes* n. sp. and *Zeuxo* n. sp., see Bird (2015)) and the serpulid polychaete *Spirobranchus polytremus* (Philippi, 1844) were found at all of the four main sampling locations representing the different island groups (Table 1). Eighteen species were collected at three of these sampling locations: the pycnogonid *Achelia assimilis*; the amphipod *Mallacoota chiltoni*; the tanaidacean *Leptocheilia* n. sp.; the asteroid *Petricia imperialis*; the echinoids *Heliocidaris tuberculata* and *Centrostephanus rogersii*; the sipunculid *Aspidosiphon misakiensis*; the molluscs *Bursa verrucosa*, *Conus lischkeanus*, *Neothais smithi*, the conspicuous Kermadec limpet *Scutellastra kermadecensis*, *Tectus royanus*, *Teretianax suteri*; and the micromolluscs columbellid sp. 1, eumelid sp. 1, muricid sp. 1, rissoid sp. 4, and triphorid sp. 1.

DISCUSSION

Diversity and distribution

Collection of marine invertebrate samples using SCUBA proved challenging. In particular, dive intervals were often restrictive given safe diving limits in such a remote area. The steeply sloping terrain that was often encountered resulted in many dives reaching the 30 metre maximum allowable depth under protocols adopted and, consequently, short dive periods. This limitation also led to only small areas being explored and sampled. The exposed nature of many sites made collection difficult, particularly at shallow depths due to wave surge. Additionally, samples were confined in size to what each diver was physically capable of bringing to the surface.

There was a low diversity of physical habitat types at intertidal and subtidal depths encountered around the islands. The underwater habitat at many sites was often barren rock, possibly due to the recent geological

history of the area, its isolated nature, and physical exposure to the open ocean, with such factors as strong winds, wave action and currents regularly having a scouring effect. In addition, the grazing activity of echinoid echinoderms that were prevalent in some areas undoubtedly plays a significant role in producing barren areas and influencing community composition (Gardner, 2010). Where encrusting growth that would be expected to harbour invertebrates was present, it was often extremely hard to remove as a sample. Limited sampling of some encrusting taxa such as Bryozoa and Tunicata was undertaken as colonies encountered were small and greater attention was given to substrates that were expected to harbour additional fauna of the groups that were primarily targeted (Crustacea, Mollusca and Polychaeta). Algae usually occurred in small patches rather than large growths and, therefore, were also again difficult to sample as substrate for associated invertebrates. Significantly, stands of *Sargassum* kelp from the lowermost intertidal to 5 m depth around Raoul Island reported by Oliver (1915) were not observed in the areas sampled during the 2011 expedition. However, community structure has been reported to be variable probably due to small areas sampled and natural heterogeneity of sites selected in different studies (Gardner, 2010), therefore, the observations made here may not be reflected by a broader examination than was possible in the scope of this project.

In view of these limitations, and the relatively small amount of resources allocated to marine invertebrate collection and processing (predominantly only two people in 15 days), the detection of approximately 20 undescribed species, 44 species distribution records newly recorded for the New Zealand fauna and an additional 27 species distribution records newly recorded for the Kermadec Islands is significant. These discoveries reinforce how poorly this area is known, particularly when it is noted that these results only take into account material fully identified to date and do not include those for decapod Crustacea. Furthermore, there are numerous additional new distribution records of material at higher classification levels that can be gathered from a comparison of Table 1 to the information provided by Duffy & Ahyong (2015). For example, the list of Duffy & Ahyong (2015) includes no harpacticoid Copepoda whereas in the material reported here (Table 1) there are 10 genera in six families recorded but only three of these taxa are further identified to species and counted here among the number of new records for the Kermadec Islands.

The highest diversity of taxa was found at Raoul and satellite islands. While it would be expected that this island group may indeed have the highest faunal variety, owing to the greater length of coastline, more extensive area of adjacent shallow seafloor and potential for niches to occupy, the results reported are considered to be largely a reflection of the collection effort. This effort was dictated by the time spent in the vicinity of Raoul Island, prevailing conditions and the nature of the underwater topography, which made this site more suitable for collecting than the southern, more exposed islands. For example, micromolluscs were primarily

collected at these northern islands, undoubtedly because more airlift samples were obtained there. Given the limited amount of diving (two occasions) undertaken at L'Esperance Rock it is surprising that 86 taxa are recorded from there. This number is of a similar order to that recorded for Macauley Island (105), with fewer taxa collected at Curtis/Cheeseman islands (71). This comparative diversity at L'Esperance Rock occurred despite a greater collection effort in terms of the number of dives, other sampling undertaken, and greater area covered at both Macauley Island and Curtis/Cheeseman islands (Trnski & de Lange, 2015).

Reports concerned with the Kermadec Islands have emphasised the considerable biogeographic and ecological significance of the connectivity of the marine fauna due to the islands' physical isolation, geological setting, range of latitudes encompassed and location between temperate New Zealand coasts and the tropical islands of Tonga (Brook, 1998; Brook, 1999; Gardner, 2010; Trnski *et al.*, 2010). An important influence is the eastward-flowing Tasman Front forming the southern leg of the counter clockwise oceanic circulation of the South Pacific Gyre that flows most strongly just north of 30°S with an average latitude position of 32°S (Trnski *et al.*, 2010; Willan & Perkins, 2011). This circulation pattern is also driven by the southward flowing western boundary current, the East Australian Current. This current carries long-lived dispersive stages of many taxa as it sweeps down the eastern Australian coast, turns east and continues north towards Polynesia, passing the Kermadec Islands on the way. Although variable in strength, every summer, and particularly during hot summers, the East Australian Current also approaches the North Island of New Zealand more closely (Trnski *et al.*, 2010; Willan & Perkins, 2011). Whether the fauna it carries survives and becomes established depends on a number of factors, but clearly the warmer waters of the Kermadec Islands would provide more favourable conditions for tropical and subtropical species than would be encountered throughout much of New Zealand.

Previous studies show that for the marine fauna of the Kermadec Islands group, overall, a tropical/subtropical influence predominates, with many taxa occurring widely throughout the Indo-west Pacific, but that taxa with narrow ranges also occur. Relatively well-studied groups have been generally described as being low in diversity in comparison to other areas. The fish fauna fits this pattern but also has a significant temperate component; many of the fish species have wide geographic distributions but there is also a notable component of narrow range and endemic species (Francis & Cole, 2010; Trnski *et al.*, 2010). Similarly, although there is a mixture of reef-building tropical and subtropical coral species present there is no reef formation. Species diversity is low and shows affinities with subtropical southwest Pacific islands rather than with the New Zealand fauna (Brook, 1999; Gardner, 2010). The molluscan fauna is also considered depauperate at the species and genus level, and dominated by tropical central Pacific Ocean species with endemics accounting for 19% of the species (Brook, 1998; Gardner, 2010).

The marine invertebrates collected during the Kermadec Biodiscovery Expedition 2011 reinforce this pattern with widespread Indo-Pacific and even cosmopolitan species present but species with connectivity to tropical and subtropical Australia and the broader southwest Pacific noticeable, particularly among the Cnidaria, Crustacea, Echinodermata, Mollusca, Polychaeta and Pycnogonida reported here. A connection to the southern fauna of New Zealand and further afield is also apparent. For example the pycnogonid *Anoplodactylus australis* otherwise has an Antarctic and subantarctic circumpolar distribution (Table 1).

Of the approximately 20 undescribed species recognised from these collections, not including the decapod crustaceans noted by Ahyong (2015), most are not known to occur outside of the Kermadec Islands, again suggesting an element of endemism.

Particularly significant among the new species recognised is the sponge *Suberea* n. sp., which represents only the second published record of the Order Verongida in New Zealand waters (Kelly *et al.*, 2015) and the anemone *Phlyctenanthus* n. sp., the first record of the genus from New Zealand waters (*vide* Cairns *et al.*, 2009). Both of these macroinvertebrate taxa were encountered on several occasions in different sites across the full range of latitudes sampled, and are therefore considered relatively common. That they have been previously unreported but were readily collected by divers targeting other organisms demonstrates that further sampling aimed at a wider array of taxa will undoubtedly lead to additional discoveries. A similar example is the new species of *Octopus* recorded (see Reid & Wilson, 2015). That such a large and conspicuous species has been unrecorded until now is a further indication that invertebrates have not received the attention that is required to properly document them.

Of all the marine invertebrates, the molluscs are the most diverse and were comprehensively studied prior to this expedition. To date, approximately 440 mollusc species have been reported as occurring among the Kermadec Islands based on previous work and data obtained from museum collections (Duffy & Ahyong, 2015). Almost a century ago, Oliver (1915) published a comprehensive account of the molluscan fauna of the Kermadec Islands. Brook (1998) provided an update of this work by incorporating new records from dredge, SCUBA and fossil collections, together with subsequently published records and taxonomic revisions. This latter work was more restricted in its scope than that of Oliver (1915) and focussed on the benthic coastal fauna of Raoul and satellite islands (Napier, Nugent, Meyer, Dayrell and Chanter), but gives a detailed historical account of previous work, provides references to published descriptions of the biogeographic relationships of the Kermadec group coastal molluscan fauna, and gives information on the geology, hydrology and physical habitats that predominate intertidally and subtidally. Brook (1998) excluded information regarding the coastal fauna of the southern islands (Macauley, Curtis, Cheeseman and

L'Esperance) because in contrast it was (and to some extent still is) poorly known. Part of the reason for this lack of information is the comparative difficulty sampling at these southern sites, which can only be accessed during favourable weather and sea conditions.

Fifty seven species of molluscs collected during this expedition have been formally identified to date. However, this number will increase considerably when the micromolluscs are fully sorted and identified. Many of the gastropod micromolluscs have only been sorted to morphospecies and sorting of these bivalves is incomplete. It is hoped that this paper will inform the scientific community that new Kermadec Islands material (some of which was preserved in 95% ethanol to facilitate DNA extraction) is available and provide a launching pad for future study.

Future possibilities

With full identifications still to be made for many of the invertebrate samples obtained there will undoubtedly be additional discoveries resulting from this expedition. However, much remains to be done to gain a better understanding of the invertebrate fauna of the Kermadec Islands and further expeditions focussing on this aspect of biodiversity would be of great value. These expeditions should include members with expertise covering a broad range of invertebrate groups to ensure the successful recording of additional species. Mapping, photography and video of the underwater terrain would help in planning sampling strategies for these expeditions. Use of underwater diver operated vehicles (e.g. scooters) and gas mixtures or rebreathers, to allow extended times for dive operations, are also suggested for consideration to aid future marine invertebrate documentation.

CONCLUSION

Most of the Kermadec island chain was made a nature reserve in 1934 and the marine reserve was declared in 1990. This status, as one of the highest levels of protection under New Zealand law, recognises the special and fragile nature of the islands' ecosystems, and native plants and animals. Marine biodiversity is one of the characteristics leading to this status. The marine invertebrate fauna, particularly that of shallow subtidal depths, is a significant component of this feature, yet remains poorly known. While this expedition has made a contribution to addressing knowledge gaps in this subject, the scale of the task requires greater resources than have been available to date. We have barely begun to explore the true diversity of marine invertebrates found among the islands. Without an additional increase in this knowledge it will be difficult to effectively conserve and manage the area in the face of increasing environmental threats such as global warming and ocean acidification. Further action to better document the marine invertebrates of the area is justified and required. It is hoped the information provided here will aid future taxonomic and field efforts in this endeavour.

Table 1. Taxon list.

Distributions indicated are only included for taxa that could be recognised as known species or a species unit distinct from known species. Where taxa have not yet been sorted beyond family, just the family names are shown. Taxa are listed alphabetically by Phylum and then alphabetically within each decreasing level of classification. Levels of classification are primarily limited to Phylum, Class, Order, Family, Genus and Species. 'K2011' numbers refer to sampling sites, see Trnski & de Lange (2015). The following conventions are used in the column headed "Indication of previously known records from New Zealand": ! = new distribution record for New Zealand; * = new distribution record for the Kermadec Islands (i.e. previously known from New Zealand but not the Kermadec Islands); blank = previously known from the Kermadec Islands and other areas of New Zealand.

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Phylum: ANNELIDA						
Class: OLIGOCHAETA	+	+				
Class: POLYCHAETA						
Order: AMPHINOMIDA						
Family: AMPHINOMIDAE	+					
<i>Amphinome jukesi?</i> Baird, 1868			+			
<i>Eurythoe cf. parvecarunculata</i> Horst, 1912	+					
Order: EUNICIDA						
Family: DORVILLEIDAE						
<i>Schistomeringos</i> sp.	+					
Family: EUNICIDAE						
<i>Eunice</i> sp.	+					
Family: OENONIDAE						
<i>Arabella debilis maurica?</i> (Augener, 1924)	+					
Family: ONUPHIDAE						
<i>Kimbergonuphis</i> sp.	+					
<i>Nothria</i> sp.	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: PHYLLODOCIDA						
Family: CHRYSOPETALIDAE						
<i>Arichthon hannelorae</i> Watson Russell, 1998	+				!	Indo-Pacific (C. Watson, <i>pers. comm.</i>).
<i>Chrysopetalum</i> cf. n. sp. 5	+	+		+	!	East Australia including Lord Howe and Norfolk Is (C. Watson, <i>pers. comm.</i>).
<i>Paleanotus</i> n. sp. 8			+		!	Tropical and subtropical Australia (C. Watson, <i>pers. comm.</i>).
<i>Paleanotus</i> n. sp. 12	+				!	Known only from the Kermadec Is (C. Watson, <i>pers. comm.</i>).
Family: GLYCERIDAE						
<i>Glycera</i> spp.	+		+			
Family: HESIONIDAE						
<i>Gypsis</i> sp.	+					
<i>Psamathe</i> ? sp.	+					
Family: NEREIDIDAE						
<i>Nereis</i> sp.		+				
<i>Nereis parabifida</i> ? Hutchings & Turvey, 1982	+		+			
<i>Nereis</i> ? sp.		+	+			
<i>Perinereis amblyodonta</i> (Schmarda, 1861)	+				*	Australia, including New South Wales, Queensland, South Australia, Tasmania, Western Australia; North and South Is of New Zealand (ABRS, 2012).
<i>Perinereis</i> sp.			+			
<i>Platynereis antipoda</i> ? Hartman, 1954	+					
<i>Pseudonereis anomala</i> Gravier, 1900	+				!	Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009). European waters, Madagascar, Mediterranean Sea, Red Sea (WoRMS, 2012), also Australia (New South Wales, South Australia, Western Australia), Persian Gulf, Oman Sea (ABRS, 2012).
Family: PHYLLODOCIDAE						
	+		+			

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: PISIONIDAE						
<i>Pisone</i> sp.	+					
<i>Pisionidens</i> sp.	+				!	
Family: POLYNOIDAE						
<i>Benhamisetosus australiensis</i> (Benham, 1915)	+				*	Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009) or Duffy & Ahyong (2015) but has been recorded from the Zealand Exclusive Economic Zone (WoRMS, 2012) also Australia (New South Wales, South Australia).
<i>Lepidonotus</i> sp.	+	+	+			
<i>Thornora jukesii</i> Baird, 1865	+				!	Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009). New Caledonia, Australia, Malay Archipelago, Red Sea and Indian Ocean (WoRMS, 2012) New South Wales, Western Australia, Red Sea, Indo-Pacific.
Family: SIGALLONIDAE						
<i>Neopsammolyce?</i> sp.	+					
Family: SPHAERODORIDAE						
Family: SYLLIDAE						
<i>Alcyonosyllis</i> sp.	+					
<i>Brania</i> cf. <i>kergeuelensis</i> (McIntosh, 1885)	+					
<i>Euryssyllis tuberculata</i> Ehlers, 1864	+				!	European waters (WoRMS, 2012). New South Wales, Western Australia, Mediterranean Sea, Red Sea, NE Atlantic (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Exogone (Exogone) ingradae</i> San Martin, 2005	+	+			!	Australia (ABRS, 2012) and original description. Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Exogone (Sylline) fustifera</i> Haswell, 1920	+				!	Australia (New South Wales, Queensland, South Australia, Western Australia) (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Haplosyllis uncinigera</i> (Grube, 1878)	+				!	Western Australia, Philippines, South China Sea (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Myrianida australiensis</i> (Hartmann-Schröder, 1982)	+		+		!	East Indian Ocean, South Pacific. West and east Australia, French Polynesia (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Nudisyllis cf. timiheka</i> Knox & Cameron, 1970		+				
<i>Odontosyllis marombibooral</i> San Martin & Hutchings, 2006	+				!	Western Australia (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Odontosyllis polycera</i> (Schmarda, 1861)	+					Madagascar, Mozambique, New Zealand (ABRS, 2012; WoRMS, 2012).
<i>Opisthosyllis brunnea</i> (Langerhans, 1879)	+				!	Widespread including Australia, Caribbean Sea, Europe, Panama, Mozambique, South Africa (ABRS, 2012; WoRMS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Opisthosyllis cf. brunnea</i> (Langerhans, 1879)	+				!	Australia (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Prophaerosyllis magnoculata</i> (Hartmann-Schröder, 1986)	+				!	Australia (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Salvatoria quadrioculata</i> (Augener, 1913)	+	+			!	South Africa, Angola and Mozambique, Red Sea, Australia (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Sphaerosyllis capensis</i> Day, 1953	+					
<i>Sphaerosyllis hirsuta</i> Ehlers, 1897	+				*	Pacific coasts of South America, New Zealand, Japan and Kurile Is (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Syllis broomensis</i> (Hartmann-Schröder, 1979)	+				!	Australia (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Syllis cf. filidentata</i> (Hartmann-Schröder, 1962)	+					
<i>Syllis cf. mexicana</i> (Rioja, 1960)	+					
<i>Syllis setoensis</i> Imajima, 1966	+				!	Japan (Read & Fauchald, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
<i>Trypanosyllis aeolis</i> Langerhans, 1879	+				!	North Eastern Atlantic (Madeira, Canary Is), Mediterranean, Australia (New South Wales) (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Trypanosyllis zebra</i> (Grube, 1860)	+			+	!	Cosmopolitan in temperate and tropical seas, Australia. (ABRS, 2012). Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009).
Order: SABELLIDA						
Family: SABELLIDAE						
<i>Amphicorina cf. cincta</i> (Hartmann-Schröder, 1986)	+		+			
<i>Amphicorina cf. brevicollaris</i> (Rouse, 1990)		+				
<i>Amphiglena</i> sp.	+					
<i>Branchiomma</i> sp.	+					
<i>Parasabella aberrans</i> (Augener, 1926)	+				*	Not listed in Glasby & Read (2009) or Glasby <i>et al.</i> (2009) but Tovar-Hernández & Harris (2010) record the type locality as New Zealand.
Family: SERPULIDAE						
<i>Salmacina</i> sp.	+					
<i>Serpula cf. japonica</i> Imajima, 1979		+				
<i>Serpula</i> sp.	+					
<i>Spiraserpula?</i> sp.				+		
<i>Spirobranchus</i> sp.	+		+			
<i>Spirobranchus polytremus</i> (Philippi, 1844)	+	+	+	+	*	Listed in Glasby <i>et al.</i> (2009) as an adventive species. Distribution recorded by ten Hove & Kupriyanova (2009) as Mediterranean, Atlantic; records from Indo-West Pacific probably complex of species by themselves.
<i>Spirobranchus cf. polytremus</i> (Philippi, 1844)	+					
Order: SCOLECIDA						
Family: CAPITELLIDAE						
<i>Scyphoproctus?</i> sp.	+					
Family: MALDANIDAE						

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: OPHELIIDAE						
<i>Polyphthaimus</i> sp.	+	+			!	
Family: ORBINIIDAE						
<i>Protoarciella</i> sp.	+				!	
Family: SCALIBREGMATIDAE						
<i>Hyboscolex</i> sp.	+					
Order: SPIONIDA						
Family: CHAETOPTERIDAE		+				
<i>Mesochaetopterus</i> sp.	+					
Family: SPIONIDAE						
<i>Dispio</i> sp.	+	+			!	
<i>Microspio</i> sp.	+					
<i>Microspio?</i> sp.	+					
<i>Prionospio</i> sp.	+					
<i>Scolecopsis</i> sp.	+					
Order: TERESELLIDA						
Family: TERESELLIDAE (juvenile or damaged)	+	+				
<i>Eupolyommia</i> sp.	+					
<i>Lotmia</i> sp.	+		+		!	
Order: INCERTAE SEDIS						
Family: POLYGORDIIDAE	+		+		!	
Family: MYZOSTOMIDAE	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Phylum: ARTHROPODA						
Subphylum: CHELICERATA						
Class: PYCNOGONIDA						
Family: ACHELIIDAE						
<i>Achelia assimilis</i> (Haswell, 1885)	+	+	+	*	*	Australia, Campbell Plateau, New Zealand Exclusive Economic Zone, South America, West Pacific, Western South Pacific (WoRMS, 2012).
Family: AMMOTHEIDAE						
<i>Ammothea acheliata</i> Child, 1998	+				!	Previously known only from type locality on the Norfolk Ridge (ABRS, 2012).
Family: ANOPODACTYLIDAE						
<i>Anoplodactylus australis</i> (Hodgson, 1914)	+		+		!	Circumpolar (WoRMS, 2012). Possibly this is the most northern record for the species (C. Arango, pers. comm.).
<i>Anoplodactylus</i> cf. <i>australis</i> (Hodgson, 1914) (material has a colour difference to the described species)	+					
<i>Anoplodactylus erectus</i> Cole, 1904		+	+		!	Widely distributed in the Pacific Ocean. These records from the Kermadec Is are the most southern known for the species (C. Arango, pers. comm.).
Family: AUSTRODECIDAE						
<i>Austrodecus gordonae</i> Stock, 1954	+		+		*	Reported in Child (1998) and WoRMS (2012) from Three Kings Is, New Zealand, but not listed in Sirvid <i>et al.</i> (2010).
Family: CALLIPALLENIDAE						
<i>Chelipallene coralliphila</i> Mueller, 1992	+				!	Malaysia (C. Arango, pers. comm.).
Family: TANYSTYLIDAE						
<i>Tanystylum neorhettum</i> Marcus, 1940	+					Campbell Plateau, Kerguelen Is, New Zealand Exclusive Economic Zone, Scotia Sea, South America, Southern Ocean, Tristan da Cunha (WoRMS, 2012).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Tanystylum nestotes</i> Child, 1970	+		+		!	Moorea and other Indo-West Pacific localities (C. Arango, pers. comm.).
<i>Tanystylum rehderi</i> Child, 1970	+				!	Moorea and other Indo-West Pacific localities (C. Arango, pers. comm.).
Subphylum: CRUSTACEA						
Class: MALACOSTRACA						
Order: AMPHIPODA	+		+	+		
Suborder: GAMMARIDEA						
Family: AMPELISCIDAE				+		
Family: AMPHILOCHIDAE	+	+	+	+		
Family: AMPITHOIDAE	+		+			
<i>Plumithoe quadrimana</i> (Haswell, 1879)	+				!	Eastern Australia (WoRMS, 2012).
Ampithoidae?			+			
Family: AORIDAE	+	+	+	+		
<i>Aora typica</i> Krøyer, 1845						Madagascar, eastern Australia, New Zealand south to the Snares, Tristan de Cunha, Chile (ABRS, 2012).
Family: CAPRELLIDAE						
<i>Caprella equitibra</i> Say, 1818	+				*	Temperate, cosmopolitan (ABRS, 2012).
<i>Caprellina</i> sp.		+				
<i>Pseudaeiginella</i> cf. <i>polynesica</i> Müller, 1990	+		+	+		
Family: CEINIDAE	+					
<i>Ceina egregia</i> (Chilton, 1883)	+				*	New Zealand Exclusive Economic Zone (WoRMS, 2012).
Family: COLOMASTIGIDAE						
<i>Colomastix kapiolani</i> Barnard, 1970	+				!	Hawaii (ITIS, 2014).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: DEXAMINIDAE	+	+	+	+		
Family: EUSIRIDAE?	+					
Family: HYALIDAE	+	+	+	+		
Hyalidae?						
Family: ISCHYROCERIDAE	+		+			
Family: LEUCOTHOIDAE	+	+				
Family: LILJEBORGIIDAE	+					
Family: LYSIANASSIDAE	+		+			
<i>Parawaldeckia</i> sp.	+					
<i>Pseudambasia</i> sp.	+					
Family: MAERIDAE (as Melitidae in Webber <i>et al.</i> (2010))	+	+	+	+		
<i>Elasmopus</i> sp.	+	+				
<i>Mallacoota capricornia</i> Lowry & Hughes, 2009	+				!	Norfolk I., New Caledonia, Fiji, Australia, Cocos (Keeling) Is. (Bopiah & Hughes, 2013). First report from Kermadec Is and New Zealand by Bopiah & Hughes (2013) based on material recorded here.
<i>Mallacoota chiltoni</i> Kilgallen & Ahyong, 2011	+	+		+	*	New Zealand (Chatham Is and South I.) (Bopiah & Hughes, 2013).
<i>Mallacoota sirius</i> Hughes, 2011	+			+	!	Norfolk I. (Bopiah & Hughes, 2013). First report from Kermadec Is and New Zealand by Bopiah & Hughes (2013) based on material recorded here.
<i>Quadrinaera</i> sp.	+				!	
Family: MEGALUROPIDAE	+	+			!	
Megaluropidae?	+					
Family: MELITIDAE			+			

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: PHLIANTIDAE						
<i>Iphinotus typicus</i>	+				*	New Zealand endemic (Webber <i>et al.</i> , 2010).
Family: PHOTIDAE	+					
Photidae?			+			
Family: PHOXOCEPHALIDAE	+					
Family: PLEUSTIDAE	+	+	+	+	!	
Family: PODOCERIDAE	+	+	+	+		
<i>Podocerus wanganui</i> J.L. Barnard, 1972	+				*	New Zealand endemic (Webber <i>et al.</i> , 2010).
<i>Podocerus</i> sp.	+					
Family: SEBIDAE	+					
<i>Seba</i> sp.						
Family: STENOTHOIDAE	+	+	+	+		
Family: TALITRIDAE	+				!	The genus has not previously been reported from New Zealand (Webber <i>et al.</i> , 2010).
<i>Platorchestia</i> sp.						
Family: WANDINIDAE	+					
<i>Pseudocyphocaris</i> sp.	+				!	The genus has not previously been reported from New Zealand (Webber <i>et al.</i> , 2010).
Suborder: HYPERIDEA	+					
Order: CUMACEA						
Family: NANNASTACIDAE	+				!	The genus has not previously been reported from New Zealand (Webber <i>et al.</i> , 2010) and the material is likely to represent a new species (S. Gerken, <i>pers. comm.</i>).
<i>Nannastacus</i> sp.						

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: ISOPODA						
Family: AEGIDAE						
Family: ANTHURIDAE						
<i>Mesanthura</i> sp.	+				!	Not a species previously known from New Zealand or Fiji (G.C.B. Poore, pers. comm.).
Family: BOPYRIDAE						
Family: CIROLANIDAE						
<i>Eurydice subtruncata</i> ? Tattersall, 1921	+				*	New Zealand Exclusive Economic Zone (WoRMS, 2012).
Family: EXPANATHURIDAE						
<i>Expanathura ardea</i> (Poore & Kensley, 1981)	+				!	Abrothos Archipelago, south western Australia; Great Barrier Reef, eastern Australia; New Caledonia (ABRS, 2012; WoRMS, 2012). New record for New Zealand based on a check of Webber <i>et al.</i> (2010).
<i>Expanathura collaris</i> (Kensley, 1979)	+		+		!	Widespread tropical southwest Pacific including Australia, Cook Is., Fiji and Papua New Guinea (ABRS, 2012). New record for New Zealand based on a check of Webber <i>et al.</i> (2010).
Family: JANIRIDAE						
<i>Ianitropsis</i> sp.				+		
<i>Ianitropsis</i> sp. 1	+		+			
<i>Ianitropsis</i> sp. 3	+			+		
<i>Janaira</i> sp.	+				!	The genus has not been recorded previously from New Zealand (Webber <i>et al.</i> , 2010).
cf. <i>Rostrobagatus</i> sp. 2	+					
Family: JOEROPSIDAE						
<i>Joeropsis</i> sp. 1	+			+		
<i>Joeropsis</i> sp. 2	+			+		
<i>Joeropsis</i> sp. 3	+			+		

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Joeropsis</i> sp. 4	+					
Family: PARAMUNNIDAE						
<i>Paramunna</i> sp.	+					
Family: PARANTHURIDAE						
<i>Paranthura</i> sp.	+				!	Not a species previously known from New Zealand or Fiji (G.C.B. Poore, pers. comm.).
Family: SANTIIDAE						
<i>Halacarsantia</i> sp.				+		
<i>Santia</i> sp.	+			+		
Family: SPHAEROMATIDAE						
	+	+	+	+		
Family: STENETRIIDAE						
Stenetriidae sp. 1	+					
Stenetriidae sp. 2	+					
Stenetriidae sp. 3	+					
Order: LEPTOSTRACA						
Family: NEBALIIDAE						
<i>Nebalia</i> sp.	+	+	+		!	Not <i>Nebalia longicornis</i> Thomson, 1879 the only species in the genus recorded from New Zealand (S. Ahyong, pers. comm.).
Order: TANAIACEA (see Bird, 2015).						
Family: APSEUDIDAE						
<i>Paradoxapsuedes</i> n. sp.	+	+	+	+	!	See Bird (2015).
Family: LEPTOCHELIIDAE						
<i>Leptocheilia</i> n. sp.	+	+		+	!	See Bird (2015).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: PARATANAIDAE						
<i>Aparatanais</i> n. sp.	+	+			!	See Bird (2015).
<i>Metatanais</i> n. sp.	+				!	See Bird (2015).
Family: TANAIDAE						
<i>Tanais</i> sp.	+				!	Not a species known from Australia, Indo-Pacific or New Zealand. Insufficient material (one specimen) for proper analysis (G. Bird, pers. comm.). See Bird (2015).
<i>Zeuxo</i> n. sp.	+	+	+	+	!	See Bird (2015).
Class: MAXILLOPODA						
Subclass: COPEPODA						
Order: CALANOIDA						
Family: ACARTIIDAE						
<i>Acartia negligens</i> Dana, 1849	+					Gulf of Maine, Gulf of Mexico, Kenya, New Zealand Exclusive Economic Zone, United Kingdom Exclusive Economic Zone (WoRMS, 2012).
Family: CALANIDAE						
<i>Cosmocalanus darwinii</i> (Lubbock, 1860)	+					Gulf of Mexico, Kenya, New Zealand Exclusive Economic Zone (WoRMS, 2012).
<i>Nannocalanus minor</i> (Claus, 1863)	+					European waters, Gulf of Maine, Gulf of Mexico, Kenya, New Zealand Exclusive Economic Zone, North West Atlantic (WoRMS, 2012).
Family: CLAUDOCALANIDAE						
<i>Clausocalanus</i> sp.	+					
Family: EUCHAETIDAE						
Family: LUCICUTIIDAE						
<i>Lucicutia</i> cf. <i>flavicornis</i> (Claus, 1863)	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: METRIDINIDAE						
<i>Pleuromamma piseki</i> Farran, 1929	+					European waters, Gulf of Maine, Gulf of Mexico, Kenya, New Zealand Exclusive Economic Zone, United Kingdom Exclusive Economic (WoRMS, 2012).
<i>Pleuromamma</i> sp.						
Family: PARACALANIDAE						
<i>Acrocalanus gibber?</i> Giesbrecht, 1888	+				!	The genus has not been previously recorded from New Zealand (Webber <i>et al.</i> , 2010).
<i>Mecynocera clausi</i> Thompson, 1888	+				*	European waters, FAO fishing area 67, Gulf of Maine, Gulf of Mexico, New Zealand Exclusive Economic Zone, North East Pacific, Turkish Exclusive Economic Zone (WoRMS, 2012).
Family: Unknown (juveniles)						
Order: CYCLOPOIDA						
Family: CORYCAEIDAE						
<i>Corycaeus</i> sp.						
Family: ONCAEIDAE						
<i>Oncaea</i> sp.						
Family: SAPPHIRINIDAE						
<i>Sapphirina</i> sp.						
Order: HARPACTICOIDA						
Family: LAOPHONTIDAE						
<i>Coullia</i> sp. (aff. <i>insularis</i> or <i>tongarika</i>)				+	!	The genus has not been previously recorded from New Zealand (Webber <i>et al.</i> , 2010).
<i>Laophonte</i> sp. (<i>cornuta</i> -group?)						
Laophontinae sp. 1			+			

Classification/Distribution	Raouli and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: LOURINIIDAE						
<i>Lourinia armata</i> (Claus, 1866)	+				*	Cosmopolitan from warm temperate and tropical coasts. The only species in the family but requires revision as variability has been noted but not analysed (J. Wells, pers. comm.).
Family: MIRACIIDAE						
<i>Amphiascopsis cinctus?</i> (Claus, 1866)				+		
<i>Dactylopodamphiascopsis latifolius</i> (Sars G.O., 1909)	+			+	!	Monospecific genus previously only known from the Arctic Ocean and its Atlantic approaches, and from South Korea. There is some variability in material from different geographic areas which requires further investigation to determine if it represents intra- or inter-specific variation (J. Wells, pers. comm.).
Diosaccinae sp.				+		
<i>Sarsamphiascus parvus?</i> (Sars, 1906)				+		
<i>Sarsamphiascus?</i> sp.				+		
Family: PORCELLIIDAE						
<i>Porcellidium</i> n. sp.	+				!	Material has a distinctive caudal ramus and undoubtedly represents an undescribed species (J. Wells, pers. comm.).
Family: THALESTRIDAE						
<i>Eudactylopus striatus?</i> Sewell, 1940	+				!	The genus has not been previously recorded from New Zealand (Webber et al., 2010).
<i>Phyllothalestris mysis?</i> (Claus, 1863)	+				!	The genus has not been previously recorded from New Zealand (Webber et al., 2010).
Family: TISBIDAE						
<i>Tisbe</i> sp.				+		
Order: POECILOSTOMATOIDA (Webber et al. (2010) note that some authorities place this taxon within the Order Cyclopoidea).						

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: SIPHONOSTOMATOIDA	+					
Subclass: THECOSTRACA						
Infraclass: CIRRIPIEDIA						
Order: LEPADIFORMES						
Family: LEPADIDAE						
<i>Lepas anatifera</i> Linnaeus, 1758	+		+			European waters, Gulf of Maine, Gulf of Mexico, New Zealand Exclusive Economic Zone, North Sea, North West Atlantic, Red Sea, South Africa (WoRMS, 2012).
<i>Lepas anserifera</i> Linnaeus, 1767	+		+		!	European waters, Gulf of Maine, Gulf of Mexico, North East Atlantic, North West Atlantic (WoRMS, 2012). Webber <i>et al.</i> (2010) note previous records of this species from New Zealand waters but indicate it does not seem to have become naturalised.
Family: BALANIDAE						
<i>Megabalanus linzei</i> (Foster, 1978)			+		*	Listed in Webber <i>et al.</i> (2010) as <i>M. tintinnabulum linzei</i> . Not listed in Duffy & Ahyong (2015) or WoRMS (2012) but Duffy & Ahyong (2015) list <i>M. tintinnabulum tintinnabulum</i> .
Family: TETRACLITIDAE						
<i>Tesseropora rosea</i> (Krauss, 1848)	+					Australia.
Class: OSTRACODA						
Order: MYODOCOPIDA						
Family: CYLINDROLEBERIDIDAE						
<i>Archasterope</i> aff. <i>dentata</i> Poulsen, 1965	+				!	The genus has not been previously recorded from New Zealand (Webber <i>et al.</i> , 2010).
<i>Archasterope</i> sp.		+			!	The genus has not been previously recorded from New Zealand (Webber <i>et al.</i> , 2010).
<i>Parasterope quadrata</i> ? Brady, 1880	+					
<i>Parasterope</i> sp.	+					
Family: PHILOMEDIDAE						
<i>Harbansus</i> sp.	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: POLYCOPIDAE						
<i>Polycope</i> sp.	+	+				
<i>Polycope</i> sp. 3	+					
<i>Polyopsis?</i> sp.	+					
Mydocopid?	+					
Order: PODOCOPIDA						
Family: BAIRDIIDAE						
<i>Neonesidea australis</i> (Chapman, 1914)	+				!	Australia. Not previously reported from New Zealand (Webber <i>et al.</i> , 2010).
Family: CANDONIDAE						
<i>Tasmanocypris</i> sp.	+					
<i>Tasmanocypris?</i> sp.	+					
Subphylum: HEXAPODA						
Class: INSECTA						
Order: HEMIPTERA						
Family: GERRIDAE						
<i>Halobates</i> sp.			+		*	See Chinn (2015).
Phylum: BRYOZOA						
Family: BEANIIDAE						
<i>Beania lagenula</i> Tilbrook, 2006	+				*	Tropical Pacific, including Korea, Colombia and Australia (Bryozoa.net, 2013).
<i>Beania pluripinosa</i> Uttley & Bullivant, 1972	+					New Zealand region including Chatham I., south eastern Australia (Bryozoa.net, 2013).
Family: BUGULIDAE						
<i>Bicelliarella</i> aff. <i>ciliata</i> (Linnaeus, 1758)		+			*	New generic record for Kermadec Is. (D. Gordon, pers. comm.).
<i>Brettiella oviceolata</i> Gordon, 1984		+				Previously reported from Kermadec Is. (Bryozoa.net, 2013).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: CANDIDAE						
<i>Emma watersi</i> Hastings, 1939	+					Australia (Bryozoa.net, 2013).
Family: CELLEPORIDAE						
<i>Predanophora</i> n. sp.	+				*	New generic record for Kermadec Is. (D. Gordon, pers. comm.).
Family: CRIBRILINIDAE						
<i>Puellina</i> aff. <i>vulgaris</i> Ryland & Hayward, 1992	+					
Family: CRISIIDAE						
<i>Bicrista biciliata</i> (MacGillivray, 1869)	+					Australia (Bryozoa.net, 2013).
Family: LICHENOPORIDAE						
<i>Disporella novaehollandiae</i> (d'Orbigny, 1853)	+					South eastern Australia (Bryozoa.net, 2013).
Family: ROBERTSONIDRIDAE						
<i>Robertsonidra</i> n. sp.	+				*	New generic record for Kermadec Is. (D. Gordon, pers. comm.).
Family: STEGINOPORELLIDAE						
<i>Steginoporella magnifica</i> Harmer, 1900	+					Pacific Ocean, New Zealand (Bryozoa.net, 2013).
Phylum: CNIDARIA						
Class: ANTHOZOA						
Order: ACTINARIA						
Family: ACTINIIDAE						
<i>Phlyctenanthus</i> n. sp.	+	+		+	!	
Family: HORMATHIIDAE						
<i>Calliactis</i> sp.	+				*	
Family: ISOPHELLIDAE						
<i>Epiphellia</i> sp.	+				!	

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: ALCYONACEA						
Family: ALCYONIIDAE						
<i>Cladiella</i> sp. A	+					
<i>Cladiella</i> sp. B	+					
<i>Cladiella</i> sp. C	+					
<i>Cladiella</i> sp. D	+					
Order: ANTIPATHARIA						
Family: MYRIOPATHIDAE						
<i>Cupressopathes</i> sp.		+			*	
<i>Myriopathes</i> cf. <i>lata</i> (Silberfeld, 1909)	+	+	+		*	
Order: GORGONACEA						
Family: ACANTHOGORGIIDAE						
<i>Acanthogorgia</i> sp. A	+					
Order: SCLERACTINIA						
Family: ACROPORIDAE						
<i>Montipora capricornis</i> Veron, 1985				+		Central Indo-Pacific including the New Zealand Exclusive Economic Zone (WoRMS, 2012). Further examination of additional specimens is needed to separate the material reported here from <i>M. caliculata</i> (Dana, 1846) (Z. Richards, pers. comm.) which also has a Central Indo-Pacific distribution (WoRMS, 2012).
<i>Montipora spongodes</i> Bernard, 1897		+	+			Indo-West Pacific including the Chagos Archipelago, Mascarene Basin, Mozambique, Seychelles, South Africa and the New Zealand Exclusive Economic Zone (WoRMS, 2012).
Family: DENDROPHYLLIIDAE						
<i>Balanophyllia</i> cf. <i>chnous</i> Squires, 1962	+				*	<i>Balanophyllia chnous</i> is endemic to New Zealand (Cairns et al., 2009) but has previously only been recorded from 140–549 metres depth and not from the Kermadec Is., confirmation of the identification is needed (Z. Richards, pers. comm.).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Tubastrea diaphana</i> (Dana, 1846)	+					Indo-West Pacific (WoRMS, 2012). Note alternative spelling of genus name as <i>Tubastraea</i> (Cairns <i>et al.</i> , 2009).
<i>Turbinaria frondens</i> (Dana, 1846)	+					Chagos Archipelago, East Africa, East Indian Ocean, Kenya, Mozambique, New Zealand Exclusive Economic Zone, Pacific Coast of the United States, Somalia (WoRMS, 2012).
Family: FAVIIDAE						
<i>Goniastrea favulus</i> (Dana, 1846)	+					Central Indo-Pacific (WoRMS, 2012).
<i>Montastrea curta</i> (Dana, 1946)	+					Tropical–temperate Indo-West Pacific (Australian Institute of Marine Science, 2012).
Family: MERULINIDAE						
<i>Hydophora exesa</i> (Pallas, 1766)	+					Indo-West Pacific (WoRMS, 2012). Further examination of additional specimens is needed to separate the material reported here from <i>H. pilosa</i> Veron, 1985 as reported by Brook (1999) (Z. Richards, <i>pers. comm.</i>).
Family: POCILLOPORIDAE						
<i>Pocillopora damicornis</i> (Linnaeus, 1758)	+					Indo-Pacific (WoRMS, 2012).
Family: RHIZANGIIDAE						
<i>Culicia rubeola</i> (Quoy & Gaimard, 1833)						New Zealand endemic (Cairns <i>et al.</i> , 2009). Material reported here confirms the distribution tentatively recorded by Brook (1999) but revision of the genus is needed (Z. Richards, <i>pers. comm.</i>).
Family: SIDERASTREIDAE						
<i>Coscinarea columna</i> (Dana 1846)	+	+				Indo-West Pacific (WoRMS, 2012).
Order: ZOANTHARIA (as Zoanthidea in Cairns <i>et al.</i> (2009))						
Family: SPHENOPIDAE (as Zoanthidae in Cairns <i>et al.</i> (2009))						
<i>Palythoa</i> sp.	+					Possibly the same taxon as that recorded by Stuckey (1914) as <i>Zoanthus atroviridis</i> (F. Sinniger, <i>pers. comm.</i>).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: ZOANTHIDAE						
<i>Isaurus tuberculatus</i> Gray, 1828	+	+		+		Circum-equatorial; European waters; Gulf of Mexico; Mozambique; South Africa (WoRMS, 2012). Previously recorded from the Kermadec Is. by Stuckey (1914) as <i>I. fuscus</i> Stuckey, 1914. This species is not listed by Cairns <i>et al.</i> (2009) although <i>I. sp.</i> is listed.
Class: HYDROZOA (see Watson, 2015)						
Order: LEPTOTHECATA						
Family: AGLAOPHENIIDAE						
<i>Aglaophenia laxa</i> (Allman, 1876)	+					South West Pacific Ocean (WoRMS, 2012).
<i>Gymnangium hians</i> (Busk, 1852)	+				*	Gulf of Mexico, Indo-West Pacific, New Zealand Exclusive Economic Zone, Red Sea (WoRMS, 2012).
Family: CAMPANULARIIDAE						
<i>Clytia linearis</i> (Thornely, 1890)				+	*	Brazil, European waters, Gulf of Mexico, Mediterranean Sea, New Zealand Exclusive Economic Zone, North West Atlantic, Red Sea, Ionian Sea (WoRMS, 2012).
Family: HALECHIDAE						
<i>Halecium</i> n. sp.	+				!	See Watson (2015).
<i>Halecium tenellum</i> (Hincks, 1861)				+		Azores Exclusive Economic Zone, European waters (ERMS scope), Gulf of Mexico North West Atlantic (WoRMS, 2012).
Family: HALOPTERIDIDAE						
<i>Monostachas quadridens</i> McCrady, 1859	+				!	European waters, Gulf of Mexico, North West Atlantic (WoRMS, 2012).
Family: HEBELLIDAE						
<i>Hebellopsis scandens</i> (Bale, 1888)				+	*	European waters, Gulf of Mexico, Mediterranean Sea, North West Atlantic, South Africa (WoRMS as <i>Hebella scandens</i>).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: LAFOEIDAE						
<i>Filellum serratum</i> (Clarke, 1879)				+	*	European waters, Gulf of Mexico, Indo-West Pacific, Mediterranean Sea, New Zealand Exclusive Economic Zone, North Atlantic (WoRMS, 2012).
Family: PLUMULARIIDAE						
<i>Plumularia setacea</i> (Linnaeus, 1758)	+					Azores Exclusive Economic Zone, European waters, Gulf of Mexico, New Zealand Exclusive Economic Zone, North West Atlantic, Red Sea, South Africa, United Kingdom Exclusive Economic Zone (WoRMS, 2012).
Family: SERTULARIIDAE						
<i>Dynamena quadridentata</i> (Ellis & Solander, 1786)				+	!	Circum-global (WoRMS, 2012). Not listed in Cairns <i>et al.</i> (2009).
<i>Sertularella diaphana</i> (Allman, 1885)	+				*	Caribbean Sea, Gulf of Mexico, New Zealand Exclusive Economic Zone, Pacific Ocean (WoRMS, 2012).
<i>Sertularella integra</i> (Allman, 1876)	+				*	New Zealand Exclusive Economic Zone, South West Pacific Ocean.
<i>Symplectosephus</i> sp.				+		
Phylum: ECHINODERMATA						
Class: ASTEROIDEA						
Order: FORCIPULATIDA						
Family: ASTERIIDAE						
<i>Astrostele rodolphi</i> (Perrier, 1875)	+			+		Southwest Pacific (ABRS, 2012).
Order: PAXILLOSIDA						
Family: ASTROPECTINIDAE						
<i>Astropecten polyacanthus</i> Müller & Troschel, 1842	+					Indo-Pacific (ABRS, 2012).
Order: VALVATIDA						
Family: ACANTHASTERIDAE						
<i>Acanthaster planci</i> (Linnaeus, 1758)	+					Indo-Pacific (ABRS, 2012).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: ASTERINIDAE						
<i>Asterina/Patriella</i> sp.	+					
<i>Patriella oliveri</i> (Benham, 1911)	+					Southwest Pacific (ABRS, 2012).
<i>Patriella?</i> sp.	+					
Family: ASTEROPSEIDAE						
<i>Petricia imperialis</i> (Farquhar, 1897)	+	+	+			Endemic to Kermadec Is (WoRMS, 2012).
Family: OPHIDIASTERIDAE						
<i>Ophidiaster kermadecensis</i> Benham, 1911	+			+		New Zealand Exclusive Economic Zone (WoRMS, 2012).
Family: PORANIIDAE						
<i>Marginaster</i> sp.	+					
Class: CRINOIDEA						
Order: COMATULIDA						
Family: TROPIOMETRIDAE						
<i>Tropiometra</i> cf. <i>afra</i> (Hartlaub, 1890)	+					<i>Tropiometra afra</i> has previously been reported from the Kermadec Is (Duffy & Ahyong, 2014) and has a tropical Indo-Pacific distribution including the Philippines to Fremantle Western Australia, Fish Rock eastern Australia and Lord Howe I. (WoRMS, 2012; ABRS, 2012).
Class: ECHINOIDEA						
Order: CAMARODONTA (as Echinoida in Mah <i>et al.</i> (2009))						
Family: ECHINOMETRIDAE						
<i>Echinometra mathaei</i> (Blainville, 1825)	+					Indo-Pacific (ABRS, 2012).
<i>Heliocidaris tuberculata</i> (Lamarek, 1816)	+		+	+		West Pacific (ABRS, 2012).
Family: TOXOPNEUSTIDAE						
<i>Tripneustes gratilla</i> (Linnaeus, 1758)	+					Southeastern Australia, north and west to south western Australia (ABRS, 2012).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: CIDAROIDA						
Family: CIDARIDAE						
<i>Phyllacanthus parvispinus</i> Tension Woods, 1880	+					North east to south east Australia (ABRS, 2012).
Order: DIADEMATOIDA						
Family: DIADEMATIDAE						
<i>Centrostephanus rogersii</i> (Agassiz, 1863)		+	+	+	*	Mainland New Zealand and south eastern Australia (ABRS, 2012).
<i>Diadema palmeri</i> Baker, 1967	+	+				Duffy & Ahyong (2015) record references to <i>Diadema</i> sp. from the Kermadec Is., south eastern Australia, Norfolk and Lord Howe Is., mainland New Zealand (ABRS, 2012).
Class: HOLOTHUROIDEA						
Order: APODIDA						
Family: CHIRIDOTIDAE						
<i>Chiridota kermadeca</i> O'Loughlin & Vandenspiegel, 2012	+		+		!	Known only from Kermadec Is.
Order: DENDROCHIROTIDA						
Family: CUCUMARIIDAE						
<i>Plestocolochirus ignavus</i> (Ludwig, 1874)	+				*	Southern Australia and mainland New Zealand.
<i>Pseudocnus sentus</i> O'Loughlin & Alcock, 2000	+				*	Stewart I. and Bay of Islands, New Zealand.
Class: OPHIUROIDEA						
Order: OPHIURIDA						
Family: AMPHIURIDAE						
<i>Amphipholis</i> n. sp. 1	+					
<i>Amphipholis</i> n. sp. 2	+	+	+			
Family: OPHIACTIDAE						
<i>Ophiactis macrolepidota</i> Marktanner-Turneretscher, 1887	+				!	Australia; Elizabeth and Middleton Reefs, Tasman Sea; western Indian Ocean, West Pacific Ocean (ABRS, 2012). Not listed in Duffy & Ahyong (2015) or Mah <i>et al.</i> (2009).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Ophiactis resiliens</i> Lyman, 1879	+				*	Australia; Elizabeth and Middleton Reefs to Lord Howe I., Tasman Sea; mainland New Zealand (ABRS, 2012). Not listed in Duffy & Ahyong (2015).
Family: OPHIOCOMIDAE						
<i>Clarkcoma</i> cf. <i>ballonsi</i> (Farquhar, 1908)	+					
Family: OPHIOMYXIDAE						
<i>Astrogymnates thomasi</i> Baker, Clark & McKnight, 2001		+				Kermadec endemic.
Family: OPHIONEREIDIDAE						
<i>Ophioneis</i> cf. <i>schayeri</i> (Müller & Troschel, 1844)	+					
Family: OPHIOTRICHIDAE						
<i>Macrophiothrix oliveri</i> (Benham, 1911)	+	+				Norfolk I. (T. O'Hara pers. comm.), appears on Stöhr <i>et al.</i> (2010) as <i>Ophiolithrix oliveri</i> Benham, 1911 with distribution of New Zealand Exclusive Economic Zone.
<i>Ophiolithrix danae</i> Verrill, 1869	+				!	Indo-West to central Pacific (ABRS, 2012). Not listed in Duffy & Ahyong (2015) or Mah <i>et al.</i> (2009).
Phylum: FORAMINIFERA						
Class: POLYTHALAMEA						
Order: ROTALIIDA						
Family: AMPHISTEGINIDAE						
<i>Amphistegina papillosa</i> Said, 1949			+		*	Cavalli Is, New Zealand; Norfolk I.
Family: CIBICIDIDAE						
<i>Cibicides corticatus</i> Earland, 1934	+	+				New Zealand.
Family: EPONIDIDAE						
<i>Cribræponides cribræpandus</i> (Fichtell & Moll, 1798)	+					New Zealand.

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Neoponides schreibersii</i> (d'Orbigny, 1846)	+					New Zealand.
<i>Poroponides lateralis</i> (Terquem, 1878)	+	+				New Zealand.
Order: LAGENIDA						
Family: VAGINULINIDAE						
<i>Lenticulina australis</i> Parr, 1950	+					New Zealand.
Phylum: MOLLUSCA						
Class: BIVALVIA						
Order: ARCOIDA						
Family: ARCIDAE	+					
Family: PHILOBRYIDAE						
Philobryidae sp. 1	+			+		
Philobryidae sp. 2	+					
Philobryidae sp. 3	+					
Philobryidae sp. 4	+					
Philobryidae sp. 5	+					
Philobryidae sp. 6	+					
Philobryidae sp. 7	+					
Order: CARDITOIDA						
Family: CONDYLOCARDIIDAE						
Condylocardiidae sp. 1	+					
Order: LUCINOIDA						
Family: LUCINIDAE	+					
Order: MYTILOIDA						
Family: MYTILIDAE	+	+				
<i>Modiolus auriculatus</i> (Krauss, 1848)	+					Tropical Pacific including, Australia, Lord Howe I., Norfolk I. (Brook, 1998).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: NUCULIDA						
Family: NUCULIDAE	+					
Order: PECTINOIDA						
Family: ANOMIIDAE						
Anomiidae sp. 1	+	+				
Anomiidae sp. 2	+	+				
Family: PECTINIDAE	+	+				
Family: SPONDYLIDAE	+					
<i>Spondylus raoulensis</i> Oliver, 1915	+	+				Kermadec endemic (Brook, 1998).
Order: PTERIOIDA						
Family: PTERIIDAE						
<i>Pinctada maculata</i> (Gould, 1850)	+					Tropical Pacific, including Australia, Lord Howe I., Norfolk I., Pitcairn Is. (Brook, 1998).
Order: VENEROIDA						
Family: CHAMIDAE						
<i>Chama plinthota?</i> Lamarck, 1819		+	+			Southwest Pacific, Australia, New Zealand (Brook, 1998); Red Sea (ABRS, 2012).
Families: LASAEIDAE & NEOLEPTONIDAE	+	+		+		
Family: MACTRIDAE						
<i>Neolepton antipodum</i> (Filhol, 1880)	+					Southwest Pacific, Australia, New Zealand, Norfolk I. (Brook, 1998).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: SEMELIDAE						
<i>Ervilta</i> sp.	+	+		+		
Family: TELLINIDAE						
Family: VENERIDAE						
<i>Globivenus toreuma</i> (Gould, 1850)	+					Tropical Pacific, Australia, Elizabeth & Middleton Reefs, Lord Howe I., Norfolk I. (Brook, 1998); East India, Hawaiian Is, Madagascar, Maldives, Moluccas, Mozambique, Red Sea, Seychelles, South Africa (ABRS, 2012).
Class: CEPHALOPODA						
Order: OCTOPODA						
Family: OCTOPODIDAE (see Reid & Wilson, 2015).						
<i>Callistoctopus kermadecensis</i> (Berry, 1914)	+					Kermadec endemic.
<i>Octopus oliveri</i> (Berry, 1914)	+					Japan (WoRMs), Hawaii (Yitalo <i>et al.</i> , 2014).
<i>Octopus</i> n. sp.	+				!	See Reid & Wilson (2015).
<i>Octopus</i> sp. (juvenile)			+			
Class: GASTROPODA						
Order: ANASPIDEA						
Family: APLYSIIDAE						
<i>Aplysia extraordinaria</i> (Allen, 1932)	+					Tropical Pacific.
<i>Dalabrifera brazieri</i> G.B Sowerby II, 1870	+		+			Australia, Elizabeth & Middleton Reefs, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998).
Order: CEPHALASPIDEA						
Family: BULLIDAE						
<i>Bulla quoyii</i> Gray, 1843	+					Kermadec record cited in Malaquais & Reid (2008); Australia (ABRS).
<i>Bulla vernicosa</i> Gould, 1859	+					Tropical Pacific Ocean north of 24° S, southwest Pacific including Australia, Elizabeth & Middleton Reefs, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998).
Bullidae sp. 1	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: RETUSIDAE						
Retusidae sp. 1	+					
Order: CYCLONERITIMORPHA						
Family: NERITIDAE						
<i>Nerita (Lisanerita) melanotragus</i> E.A. Smith, 1884	+					Southwest Pacific, Australia, Elizabeth & Middleton Reefs, Lord Howe I., Norfolk I., New Zealand (as <i>N. atramentosa</i> Brook, 1998).
Order: LITTORINIMORPHA						
Family: ANABATHRIDAE						
<i>Amphithalamus</i> sp.	+					
<i>Scrobs</i> sp.	+			+		Brook (1998) cites <i>Anabathron (Scrobs)</i> sp. aff. <i>ovattus</i> (Powell, 1927).
Family: ASSIMINEIDAE						
Assimineidae sp. 1				+		
Family: ATLANTIDAE						
Atlantidae sp. 1	+					
Family: BARLEEIIDAE						
<i>Fictonoba</i> sp.	+					
Family: BURSIDAE						
<i>Bursa verrucosa</i> (G.B. Sowerby I, 1825)	+	+	+			Australia, Elizabeth & Middleton Reefs, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998).
<i>Tutufo (Tutufo) bufo</i> (Röding, 1798)	+	+				Southwest Pacific including Australia, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998); Indian Ocean, Madagascar, Red Sea (ABRS, 2012).
Family: CINGULOPSIDAE						
Cingulopsidae sp. 1	+			+		

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: CYPRAEIDAE						
<i>Erosaria cernica</i> (Sowerby, 1870)	+					Tropical Pacific, Australia, Easter I., Lord Howe I., New Zealand, Norfolk I. (Brook, 1998); tropical and temperate Indo-West Pacific (ABRS, 2012).
Family: EATONIELLIDAE						
Eatonellidae sp. 1	+			+		
Family: HIPPONICIDAE						
Hipponicidae sp. 1	+			+		
Family: NATICIDAE						
<i>Polinices mammilla</i> (Linnaeus, 1758)	+				!	Easter I., Philippines, Red Sea, tropical Indo-West Pacific, Australia (Freemantle to Southern Queensland) (ABRS, 2012).
Family: RANELLIDAE						
<i>Charonia lampas</i> (Linnaeus, 1758)	+					Tropical Indo-West Pacific, Australia, New Zealand, Norfolk I. (Brook, 1998), South Africa (ABRS, 2012).
<i>Monoplex parthenopeus</i> (Salis-Marschlins, 1793)	+					Southwest Pacific including Australia, New Zealand, Norfolk I. (Brook, 1998).
Family: RASTODENTIDAE						
Rastodentidae sp. 1	+					
Family: RISSOIDAE						
Rissoidae sp. 1	+	+	+	+		
Rissoidae sp. 2	+					
Rissoidae sp. 3	+	+	+	+		
Rissoidae sp. 4	+	+				
Rissoidae sp. 5	+					
Rissoidae sp. 6	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Rissoidae sp. 7	+					
Rissoidae sp. 8	+					
Rissoidae sp. 9	+					
Rissoidae sp. 10	+					
Family: STROMBIDAE						
<i>Theristrombus thersites</i> (Swainson, 1823)	+					Southwest Pacific including Lord Howe I., Norfolk I. (Brook, 1998).
Family: TONNIDAE						
<i>Malea pomum</i> (Linnaeus, 1758)	+					Tropical Pacific, Australia, Elizabeth & Middleton Reefs, Norfolk I., Pitcairn I. (Brook, 1998), Red Sea (ABRS, 2012).
Family: TRIVIIDAE						
<i>Trivia</i> sp.	+					
<i>Proterato lachryma</i> (Sowerby, 1832)	+					Tropical Pacific, southwest Pacific, Australia (Brook, 2012).
Family: VANIKORIDAE						
Vanikoridae sp. 1	+	+				
Family: VELUTINIDAE (= LAMELLARIIDAE)						
<i>Lamellaria australis</i> (Basedow, 1905)	+	+			!	Australia (ABRS, 2012).
Velutinidae sp. 1	+					
Family: VERMETIDAE						
Vermetidae sp. 1	+					
Vermetidae sp. 2	+					
Family: VITRINELLIDAE						
Vitrinellidae sp. 1	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Order: LOTTIOIDEA						
Family: LOTTIIDAE +						
Order: NEOGASTROPODA						
Family: ANGARIIDAE						
<i>Angaria delphinus</i> (Linnaeus, 1758)	+					Australia, Norfolk I. (Brook, 1998).
Family: BUCCINIDAE						
Buccinidae sp. 1	+	+				
Buccinidae sp. 2	+	+				
Family: CLATHURELLIDAE						
Clathurellidae sp. 1	+					
<i>Etrema hedleyi</i> (Oliver, 1915)	+			+		Distribution unknown (Brook, 1998).
<i>Lienardia roseocincta</i> (Oliver, 1915)	+					Distribution unknown (Brook, 1998).
Family: COLUMBELLIDAE						
Columbellidae sp. 1	+			+		
Columbellidae sp. 2			+	+		
Family: CONIDAE						
<i>Conus catus</i> Hwass in Bruguière, 1792	+				!	Aldabra, Chagos, east Africa, French Polynesia, Hawaii, India (E), Indo-Pacific, Oman, Red Sea, Tanzania (ABRS, 2012).
<i>Conus lischkeanus</i> Weinkauff, 1875	+	+	+			Tropical Pacific, including Australia, Lord Howe I., Norfolk I., New Zealand (Brook, 1998); East Africa, Oman (ABRS, 2012).
<i>Conus lividus</i> Hwass in Bruguière, 1792	+					Tropical and temperate Pacific, including Australia, Lord Howe I., Pitcairn I. (Brook, 1998), India, Red Sea (ABRS, 2012).
<i>Conus miles</i> Linnaeus, 1758	+					Tropical Pacific, including Australia, Elizabeth & Middleton Reefs (Brook, 1998).
Family: CYSTISCIDAE						
Cystiscidae sp. 1	+					
Cystiscidae sp. 2	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Cystiscidae sp. 3	+	+				
Cystiscidae sp. 4	+			+		
Cystiscidae sp. 5	+			+		
Family: DRILLIIDAE						
<i>Iredalea subtropicalis</i> Oliver, 1915	+	+				Tropical Pacific, southwest Pacific including Elizabeth and Middleton Reefs, Lord Howe I.; southeast Pacific, Easter I. (Brook, 1998).
Family: FASCIOLARIIDAE						
Fasciolaridae sp. 1	+					
<i>Fusinus (Fusinus) undatus</i> (Gmelin, 1791)	+		+		!	Coral Sea, eastern Indian Ocean, Indo-Arabia, New Caledonia, Oceania, Philippines, Society Is (ABRS, 2012).
Family MANGELIIDAE						
<i>Macteola interrupta</i> (Reeve, 1846)	+					Tropical Pacific, southwest Pacific (Brook, 1998); Australia (ABRS, 2012).
Family: MARGINELLIDAE						
<i>Pugnus</i> sp.	+					
<i>Serrata</i> cf. <i>mustelina</i> (Angus, 1871)	+					Kermadec endemic (Brook, 1998).
Family: MURICIDAE						
<i>Coralliophila radula</i> (A. Adams, 1855)	+	+				Tropical Pacific, southwest Pacific (Brook, 1998); Red Sea (ABRS, 2012).
<i>Oppomorus noduliferus</i> (Menke, 1829)	+	+				Tropical Pacific, including Australia, Elizabeth & Middleton Reefs, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998).
Muricidae sp. 1	+		+			
Muricidae sp. 2	+					
Muricidae sp. 3	+					
Muricidae sp. 4	+					
Muricidae sp. 5	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Muricidae sp. 6	+	+				
Muricidae sp. 7	+		+			
Muricidae sp. 8	+					
Muricidae sp. 9	+					
Muricidae sp. 10				+		
Muricidae sp. 11	+					
Muricidae sp. 12	+					
Muricidae sp. 13	+					
Muricidae sp. 14	+			+		
Muricidae sp. 15	+					
Muricidae sp. 16	+					
<i>Neothais smithi</i> (Brazier, 1889)	+	+	+			Lord Howe I., New Zealand, Norfolk I. (Brook, 1998).
Family: NASSARIIDAE						
<i>Nassarius spirattus</i> (A. Adams, 1852)	+					Australia, Elizabeth & Middleton Reefs, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998).
<i>Nassarius</i> n. sp.	+	+			!	See Willan & Beechey (2015).
Family: RAPHITOMIDAE						
<i>Kermia benhami</i> (Oliver, 1915)	+					Kermadec endemic (Brook, 1998).
Family: TEREBRIDAE						
<i>Terebra affinis</i> (Gray, 1834)	+				!	Tropical Indo-Pacific Red Sea. ?Gulf of California, Mexico (ABRS, 2012).
<i>Terebra circumcincta</i> (Deshayes, 1857)	+					Tropical Pacific, including Australia, Lord Howe I., New Zealand (Brook, 1998).
Family: TURRIDAE						
<i>Xenoturris cingulifera</i> (Lamarck, 1822)	+					Tropical Pacific, southwest Pacific, including Australia (Brook, 1998); Aldabra, Tanzania (ABRS, 2012).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Family: VOLUTIDAE						
<i>Lyria?</i> sp.	+					
Order: NUDIBRANCHIA						
Family: Chromodorididae						
<i>Ceratosoma amoenum</i> (Cheeseman, 1886)		+			*	Northern half of North I., New Zealand, also Lord Howe I., Norfolk I. and temperate southern Australia (Cook, 2010).
<i>Chromodoris tinctoria</i> (Rüppell & Leuckart, 1828)	+				!	Australia.
Family: EUBRANCHIDAE						
<i>Dunga</i> sp.			+		!	
Family: PHYLLIDIIDAE						
<i>Phyllidiella pustulosa</i> (Cuvier, 1804)	+					Indo-Pacific, including Australia, Lord Howe I., Norfolk I., Pitcairn I. (Brook, 1998).
Order: SACOGLOSSA						
Family: PLAKOBANCHIDAE						
<i>Elysia</i> sp.	+				*	
Order: THECOSOMATA						
Family: LIMACINIDAE						
Limacinidae sp. 1	+					
Order: UMBRACULIDA						
Family: TYLODINIDAE						
<i>Tyrodina corticalis</i> (Tate, 1889)	+				!	Australia.
CAENOASTROPODA Order: unassigned						
Family: CERITHIIDAE	+					
<i>Cerithium citrinum</i> G.B. Sowerby II, 1855	+					Southwest Pacific, including Australia, Elizabeth & Middleton Reefs (Brook, 1998); Andaman Sea, Cocos-Keeling, East Africa, East India (ABRS, 2012).

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
<i>Cerithium egenum</i> Gould, 1849	+				!	Australia, Chagos Archipelago, Comoro Islands, Marshall Islands, Mauritius, Polynesia, Red Sea, temperate Indo-West Pacific, tropical Indo-West Pacific, western Pacific (ABRS, 2012).
<i>Royella sinon</i> (Bayle, 1880)	+					Tropical Pacific, southwest Pacific including Australia, Elizabeth & Middleton Reefs, Lord Howe I., Norfolk I. (Brook, 1998); Indo-West Pacific, Mauritius, Red Sea (ABRS, 2012).
Family: CERITHIOPSIDAE						
Cerithiopsidae sp. 1	+					
Cerithiopsidae sp. 2	+			+		
Cerithiopsidae sp. 3	+			+		
Cerithiopsidae sp. 4		+				
Cerithiopsidae sp. 5	+					
Family: EPITONIDAE						
<i>Epitonium lamellosum</i> (Lamarck, 1822)	+					
Family: EULIMIDAE						
Eulimidae sp. 1	+	+		+		
Eulimidae sp. 2	+					
Eulimidae sp. 3	+					
<i>Teretianax suteri</i> (Oliver, 1915)	+	+		+		Southwest Pacific, Norfolk I., New Zealand (Brook, 1998 as <i>Pyramidelloides suteri</i>).
Family: PLANAXIDAE						
<i>Hinea brasiliana</i> (Lamarck, 1822)	+			+		Australia, Lord Howe I., New Zealand, Norfolk I. (Brook, 1998), Easter I. (ABRS, 2012).
Family: TRIPHORIDAE						
Triphoridae sp. 1	+	+		+		
Triphoridae sp. 2	+			+		
Triphoridae sp. 3	+			+		

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Triphoridae sp. 4	+			+		
Triphoridae sp. 5	+					
Triphoridae sp. 6	+					
Triphoridae sp. 7	+					
Order: unassigned						
Family: ARCHITECTONICIDAE	+			+		
Family: CIMIDAE						
Cimidae sp. 1	+					
Family: COLLONIIDAE						
<i>Leptothyra kermadecensis</i> Marshall, 1979	+	+				
Family: FISSURELLIDAE						
Fissurellidae sp. 1	+					
Fissurellidae sp. 2	+					
Family: NACELLIDAE	+					
<i>Cellana craticulatus</i> (Suter, 1905)	+					Kermadec endemic (Brook, 1998).
Nacellidae sp. 1	+					
Family: OMALOGYRIDAE	+					
Family: ORBITESTELLIDAE	+					
Family: PATELLIDAE	+					
<i>Scutellastra kermadecensis</i> (Pilsbry, 1894)	+	+	+			Kermadec endemic (Brook, 1998).
Family: PYRAMIDELLIDAE						
Pyramidellidae sp. 1	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheesman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Pyramidellidae sp. 2	+					
Pyramidellidae sp. 3	+			+		
Pyramidellidae sp. 4	+					
Pyramidellidae sp. 5	+					
Pyramidellidae sp. 6	+					
Family: SCISSURELLIDAE						
Scissurellidae sp. 1	+	+				
Scissurellidae sp. 2	+					
Scissurellidae sp. 3	+	+				
Scissurellidae sp. 4	+					
Family: SIPHONARIIDAE						
<i>Siphonaria raoulensis</i> Oliver, 1915	+					Kermadec endemic (Brook, 1998).
Siphonariidae sp. 1	+					
Family: SKENEIDAE						
Skeneidae sp. 1	+					
Family: TEGULIDAE						
<i>Tectus royanus</i> (Iredale, 1912)	+	+	+			Kermadec endemic (Brook, 1998).
Family: TROCHIDAE						
Trochidae sp. 1	+			+		
Trochidae sp. 2	+					
Trochidae sp. 3	+					
Trochidae sp. 4	+					
Trochidae sp. 5	+					
<i>Trochus</i> sp.	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macaulay Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
PULMONATA Order: unassigned						
Family: ELLOBIIDAE	+					
Family: TRIMUSCULIDAE						
Trimusculidae sp. 1	+					
Class: POLYPLACOPHORA						
Order: CHITONIDA						
Family: CALLOCHITONIDAE						
<i>Eudoxochiton (Eudoxochiton) nobilis</i> (Gray, 1843)	+					New Zealand (Brook, 1998).
Family: CHITONIDAE						
Chiton sp. 1	+	+				
Chiton sp. 2	+					
Chiton sp. 3	+					
Chiton sp. 4	+					
<i>Chiton themeropsis</i> (Iredale, 1914)	+					Kermadec endemic (Brook, 1998).
Family: ISCHNOCHITONIDAE						
<i>Ischnochiton (Ischnochiton) intermedius</i> Hedley & Hull, 1912	+					Norfolk I. (Brook, 1998); Tasman Sea (ABRS, 2012).
Family: MOPALIIDAE						
<i>Plaxiphora (Plaxiphora) caelata</i> (Reeve, 1847)	+					New Zealand (Brook, 1998).
Phylum: NEMATODA	+	+		+		
Phylum: NEMERTEA	+	+				
Phylum: PLATYHELMINTHES	+					

Classification/Distribution	Raoul and satellite islands K2011-2 to K2011-65	Macauley Island K2011-66 to K2011-74	Cheeseman and Curtis Islands K2011-75 to K2011-97	L'Esperance Rock K2011-98 to K2011-100	Indication of previously known records from New Zealand	Comments on distribution records outside of Kermadec Islands and/or New Zealand
Phylum: PORIFERA						
Class: DEMOSPONGIAE						
Order: HALICHONDRIDA						
Family: HALICHONDRIIDAE						
Halichondriidae n. gen., n. sp.	+	+			!	Different to species known from the South Pacific including New Caledonia, southern Australia or New Zealand, particularly unusual in showing characters of both the Halichondriidae and the Polymastiidae and possibly represents a new family (M. Kelly, pers. comm.), see also Kelly <i>et al.</i> (2015).
Order: VERONGIDA						
Family: APLYSINELLIDAE						
<i>Suberea</i> n. sp.	+		+	+	!	Described by Kelly <i>et al.</i> (2015).
Phylum: SIPUNCULA						
Class: PHASCOLOSOMATIDEA						
Order: ASPIDOSIPHONIDA (as Aspidosiphoniiformes in Cutler (2009))						
Family: ASPIDOSIPHONIDAE						
<i>Aspidosiphon misakiensis</i> Ikeda, 1904	+	+	+			Central Atlantic, European waters, Mediterranean Sea, Portuguese Exclusive Economic Zone, Spanish Exclusive Economic Zone, New Zealand Exclusive Economic Zone (WoRMS, 2012). Cutler (2009) indicates from vicinity of Kermadec Is as (<i>A. hartmeyeri</i>).
Order: PHASCOLOSOMATIDA (as Phascosomatiformes in Cutler (2009))						
Family: PHASCOLOSOMATIDAE						
<i>Aptionsoma misakianum</i> (Ikeda, 1904)	+	+			!	Greek Exclusive Economic Zone; Gulf of Mexico; Indo-Pacific (WoRMS, 2012).
<i>Phascosoma stephensoni</i> (Stephen, 1942)	+	+			!	European waters, Greek Exclusive Economic Zone, Indo-West Pacific, Mediterranean Sea, Mozambique, Portuguese Exclusive Economic Zone, South Africa, Spanish Exclusive Economic Zone (WoRMS, 2012).
Phylum: TUNICATA	+					

ACKNOWLEDGEMENTS

The authors would like to thank Dr T. Trnski for the invitation to participate in this study and for his leadership in making it happen. We would also like to acknowledge the crew of the RV Braveheart for their enthusiastic support and expertise while in the field. The assistance of the other members of the expedition is also appreciated, particularly our colleague from the Australian Museum, Mr Mark McGrouther. Ms Arundathi Bopiah, Ms Justine Djajadikarta and Ms Rosemary Prior processed and sorted samples in the laboratory with great efficiency. Many people assisted with identifications, namely Dr S. Ah Yong (Australian Museum, Leptostraca), Dr P. Alderslade (CSIRO Marine Research, Alcyonacea and Gorgonacea), Ms P. Alvarez (Universidad Autonoma de Madrid, Syllidae), Dr C. Arango (Queensland Museum, Pycnogonida), Mr D. Beechey (Australian Museum, Mollusca), Dr G. Bird (Shotover Grove, Tanaidacea), Dr J. Bradford-Grieve (NIWA, Copepoda), Dr O. Coleman (Museum für Naturkunde, Amphipoda), Dr M. Eléaume (Museum national d'Histoire naturelle, Crinoidea), Dr S. Gerken (University of Alaska, Cumacea), Dr D. Gordon (NIWA, Bryozoa), Dr J. Guerra-García (Universidad de Sevilla, Amphipoda), Dr B. Hayward (Geomarine Research, Foraminifera), Mr A. Hosie (Western Australian Museum, Cirripedia), Dr L. Hughes (Australian Museum, Amphipoda), Dr P. Hutchings (Australian Museum, Terebellidae), Dr M. Kelly (NIWA, Porifera), Mr I. Loch (Australian Museum, Mollusca), Dr J. Lowry (Australian Museum, Talitridae), Dr C. Mah (Smithsonian Institution, Asteroidea), Dr E. Kupriyanova (Australian Museum, Serpulidae), Dr A. Maiorova (A.V. Zhirmunsky Institute of Marine Biology FEBRAS, Sipuncula), Mr A. Miskelly (Blackheath, Echinoidea), Ms M. Mitchell (Museum Victoria, Actinaria), Ms M. Morley (Auckland War Memorial Museum, Ostracoda), Ms A. Murray (Australian Museum, Copepoda and Polychaeta), Dr T. O'Hara (Museum Victoria, Ophiuroidea), Mr M. O'Loughlin (Museum Victoria, Holothuroidea), Dr D. Opresko (Oak Ridge National Laboratory, Antipatharia), Dr W. Ponder (Australian Museum, Mollusca), Dr G. Poore (Museum Victoria, anthuroid Isopoda), Dr Z. Richards (Australian Museum, Scleractinia), Dr B. Rudman (Australian Museum, Mollusca), Dr F. Sinniger (University of the Ryukyus, Zoantharia), Ms H. Stoddart (Australian Museum, Amphipoda), Ms J. Waterhouse (Australian Museum, Mollusca), Ms C. Watson (Northern Territory Art Gallery and Museum, Chrysopetalidae), Dr J. Watson (Museum Victoria, Hydrozoa), Dr R. Willan (Northern Territory Art Gallery and Museum, Mollusca), Dr J. Wells (Victoria University of Wellington, Copepoda), Dr G. Wilson (Australian Museum, asellotan Isopoda) and Dr N. Wilson (Australian Museum, Mollusca). Without their support this report would not have been possible. Dr C. Duffy generously shared an unpublished list of taxa previously recorded from the Kermadec Islands that was extremely useful to us. Dr S. Ah Yong provided information on decapod Crustacea. Our participation in this study was funded by the bequest of Patricia M. Porritt, which is

administered by the Australian Museum Foundation. Ms Amanda Hay, Australian Museum, assisted in writing initial applications for this funding. Two anonymous reviewers provided comments that improved the manuscript.

REFERENCES

- ABRS (Australian Biological Resources Study) 2012. *Australian Faunal Directory*. <http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/home>. Accessed March 2012.
- Ahyong, S.T. 2015. Decapod Crustacea of the Kermadec Biodiscovery Expedition 2011. *Bulletin of the Auckland Museum* 20: 405–442. <http://www.aucklandmuseum.com/research/pub/bulletin/20/18>.
- Australian Institute of Marine Science 2012. *Corals of the World Online*. <http://coral.aims.gov.au/>. Accessed March 2012.
- Bird, G.J. 2015. Tanaidacea (Crustacea: Peracarida) collected by the Kermadec Biodiscovery Expedition 2011, with a new subfamily of Paratanaidae: Metatanainae. *Bulletin of the Auckland Museum* 20: 369–404. <http://www.aucklandmuseum.com/research/pub/bulletin/20/17>.
- Bopiah, A. and L.E. Hughes 2013. New species and records of *Mallacoota* from the South Pacific (Maeridae: Amphipoda: Peracarida). *Marine Biodiversity Records* 6: 1–16.
- Brook, F.J. 1998. The coastal molluscan fauna of the northern Kermadec Islands, southwest Pacific Ocean. *Journal of the Royal Society of New Zealand* 28(2): 185–233.
- Brook, F.J. 1999. The coastal scleractinian coral fauna of the Kermadec Islands, southwestern Pacific Ocean. *Journal of the Royal Society of New Zealand* 29(4): 435–460.
- Bryozoa.net 2013. <http://www.bryozoa.net/index.html>. Accessed February 2013.
- Cairns, S.D., L. Gershwin, F.J. Brook, P. Pugh, E.W. Dawson, O. Ocaña, W. Vervoort, G. Williams, J.E. Watson, D.M. Opresko, P. Schuchert, P.M., Hine, D.P. Gordon, H.J. Campbell, A.J. Wright, J.A. Sanchez and D.G. Fautin 2009. Phylum Cnidaria: Corals, Medusae, Hydroids, Myxozoa. Pp. 59–101, in: Gordon, D.P. (ed.) *New Zealand Inventory of Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch.
- Child, C.A. 1998. *The marine fauna of New Zealand: Pycnogonida (sea spiders)*. NIWA Biodiversity Memoir 109: 1–71.
- Chinn, W. 2015. The Kermadec Islands terrestrial invertebrate fauna: Observations on the taxonomic distribution and island biogeography. *Bulletin of the Auckland Museum* 20: 443–462. <http://www.aucklandmuseum.com/research/pub/bulletin/20/19>.
- Cook, S. de C. 2010. Introduction. Pp. 19–56, in: Cook, S. de C. (ed.) *New Zealand Coastal Marine Invertebrates 1*. Canterbury University Press, Christchurch.
- Cook, S. de C. (ed.) 2010. *New Zealand Coastal Marine Invertebrates 1*. Canterbury University Press, Christchurch. 640 pp.
- Cutler, E.B. 2009. Phylum Sipuncula: Peanut worms. Pp. 302–307, in: Gordon, D.P. (ed.) *New Zealand Inventory*

- of *Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch.
- Department of Conservation 2011. *Marine Biodiversity in New Zealand*. <http://www.biodiversity.govt.nz/seas/biodiversity/index.html>. Accessed 24 February 2012.
- Duffy, C. and S.T. Ahyong 2015. Annotated checklist of the marine flora and fauna of the Kermadec Islands Marine Reserve and northern Kermadec Ridge, New Zealand. *Bulletin of the Auckland Museum* 20: 19–124. <http://www.aucklandmuseum.com/research/pub/bulletin/20/2>.
- Francis, M.P. and R.G. Cole 2010. Diversity, biogeography and abundance of Kermadec Islands coastal fishes. Pp. 37–40, in: DEEP – Talks and thoughts celebrating diversity in New Zealand’s untouched Kermadecs. The PEW Environment Group, Wellington.
- Gardner, J. 2010. Subtidal biodiversity and community composition of the Kermadec Islands. Pp. 42–45, in: DEEP – Talks and thoughts celebrating diversity in New Zealand’s untouched Kermadecs. The PEW Environment Group, Wellington.
- Glasby, C.J. and G.B. Read 2009. List of known species for New Zealand waters. *World Register of Marine Species*. <http://www.marinespecies.org/aphia.php?p=source&id=132784>. Accessed March 2012.
- Glasby, C.J., G.B. Read, K.E. Lee, R.J. Blakemore, P.M. Fraser, A.M. Pinder, C. Erséus, W.E. Moser, E.M. Burreson, F.R. Govedich, R.W. Davies and E.W. Dawson 2009. Phylum Annelida: bristleworms, earthworms, leeches. Pp. 312–358, in: Gordon, D.P. (ed.) *New Zealand Inventory of Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch.
- Gordon, D.P. (ed.) 2009. *New Zealand Inventory of Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. 566 pp.
- Gordon, D.P. (ed.) 2010. *New Zealand Inventory of Biodiversity 2. Kingdom Animalia: Chaetognatha, Ecdysozoa, Ichnofossils*. Canterbury University Press, Christchurch. 528 pp.
- Gordon, D.P. and F.A. Bisby 2009. Introduction. Pp. 9–12, in: Gordon, D.P. (ed.) *New Zealand Inventory of Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch.
- Gordon, D.P., J. Beaumont, A. Macdiarmid, D.A. Robertson and S.T. Ahyong 2010. Marine Biodiversity of Aotearoa New Zealand. *PLoS ONE* 5(8): 10905. doi:10.1371/journal.pone.0010905.
- ITIS (Integrated Taxonomic Information System) 2015. <http://www.itis.gov/>. Accessed 27 October 2014.
- Keable, S.J. 1995. Structure of the marine invertebrate scavenging guild of a tropical reef ecosystem: field studies at Lizard Island, Queensland, Australia. *Journal of Natural History* 29: 27–45.
- Kelly, M., S. Amirapu, S. Mills, M. Page and H. Reiswig 2015. Kermadec Islands sponge biodiversity: A review and description of a new species, *Suberea meandrina* sp. nov. (Demospongiae, Verongida, Aplysinellidae). *Bulletin of the Auckland Museum* 20: 311–324. <http://www.aucklandmuseum.com/research/pub/bulletin/20/12>.
- Mah, C.L., D.G. McKnight, M.K. Eagle, D.L. Pawson, N. Améziane, D.J. Vance, A.N. Baker, H.E.S. Clark and N. Davey 2009. Phylum Echinodermata: sea stars, brittle stars, sea urchins, sea cucumbers, sea lilies. Pp. 371–400, in: Gordon, D.P. (ed.) *New Zealand Inventory of Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch.
- Malaquias, M.A.E and D.G. Reid 2008. Systematic revision of the living species of Bullidae (Mollusca: Gastropoda: Cephalaspidea), with a molecular phylogenetic analysis. *Zoological Journal of the Linnean Society* 153: 453–543.
- marineNZ 2009. *Now Browsing: Marine Biodiversity NZ*. http://www.marinenz.org.nz/index.php/resources/doc_category/C9099/. Accessed 24 February 2012.
- Morrison, A. 2009. Foreword. Pp. 7, in: Gordon, D.P. (ed.) *New Zealand Inventory of Biodiversity 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. Canterbury University Press, Christchurch.
- NZOR 2009. *New Zealand Organisms Register*. <http://www.nzor.org.nz/Home>. Accessed 24 February 2012.
- Oliver, W.R.B. 1915. The mollusca of the Kermadec Islands. *Transactions and Proceedings of the New Zealand Institute* 47: 509–568.
- O’Loughlin, P.M. and D. Vandenspiegel 2012. Sea cucumbers collected by the Kermadec Biodiscovery Expedition 2011 (Echinodermata: Holothuroidea: Apodida and Dendrochirotida). *Zootaxa* 3515: 60–66.
- Ponder, W., P. Hutchings and R. Chapman 2002. Overview of the conservation of Australian marine invertebrates. A report for Environment Australia. Sydney, Australian Museum. <http://australianmuseum.net.au/Uploads/Documents/10418/Marine%20Invert%20Conservation%20Overview.pdf>. Accessed 24 February 2012.
- Read, G. and K. Fauchald 2012. *World Polychaeta database*. <http://www.marinespecies.org/polychaeta/aphia.php?p=search>. Accessed February 2013.
- Reid, A. and N. Wilson 2015. Octopuses of the Kermadec Islands: discovery and description of a new member of the *Octopus* ‘vulgaris’ complex (*O. jollyorum*, sp. nov.) and the first description of a male *Callistoctopus kermadecensis* (Berry, 1914). *Bulletin of the Auckland Museum* 20: 349–368. <http://www.aucklandmuseum.com/research/pub/bulletin/20/16>.
- Sirvid, P.J., Z-Q., Zhang, M.S. Harvey, B.E. Rhode, D.R. Cook, I. Bartsch and D.A. Staples 2010. Phylum Arthropoda Subphylum Chelicerata: horseshoe crabs, sea spiders, arachnids. Pp. 50–89, in: Gordon, D.P. (ed.) *New Zealand Inventory of Biodiversity 2. Kingdom Animalia: Chaetognatha, Ecdysozoa, Ichnofossils*. Canterbury University Press, Christchurch.
- Stöhr, S. and T. O’Hara (eds) 2010. *World Ophiuroidea database*. <http://www.marinespecies.org/ophiuroidea/index.php>. Accessed March 2012.
- Stuckey, F.G.A. 1914. Description of a collection of actinians from the Kermadec Islands. *Transactions and Proceedings of the New Zealand Institute* 46: 132–134.
- Ten Hove, H.A. and E.K. Kupriyanova 2009. Taxonomy of Serpulidae (Annelida, Polychaeta): The state of affairs. *Zootaxa* 2036: 1–126.

- Tovar-Hernández, A.M. and L.H. Harris 2010. *Parasabella* Bush, 1905, replacement name for the polychaete genus *Demonax* Kinberg, 1867 (Annelida, Polychaeta, Sabellidae). *ZooKeys* 60: 13–19.
- Trnski, T., M. Francis, C. Duffy, S. Chiswell and W. Nelson 2010. Motion in the ocean: Biological oceanography of the Kermadec region – migration and connectivity of marine flora and fauna. Pp. 27–30, in: DEEP – Talks and thoughts celebrating diversity in New Zealand’s untouched Kermadecs. The PEW Environment Group, Wellington.
- Trnski, T. and P.J. de Lange 2015. Introduction to the Kermadec Biodiscovery Expedition, May 2011. *Bulletin of the Auckland Museum* 20: 1–18. <http://www.aucklandmuseum.com/research/pub/bulletin/20/1>.
- Watson, J. 2015. Hydroids (Cnidaria, Hydrozoa: Hydroidolina) from the Kermadec Islands. *Bulletin of the Auckland Museum* 20: 325–336. <http://www.aucklandmuseum.com/research/pub/bulletin/20/13>.
- Willan, R.C. and D.L. Beechey 2015. Description of *Nassarius berniceae* (Mollusca: Gastropoda: Nassariidae): a new species of shallow water whelk endemic to the Kermadec Islands. *Bulletin of the Auckland Museum* 20: 341–348. <http://www.aucklandmuseum.com/research/pub/bulletin/20/15>.
- Willan, R.C. and A. Perkins 2011. “Tropical” marine species newly recorded from northern mainland New Zealand: one damselfish and three sea slugs. Pp. 79–86, in: Kuric, A., M. Coutts and M. Radjainia (eds) *Behind the Bubble Curtain: Auckland University 50th Anniversary Book*. Auckland University Underwater Club, Auckland.
- WoRMS (World Register of Marine Species) 2012. <http://marinespecies.org/>. Accessed March 2012.
- Ylitalo, H.A., L. Watling and R.J. Toonen 2014. First description of hatchlings and eggs of *Octopus oliveri* (Berry, 1914) (Cephalopoda: Octopodidae). *Molluscan Research* 34: 79–83.
- Stephen J. Keable, Australian Museum Research Institute, 6 College Street Sydney NSW 2010.
Email: stephen.keable@austmus.gov.au
- Amanda L. Reid, Australian Museum Research Institute, 6 College Street Sydney NSW 2010.
- Article submitted: 4 May 2012; revised and accepted: 9 August 2012.*

