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Gary C. B. Poore, Anna W. McCallum and Joanne Taylor

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Decapod Crustacea of the continental margin of southwestern and central Western Australia: preliminary identifications of 524 species from FRV *Southern Surveyor* voyage SS10-2005

GARY C. B. POORE, ANNA W. MCCALLUM AND JOANNE TAYLOR

Museum Victoria, GPO Box 666E, Melbourne, Victoria 3001, Australia
(gpoore@museum.vic.gov.au)

Abstract

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A collection of Dendrobranchiata (44 species), Achelata (4 species), Anomura (127 species), Astacidea (4 species), Brachyura (227 species), Caridea (88 species), Polychelida (5 species), Stenopodidea (2 species) and Thalassinidea (23 species) from shelf edge and slope depths of south-western Australia is reported. Seventy-seven families are represented. Thirty-three per cent (175) of all species are suspected to be new species, eight per cent are new records for Australia, and a further 25% newly recorded for southern Western Australia.

Contents

Introduction

The offshore fauna of southwestern Australia is poorly known relative to that of some other regions of Australia. Population centres in southeastern Australia and offshore oil and gas resources in the northwest have in different ways provided foci for exploration and some biological characterisation along the continental margins. Marine exploration in the southwest on the other hand has been confined to coastal and shallow-water environments, particularly in a series of taxonomic workshops in Albany, Rottnest Island and Esperance. Decapod crustaceans from these regions were reviewed by Morgan and Jones (1991) and Jones and Morgan (1993). Crustacean collections made offshore and now residing in the Western Australian Museum are not extensive, those from the cruises of the FV *Davena* (1960) and HMAS *Diamantina* (1960s) being the most significant.

All of this is ironic because the first ever illustrations by Europeans of Australian marine animals were published in 1703 by the privateer William Dampier (1651–1715) (Dampier, 1703). Many of the shore collections made by François Peron and colleagues during the 1802 visit of the *Naturaliste* and *Geographe* to Australia were made in southwestern Australia (Milne Edwards, 1837). Later foreign expeditions also targeted the southwest (Balss, 1935).

During compilation of records for a guide to identification of southern Australian decapod Crustacea (Poore, 2004) it emerged that the southwest was less well known than the southeast of Australia. This impression is borne out by an analysis of the distribution of species along the southern Australian coast (O'Hara and Poore, 2000). These authors discovered that species composition varied with both latitude and longitude. Species richness was relatively constant from east to west but graded with latitude from high in the warm temperate regions around Perth and Sydney to low in cool-temperate southern Tasmania. They concluded that history as well as ecological hypotheses explain the latitudinal gradient of marine species richness in southern Australia, not the least being the invasion of the southwestern margin by animals of Indo-West Pacific origin.

Bioregionalisation of southwestern Australia depends now on geophysical surrogates and patterns in the distribution of fishes of the shelf and continental slope (Last et al., 2005). Three bioregions have been recognised along the WA coast with two intermediate regions in between: the Northwest Province, Central Western Transition Zone, Central Western Province, Southwestern Transition Zone and Southern Province.

The results presented here are part of a project mounted largely by CSIRO Marine and Atmospheric Research (CMAR) and Museum Victoria entitled “Mapping benthic ecosystems on the deep continental shelf and slope in Australia’s South West Region” to understand evolution and biogeography and support implementation of the SW Regional Marine Plan and

Commonwealth Marine Protected Areas". The field work addresses four primary objectives:

"1) test hypotheses on the evolution and biogeography of Australia's biodiversity, in particular relating to species composition, distribution patterns and taxonomic surrogacy

2) validate and refine CSIRO's optimised methodology for mapping deep water benthic ecosystems on the western continental margin and in sub-tropical locations to enhance its application to natural resource management at a national scale

3) document the benthic biodiversity and identify areas of high conservation values in the context of Commonwealth MPA declaration

4) validate, and permit refinement of, a marine bioregionalisation during the development of the SW Regional Marine Plan by the National Oceans Office."

This report deals only with the crustacean Order Decapoda, one of the taxa chosen to test these hypothesis. It first outlines briefly where and how the new material was collected. Next, data on taxonomy and distribution associated with each taxon identified are presented with brief comments. The purpose of publishing summarised information is to alert taxonomists to this essentially new and previously undescribed fauna and to provide access to data for a distributional analysis of the region.

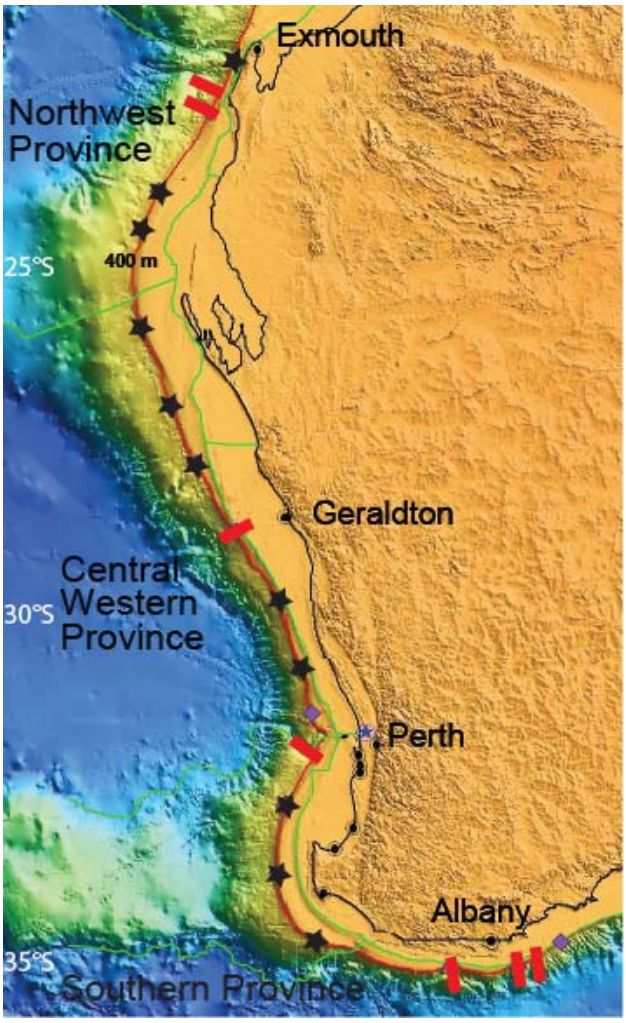


Figure 1. The survey area showing positions of sampling sites. At 11 sites between Albany and Exmouth samples were taken at depths of 100 and 400 m (black stars), and at 7 transects on special features at intended depths of 100, 200, 400, 700 and 1000 m (red rectangles).

Methods

Sampling program. The data for this project were collected during two surveys undertaken from FRV *Southern Surveyor*, a 67 m converted stern-trawler. The first was completed in July–August 2005 when all the survey sites were mapped using multibeam acoustics, surveyed with a towed, high-resolution video system and sampled with sediment grabs. The second survey ran a reciprocal course and collected complementary benthic invertebrate epifauna and infauna using a benthic sled and beam trawl. The second survey provided the collections treated here. Follow-up cruises during 2007 with the same overall objectives continued the same sampling strategy along the Western Australian margin as far north as possible. Samples taken in 2007 are being identified in 2008 and will naturally add to the distributional records presented here.

Stations. Sampling was targeted at nested spatial scales of habitat – terrains of sediment and rocky substrata comprising features (mostly canyons and sediments terraces of the continental slope), within depth zones, across latitudes – to determine how biodiversity is distributed at particular scales. At the highest level, samples were allocated to enable comparison of the benthic bioregions already in use off the west and southwest coasts of Western Australia. Our collections come from 11 sites between Albany and Ningaloo (south of Exmouth) at notional depths of 100 and 400 m, and seven cross-depth transects (at intended depths of 100, 200, 400, 700 and 1000 m) made on special features of interest off Albany, Perth Canyon, Abrolhos and Ningaloo (Fig. 1). Separate targeting of hard and soft seabed terrain types was undertaken successfully in most areas.

Sampling gear. Samples were obtained using two gears, the "Sherman sled" and a beam trawl. The Sherman sled is a CMAR-designed robust sled with 1.2-metre-wide opening (0.6 m high) and is fitted with a 25 mm stretched-mesh net (Lewis, 1999). On some occasions a secondary 1 mm-mesh net was fitted inside. The beam trawl was CMAR-modified version of the French IRD design, 4 metres wide and fitted with a 25 mm stretched-mesh net.

Shipboard sorting. Samples from the sled or beam trawl were placed into one or more plastic fish boxes on deck and transferred to the wet sorting tray below deck. The material was spread out, turned and broken up and individual decapods captured and placed in 150 x 80 mm plastic dishes in seawater in rough taxonomic groups. Individuals in these dishes were further separated into operational taxonomic units (OTUs that represented our initial separation of taxa) before being labelled with provisional names and station and acquisition numbers.

Fixation and preservation. Most crustaceans were fixed in formalin but some specimens of abundant species or limbs of others were placed directly into 95% ethanol. At Museum Victoria formalin-fixed material was transferred to fresh water to soak overnight and then to 70% ethanol.

Identification. Several helpers (acknowledged below) separated the collection into more refined OTUs under the guidance of the second author who made many initial identifications. The ultimate identification of species was made by the first author with reference to general texts, in particular Poore (2004) and Sakai (1976) and the considerable primary literature cited where relevant below. Although every attempt was made to be confident of identifications no specimens were compared with types. For this reason and because so many of the determinations were of species hitherto unrecorded from Australia, the identifications must be treated as provisional.

Besides zoological names at the lowest level possible, each species was assigned a unique "MoV" number, continuing a

series started at Museum Victoria for species collected in Bass Strait in 1990. Each MoV number is permanently associated with its taxon and independent of its accepted generic or higher classification. MoV numbers are part of the taxonomy module of the Museum Victoria KEmu® registration database.

Higher taxonomy follows that of Davie (2002a; 2002b), Poore (2004) and (Ng et al., 2008) (see page 35).

Data storage. Each specimen-lot was registered on the Museum Victoria KEmu® registration catalogue from which the records published below were generated.

Presentation of taxonomic results

The results are presented as species within genera within families within infraorders (Dendrobranchiata first, Pleocyemata infraorders next in alphabetical order). The order of families is alphabetical except for Brachyura where Ng et al.'s (2008) hierarchy is followed. For each family, the species found are summarised and the literature resources used cited.

Each species is listed by name with its authority when appropriate. Uncertain identifications are prefixed "cf." and new species close to another known species are prefixed "aff." "MoV" numbers are given for all taxa and used as specific names for uncertain or new species.

Specimen records for each species are summarised as follows:
Records: the total number of specimens, with latitutidinal range (to nearest minute) and depth range (in metres). The latitudinal range of all samples is from 20°59´S to 35°1´S. (The longitudinal range is 112°14´E to 118°43´E.) The shallowest actual sample depth was at 50 m and the deepest at 1260 m; most measured depths are near the intended depths of 100, 400, 700 and 1000 m. A tick ✓ at the end of this line indicates that a specimen or fraction of specimen was fixed directly in alcohol (most material was fixed in formalin).
Distribution: a general comment on published distribution plus a comment on whether the species is a new species, new for southwestern Australia, new for WA or for all of Australia.
Reference: bibliographic citation used for identification.

Following the text for many species are coloured photographs. Those taken on board ship are by Karen Gowlett-Holmes. Photos of specimens taken at Museum Victoria after preservation and colour loss are by Anna McCallum or David Staples.

The entry under *Records* summarises the detailed collection data stored in the Museum Victoria KEmu® database. Sections of these data are publicly available at the Museum Victoria, Collections and Research website, "Search Natural Sciences collections".
http://collections.museumvictoria.com.au/browser.php?type=Zoology&phylum=Arthropoda

Here, it is possible to search on named species and "Map Selected Specimens and Species with Google Maps". The resulting map is derived from all Museum Victoria records, not just those from this survey. The maps reveal the bias inherent in museum collections. The map of the apparent distribution of the common slipper lobster *Ibacus alticrenatus* includes 36 records from southeastern and western Australia but none apparently from the Great Australian Bight (Fig. 2). The species certainly occurs there, as it does along a substantial part of the eastern Australian coast but no collecting by Museum Victoria has been done in these regions.

It is also possible to map the same species through an OZCAM (Online Zoological Collections of Australian Museums) query of Australia's fauna:
http://www.ozcam.gov.au/cgi-bin/emu-dataportal.cgi.

A search on OZCAM returns a map using collection data from all relevant Australia museums.

It is not possible to search for undescribed species. A search on a genus is likely to return results for more than one species.

Figure 2. The apparent distribution of *Ibacus alticrenatus* based on 36 records from Museum Victoria. The absence from the south coast is unlikely to be real.

Taxonomic results and commentary

The collection of ~6083 specimens representing 524 provisional species is the first comprehensive characterisation of the fauna of the continental margin of southwestern Australia. For comparison, Poore's (2004) identification guide to southern Australian marine decapods includes 800 species and the *Zoological Catalogue of Australia* enumeration of all named Australian marine Decapoda (Davie, 2002a, b) listed 2077 marine species. Poore's (2004) guide covered southern Australia extending on the west coast as far north as Perth (31°S). Our estimate is that 76 species previously unrecorded south of Perth were found in this survey, i.e., a 9.4% increase over Poore's enumeration from museum collections and literature.

The survey illustrates how little is known about the fauna of the continental margin of most of Australia. The eastern slope of NSW and Tasmania is best known. These collections are the first systematic samples from southern WA.

Overall, 175 species (33%) were new to science (Table 1). This figure is based on what we feel is a thorough review of the literature covering the fauna of Australia and the Indo-West Pacific. The number is probably an underestimate and is subject to further examination by taxonomic experts. Many of the so-called "new records" (88 species for Australia as a whole, 62 for WA and 69 for southern WA) may well prove to be new species, different from the similar species with which they have been identified. The highest percentage of new species was in Thalassinidea (83% of 23 species), much higher than the next most novel infraorders (50% of 127 species of Anomura and 31% of 227 species of Brachyura).

Many species were rare. Forty-two per cent (222 species) were found in just one of 127 samples and a further 17% (89 species) in only two samples. This is a common feature of exploration of this type and hints that the number of species yet to be discovered is much larger than anticipated.

New Australian records (88 species or 6%) were characterised as such because they did not appear in Davie's catalogues. Most were species already described from the Indo-West Pacific region (tropical and subtropical regions from Japan through to east Africa). In all cases, lack of time or few specimens prevented a thorough comparison between the WA material and original descriptions. Identifications in this category should be treated as probable at best – several may well be additional new species.

It is notable that several deep water species recently reported from Tasmanian seamounts have (with few exceptions) not been rediscovered in southern WA (Ahyong and Poore, 2004a, b).

Invitation

The process of identification of Decapoda necessitates familiarity with diverse morphologies, and access to many keys nd descriptions. Most decapod taxonomists specialise in one or few families (either hermit crabs, or some crabs or prawns).

No-one is a specialist in all 77 families recognised here. These results have depended on consulting the 188 original research papers and books cited below. Poore's guidebook to southern (south of 31°S on the west coast) Australian decapods included only 24% of the species discovered in the southwest at these latitudes and a much smaller percentage of the total fauna. The collection offers considerable scope for taxonomic, evolutionary and biogeographic study. The material is available for study at Museum Victoria or on loan to crustacean taxonomists world-wide.

Table 1. Summary of numbers of species in genera, families and infraorders, including numbers of new Australian records, new records for Western Australia, and new records for southwestern Australia. Dendrobranchiata are listed first and infraorders of Pleocyemata next in alphabetical order.

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
Dendrobranchiata	Aristeidae	*Aristeus*	4	1	1	1		0%
	Aristeidae	*Pseudaristeus*	1					0%
	Aristeidae		**5**	**1**	**1**	**1**	**0**	0%
	Benthesicymidae	*Benthesicymus*	1					0%
	Benthesicymidae		**1**	**0**	**0**	**0**	**0**	0%
	Penaeidae	*Metapenaeopsis*	7	2	1	1		0%
	Penaeidae	*Parapenaeus*	5	4	1			0%
	Penaeidae	*Penaeopsis*	2				2	100%
	Penaeidae	*Penaeus*	1					0%
	Penaeidae	*Trachypenaeus*	1					0%
	Penaeidae		**16**	**6**	**2**	**1**	**2**	13%
	Sergestidae	*Sergestes*	2					0%
	Sergestidae	*Sergia*	2	1				0%
	Sergestidae		**4**	**1**	**0**	**0**	**0**	0%
	Sicyoniidae	*Sicyonia*	4	2			1	25%
	Sicyoniidae		**4**	**2**	**0**	**0**	**1**	25%
	Solenoceridae	*Hadropenaeus*	1			1		0%
	Solenoceridae	*Haliporoides*	1					0%
	Solenoceridae	*Haliporus*	1			1		0%
	Solenoceridae	*Hymenopenaeus*	2		1			0%
	Solenoceridae	*Solenocera*	9		1	5		0%
	Solenoceridae		**14**	**0**	**2**	**7**	**0**	0%
Dendrobranchiata	**all taxa**		**44**	**10**	**5**	**9**	**3**	7%
Achelata	Palinuridae	*Puerulus*	1			1	0	0%
	Palinuridae		**1**	**0**	**0**	**1**	**0**	0%
	Scyllaridae	*Crenarctus*	1				0	0%
	Scyllaridae	*Ibacus*	2				0	0%
	Scyllaridae	*Remiarctus*	1			1	0	0%
	Scyllaridae		**2**	**0**	**0**	**1**	**0**	0%
Achelata	**all taxa**		**4**	**0**	**0**	**2**	**0**	0%
Anomura	Chirostylidae	*Uroptychus*	5				1	20%
	Chirostylidae		**5**	**0**	**0**	**0**	**1**	20%
	Galatheidae	*Agononida*	6	1	2	1	2	33%
	Galatheidae	*Allogalathea*	1					0%
	Galatheidae	*Enriquea*	1		1			0%
	Galatheidae	*Galathea*	7	1	2		4	57%
	Galatheidae	*Lauriea*	1					0%
	Galatheidae	*Munida*	19	2	5		11	58%
	Galatheidae	*Munidopsis*	7	4		1		0%
	Galatheidae	*Paramunida*	1	1				0%
	Galatheidae	*Phylladiorhynchus*	1					0%
	Galatheidae	*Raymunida*	1				1	100%
	Galatheidae		**45**	**9**	**10**	**2**	**18**	40%
	Porcellanidae	*Lissoporcellana*	1				1	100%
	Porcellanidae	*Pachycheles*	1			1		0%
	Porcellanidae	*Petrolisthes*	2					0%

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
Anomura (cont.)	Porcellanidae	*Polyonyx*	1					0%
	Porcellanidae	*Porcellanella*	1					0%
	Porcellanidae		**6**	**0**	**0**	**1**	**1**	17%
	Albuneidae	*Albunea*	1					0%
	Albuneidae	*Stemonopa*	1					0%
	Albuneidae		**2**	**0**	**0**	**0**	**0**	0%
	Diogenidae	*Calcinus*	4				4	100%
	Diogenidae	*Ciliopagurus*	1	1				0%
	Diogenidae	*Dardanus*	5				5	100%
	Diogenidae	*Diogenes*	1				1	100%
	Diogenidae	*Paguristes*	7		1		4	57%
	Diogenidae	*Strigopagurus*	1					0%
	Diogenidae		**19**	**1**	**1**	**0**	**14**	74%
	Lithodidae	*Lithodes*	1				1	100%
	Lithodidae	*Paralomis*	1				1	100%
	Lithodidae		**2**	**0**	**0**	**0**	**2**	100%
	Paguridae	*Anapagrides*	1				1	100%
	Paguridae	*Bathypaguropsis*	1		1			0%
	Paguridae	*Cestopagurus*	1				1	100%
	Paguridae	*Hemipagurus*	1				1	100%
	Paguridae	*Lophopagurus*	2		2			0%
	Paguridae	*Michelopagurus*	1				1	100%
	Paguridae	*Nematopagurus*	3				3	100%
	Paguridae	*Porcellanopagurus*	1	1				0%
	Paguridae	*Propagurus*	1	1				0%
	Paguridae	*Pylopaguropsis*	2				1	50%
	Paguridae	*Spiropagurus*	1		1			0%
	Paguridae	*Turleana*	2	2				0%
	Paguridae	*Pagurid*	16				16	100%
	Paguridae		**33**	**4**	**4**	**0**	**24**	73%
	Parapaguridae	*Oncopagurus*	3		1	2		0%
	Parapaguridae	*Paragiopagurus*	4	1			2	50%
	Parapaguridae	*Parapagurus*	1		1			0%
	Parapaguridae	*Strobopagurus*	1				1	100%
	Parapaguridae	*Sympagurus*	4		2	1		0%
	Parapaguridae		**13**	**1**	**4**	**3**	**3**	23%
	Pylochelidae	*Pylocheles*	1		1			0%
	Pylochelidae	*Pylochelidae*	1					0%
	Pylochelidae		**2**	**0**	**1**	**0**	**0**	0%
Anomura	**all taxa**		**127**	**15**	**20**	**6**	**63**	50%
Astacidea	Nephropidae	*Metanephrops*	2					0%
	Nephropidae	*Nephropsis*	2			1		0%
	Nephropidae		**4**	**0**	**0**	**1**	**0**	0%
Astacidea	**all taxa**		**4**	**0**	**0**	**1**	**0**	0%
Brachyura	Cyclodorippidae	*Krangalangia*	1			1		0%
	Cyclodorippidae	*Tymolus*	2			2		0%
	Cyclodorippidae		**3**	**0**	**0**	**3**	**0**	0%
	Cymonomidae	*Cymonomus*	2	1			1	50%
	Cymonomidae		**2**	**1**	**0**	**0**	**1**	50%
	Dromiidae	*Austrodromidia*	1					0%

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
Brachyura (cont.)	Dromiidae	*Dromia*	1					0%
	Dromiidae	*Epigodromia*	1				1	100%
	Dromiidae	*Fultodromia*	2				1	50%
	Dromiidae	*Takedromia*	1				1	100%
	Dromiidae		**6**	**0**	**0**	**0**	**3**	50%
	Dynomenidae	*Hirsutodynomene*	1			1		0%
	Dynomenidae		**1**	**0**	**0**	**1**	**0**	0%
	Homolidae	*Dagnaudus*	1					0%
	Homolidae	*Homola*	1					0%
	Homolidae	*Homologenus*	2	1				0%
	Homolidae	*Latreillopsis*	1					0%
	Homolidae	*Paramolopsis*	1					0%
	Homolidae	*Yaldwynopsis*	1				1	100%
	Homolidae		**7**	**1**	**0**	**0**	**1**	14%
	Latreilliidae	*Eplumula*	1					0%
	Latreilliidae	*Latreillia*	1	1				0%
	Latreilliidae		**2**	**1**	**0**	**0**	**0**	0%
	Raninidae	*Cosmonotus*	1			1		0%
	Raninidae	*Lyreidus*	2	1				0%
	Raninidae	*Notosceles*	1					0%
	Raninidae	*Umalia*	1			1		0%
	Raninidae		**5**	**1**	**0**	**2**	**0**	0%
	Aethridae	*Actaeomorpha*	1			1		0%
	Aethridae	*Drachiella*	1			1		0%
	Aethridae		**2**	**0**	**0**	**2**	**0**	0%
	Calappidae	*Calappa*	3	1	1			0%
	Calappidae	*Mursia*	3		2		1	33%
	Calappidae		**6**	**1**	**3**	**0**	**1**	17%
	Atelecyclidae	*Trichopeltarion*	2				2	100%
	Atelecyclidae		**2**	**0**	**0**	**0**	**2**	100%
	Carpiliidae	*Carpilius*	1			1		0%
	Carpiliidae		**1**	**0**	**0**	**1**	**0**	0%
	Corystidae	*Gomeza*	1					0%
	Corystidae	*Jonas*	1				1	100%
	Corystidae		**2**	**0**	**0**	**0**	**1**	50%
	Dorippidae	*Dorippe*	1					0%
	Dorippidae	*Neodorippe*	1	1				0%
	Dorippidae	*Paradorippe*	1			1		0%
	Dorippidae		**3**	**1**	**0**	**1**	**0**	0%
	Ethusidae	*Ethusa*	3				3	100%
	Ethusidae	*Ethusina*	1				1	100%
	Ethusidae		**4**	**0**	**0**	**0**	**4**	**100%**
	Hypothalassiidae	*Hypothalassia*	1					0%
	Hypothalassiidae		**1**	**0**	**0**	**0**	**0**	0%
	Chasmocarcinidae	*Camatopsis*	2	1			1	50%
	Chasmocarcinidae	*Megaesthesius*	1	1				0%
	Chasmocarcinidae		**3**	**1**	**0**	**0**	**0**	**0%**
	Euryplacidae	*Heteroplax*	2				2	100%
	Euryplacidae		**2**	**0**	**0**	**0**	**2**	**100%**
	Goneplacidae	*Carcinoplax*	2	1			2	100%
	Goneplacidae	*Notonyx*	1	1				0%
	Goneplacidae	*Psopheticus*	1	1				0%
	Goneplacidae	*Pycnoplax*	5			1	3	60%
	Goneplacidae		**9**	**2**	**0**	**1**	**5**	56%

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
Brachyura (cont.)	Mathildellidae	*Mathildella*	1	1				0%
	Mathildellidae	*Platypilumnus*	1			1		0%
	Mathildellidae	*Mathildellid*	1				1	100%
	Mathildellidae		**3**	**1**	**0**	**1**	**1**	**33%**
	Hexapodidae	*Hexaplax*	1	1				0%
	Hexapodidae		**1**	**1**	**0**	**0**	**0**	0%
	Iphiculidae	*Iphiculus*	1			1		0%
	Iphiculidae		**1**	**0**	**0**	**1**	**0**	0%
	Leucosiidae	*Arcania*	8	2	2	1	2	25%
	Leucosiidae	*Ebalia*	4				3	75%
	Leucosiidae	*Leucosia*	4			1	1	25%
	Leucosiidae	*Merocryptus*	1					0%
	Leucosiidae	*Myra*	3				2	67%
	Leucosiidae	*Myrine*	1			1		0%
	Leucosiidae	*Oreophorus*	1	1				0%
	Leucosiidae	*Parilia*	1	1				0%
	Leucosiidae	*Philyra*	1				1	100%
	Leucosiidae	*Randallia*	6	1			4	67%
	Leucosiidae		**30**	**5**	**2**	**3**	**13**	43%
	Epialtidae	*Austrolibinia*	1			1		0%
	Epialtidae	*Griffinia*	1					0%
	Epialtidae	*Hyastenus*	1			1		0%
	Epialtidae	*Lahaina*	1					0%
	Epialtidae	*Naxioides*	3		3			0%
	Epialtidae	*Phalangipus*	2			1		0%
	Epialtidae	*Rochinia*	5	1	1		3	60%
	Epialtidae		**14**	**1**	**4**	**3**	**3**	**21%**
	Hymenosomatidae	*Halicarcinus*	1				1	100%
	Hymenosomatidae	*Trigonoplax*	1					0%
	Hymenosomatidae		**2**	**0**	**0**	**0**	**1**	50%
	Inachidae	*Achaeus*	5			1	1	20%
	Inachidae	*Camposcia*	1			1		0%
	Inachidae	*Cyrtomaia*	2					0%
	Inachidae	*Dorhynchus*	1					0%
	Inachidae	*Dumea*	1					0%
	Inachidae	*Ephippias*	1			1		0%
	Inachidae	*Grypachaeus*	1	1				0%
	Inachidae	*Oncinopus*	3		1		1	33%
	Inachidae	*Physachaeus*	1	1				0%
	Inachidae	*Platymaia*	2			1		0%
	Inachidae	*Pleistacantha*	1		1			0%
	Inachidae	*Sunipea*	1	1				0%
	Inachidae		**20**	**3**	**2**	**4**	**2**	**10%**
	Majidae	*Entomonyx*	2	1		1		0%
	Majidae	*Leptomithrax*	4			1	2	50%
	Majidae	*Maja*	3	3				0%
	Majidae	*Planotergum*	1					0%
	Majidae	*Prismatopus*	3	1			1	33%
	Majidae	*Majid*	1				1	100%
	Majidae		**13**	**5**	**0**	**2**	**3**	23%
	Palicidae	*Micropalicus*	1			1		0%
	Palicidae	*Neopalicus*	1			1		0%
	Palicidae	*Paliculus*	1		1			0%
	Palicidae	*Parapalicus*	1				1	100%

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
Brachyura (cont.)	Palicidae	*Pseudopalicus*	1					0%
	Palicidae		**5**	**0**	**1**	**2**	**1**	20%
	Parthenopidae	*Aulacolambrus*	1				1	100%
	Parthenopidae	*Garthambrus*	2				2	100%
	Parthenopidae	*Parthenope*	1			1		0%
	Parthenopidae	*Platylambrus*	1		1			0%
	Parthenopidae	*Pseudolambrus*	1				1	100%
	Parthenopidae	*Rhinolambrus*	1				1	100%
	Parthenopidae	*Thyrolambrus*	1	1				0%
	Parthenopidae	*Parthenopid*	1				1	100%
	Parthenopidae		**9**	**1**	**1**	**1**	**6**	67%
	Pilumnidae	*Bathypilumnus*	1		1			0%
	Pilumnidae	*Caecopilumnus*	1	1				0%
	Pilumnidae	*Cryptolutea*	1			1		0%
	Pilumnidae	*Eumedonus*	1					0%
	Pilumnidae	*Heteropilumnus*	1				1	100%
	Pilumnidae	*Lophoplax*	1				1	100%
	Pilumnidae	*Mertonia*	1	1				0%
	Pilumnidae	*Paraselwynia*	1				1	100%
	Pilumnidae	*Pilumnopeus*	1				1	100%
	Pilumnidae	*Pilumnus*	11	4	1	1	6	55%
	Pilumnidae	*Pilumnid*	1					0%
	Pilumnidae		**21**	**6**	**2**	**2**	**10**	48%
	Portunidae	*Charybdis*	2	1	1			0%
	Portunidae	*Echinolatus*	1			1		0%
	Portunidae	*Libystes*	1		1			0%
	Portunidae	*Liocarcinus*	1					0%
	Portunidae	*Lissocarcinus*	1					0%
	Portunidae	*Lupocyclus*	3	1	1		1	33%
	Portunidae	*Nectocarcinus*	1					0%
	Portunidae	*Ovalipes*	2		2			0%
	Portunidae	*Parathranites*	2	1			1	50%
	Portunidae	*Portunus*	7	4			1	14%
	Portunidae	*Thalamita*	3		1	1		0%
	Portunidae	*Portunid*	1				1	100%
	Portunidae		**25**	**7**	**6**	**2**	**4**	16%
	Retroplumidae	*Retropluma*	1	1				0%
	Retroplumidae		**1**	**1**	**0**	**0**	**0**	0%
	Trapeziidae	*Quadrella*	1	1				0%
	Trapeziidae		**1**	**1**	**0**	**0**	**0**	0%
	Panopeidae	*Homoioplax*	1			1		0%
	Panopeidae		**1**	**0**	**0**	**1**	**0**	0%
	Xanthidae	*Actaea*	2					0%
	Xanthidae	*Atergatopsis*	1	1				0%
	Xanthidae	*Calvactaea*	1					0%
	Xanthidae	*Chlorodiella*	1					0%
	Xanthidae	*Demania*	1		1			0%
	Xanthidae	*Medaeus*	1				1	100%
	Xanthidae	*Monodaeus*	1	1				0%
	Xanthidae	*Nanocassiope*	2				2	100%
	Xanthidae	*Novactaea*	1					0%
	Xanthidae	*Palapedia*	2	1				0%
	Xanthidae	*Paractaea*	2				1	50%
	Xanthidae	*Paraxanthias*	1				1	100%

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
	Xanthidae	*Paraxanthodes*	1	1				0%
	Xanthidae	*Platypodia*	1	1				0%
	Xanthidae		**18**	**5**	**1**	**0**	**5**	28%
Brachyura	**all taxa**		**227**	**47**	**22**	**33**	**70**	31%
Caridea	Alpheidae	*Alpheopsis*	3				3	100%
	Alpheidae	*Alpheus*	8				4	50%
	Alpheidae	*Synalpheus*	7					0%
	Alpheidae		**18**	**0**	**0**	**0**	**7**	39%
	Anchistioididae	*Anchistioides*	1			1		0%
	Anchistioididae		**1**	**0**	**0**	**1**	**0**	0%
	Bathypalaemonellidae	*Bathypalaemonella*	1			1		0%
	Bathypalaemonellidae		**1**	**0**	**0**	**1**	**0**	0%
	Bresiliidae	*Discias*	1		1			0%
	Bresiliidae		**1**	**0**	**1**	**0**	**0**	0%
	Campylonotidae	*Campylonotus*	1					0%
	Campylonotidae		**1**	**0**	**0**	**0**	**0**	0%
	Crangonidae	*Aegaeon*	1		1			0%
	Crangonidae	*Metacrangon*	1				1	100%
	Crangonidae	*Parapontocaris*	2	2				0%
	Crangonidae	*Parapontophilus*	1	1				0%
	Crangonidae	*Philocheras*	2				2	100%
	Crangonidae	*Pontocaris*	2	1	1			0%
	Crangonidae	*Sabinea*	1				1	100%
	Crangonidae		**10**	**4**	**2**	**0**	**4**	40%
	Eugonatonotidae	*Eugonatonotus*	1			1		0%
	Eugonatonotidae		**1**	**0**	**0**	**1**	**0**	0%
	Glyphocrangonidae	*Glyphocrangon*	4	1		1	1	25%
	Glyphocrangonidae		**4**	**1**	**0**	**1**	**1**	25%
	Hippolytidae	*Eualus*	1		1			0%
	Hippolytidae	*Lebbeus*	1				1	100%
	Hippolytidae	*Lysmata*	1			1		0%
	Hippolytidae	*Merhippolyte*	1		1			0%
	Hippolytidae	*Tozeuma*	1		1			0%
	Hippolytidae		**5**	**0**	**3**	**1**	**1**	20%
	Nematocarcinidae	*Nematocarcinus*	4			1	1	25%
	Nematocarcinidae		**4**	**0**	**0**	**1**	**1**	25%
	Oplophoridae	*Acanthephyra*	3	1		1		0%
	Oplophoridae	*Janicella*	1			1		0%
	Oplophoridae	*Oplophorus*	2					0%
	Oplophoridae	*Systellaspis*	1					0%
	Oplophoridae		**7**	**1**	**0**	**2**	**0**	0%
	Palaemonidae	*Periclimenes*	1	1				0%
	Palaemonidae	*Palaemonid*	1				1	100%
	Palaemonidae		**2**	**1**	**0**	**0**	**1**	50%
	Pandalidae	*Chlorotocella*	1					0%
	Pandalidae	*Chlorotocus*	1				1	100%
	Pandalidae	*Heterocarpoides*	1	1				0%
	Pandalidae	*Heterocarpus*	5		1	2	1	20%
	Pandalidae	*Plesionika*	12	2	2	6	2	17%
	Pandalidae	*Procletes*	1			1		0%
	Pandalidae		**21**	**3**	**3**	**9**	**4**	19%
	Pasiphaeidae	*Alainopasiphaea*	1					0%

Infraorder	Family	Genus	Total species	New Australian species	New WA species	New record for S WA	New species	% new spp
Caridea (cont.)	Pasiphaeidae	*Eupasiphae*	1				1	100%
	Pasiphaeidae	*Leptochela*	1		1			0%
	Pasiphaeidae	*Pasiphaea*	3		1			0%
	Pasiphaeidae		**6**	**0**	**2**	**0**	**1**	17%
	Processidae	*Hayashidonus*	1	1				0%
	Processidae	*Processa*	2	1	1			0%
	Processidae		**3**	**2**	**1**	**0**	**0**	0%
	Rhynchocinetidae	*Rhynchocinetes*	2		2			0%
	Rhynchocinetidae		**2**	**0**	**2**	**0**	**0**	0%
	Thalassocarididae	*Thalassocaris*	1	1				0%
	Thalassocarididae		**1**	**1**	**0**	**0**	**0**	0%
Caridea	**all taxa**		**88**	**13**	**14**	**17**	**20**	23%
Polychelata	Polychelidae	*Pentacheles*	1				0	0%
	Polychelidae	*Polycheles*	4	1	1		0	0%
	Polychelidae		**5**	**1**	**1**	**0**	**0**	0%
Polychelata	**all taxa**		**5**	**1**	**1**	**0**	**0**	0%
Stenopodidea	Stenopodidae	*Engystenopus*	1	1				0%
	Stenopodidae	*Odontozona*	1			1	0	0%
	Stenopodidae		**2**	**1**	**0**	**1**	**0**	0%
Stenopodidea	**all taxa**		**2**	**1**	**0**	**1**	**0**	0%
Thalassinidea	Axiidae	*Acanthaxius*	1				1	100%
	Axiidae	*Axiopsis*	2	1			1	50%
	Axiidae	*Bouvieraxius*	1				1	100%
	Axiidae	*Calocarides*	2				2	100%
	Axiidae	*Dorphinaxius*	1				1	100%
	Axiidae	*Marianaxius*	1				1	100%
	Axiidae	*Axiid*	2				2	100%
	Axiidae		**10**	**1**	**0**	**0**	**9**	90%
	Callianassidae	*Callianassa*	5				5	100%
	Callianassidae	*Corallianassa*	1				1	100%
	Callianassidae		**6**	**0**	**0**	**0**	**6**	100%
	Calocarididae	*Ambiaxius*	1				1	100%
	Calocarididae		**1**	**0**	**0**	**0**	**1**	100%
	Gourretiidae	*Lipkecallianassa*	1				1	100%
	Gourretiidae		**1**	**0**	**0**	**0**	**1**	100%
	Micheleidae	*Michelea*	1				1	100%
	Micheleidae	*Tethisea*	1				1	100%
	Micheleidae		**2**	**0**	**0**	**0**	**2**	100%
	Upogebiidae	*Upogebia*	3				0	0%
	Upogebiidae		**3**	**0**	**0**	**0**	**0**	0%
Thalassinidea	**all taxa**		**23**	**1**	**0**	**0**	**19**	83%
ALL DECAPODA			**524**	**88**	**62**	**69**	**175**	**33%**

Dendrobranchiata – prawns

The Australian fauna is diverse and well studied. Many records are of benthopelagic species. Pérez Farfante & Kensley (1997) provided keys to families and genera but this work is supplemented by family and genus treatments. Forty-four species were recorded. Ten were new records for Australia, 11 range extensions along the WA coast to known Australian species and three probable new species.

Aristeidae

Of five species one is new to Australia and one to WA (Dall, 2001).

Aristeus cf. ***mabahissae*** Ramadan, 1938
MoV sp. 5301
Records: 4 specimens, 29°03´S–35°31´S, 1000–1076 m
Distribution: Indo-West Pacific
Reference: figure of *A. mabahissae* from Dall (2001)

Aristeus cf. ***pallicauda*** Komai, 1993
MoV sp. 5320
Records: 5 specimens, 21°58´S–22°04´S, 170–387 m
Distribution: Japan; first record for Australia if this species
Reference: figure of *A. pallicauda* from Dall (2001)

Aristeus semidentatus Bate, 1881
MoV sp. 5467
Records: 2 specimens, 31°57´S, 928–1170 m
Distribution: Indo-West Pacific; first record for WA
Reference: Dall (2001) [photo below]

Aristeus virilis (Bate, 1881)
MoV sp. 5465
Records: 8 specimens, 33°02´S–35°16´S, 978–1021 m
Distribution: Indo-West Pacific; first record for S WA
Reference: Dall (2001)

Pseudaristeus sibogae (De Man, 1911)
MoV sp. 5468
Records: 3 specimens, 21°58´S–22°00´S, 726–1010 m
Distribution: Indian Ocean, S Australia
Reference: Dall (2001)

Benthesicymidae

A single well-known species was recorded (Dall, 2001).

Benthesicymus investigatoris Alcock & Anderson, 1899
MoV sp. 5469
Records: 3 specimens, 21°56´S–29°03´S, 1000–1056 m
Distribution: Indo-West Pacific
Reference: Dall (2001)

Penaeidae

Of 16 species identified, only five could be confidently assigned to known Australia species. Six were new records for Australia (if not new species) and two probable new species. Crosnier (1985; 1991) provided key references for the most diverse genera and Grey et al. (1983) to the larger prawns.

Metapenaeopsis crassimana Racek & Dall, , 1965
MoV sp. 5479
Records: 40 specimens, 24°37´S, 100 m ✓
Distribution: N, W and S Australia
Reference: Grey et al. (1983)

Metapenaeopsis aff. ***difficilis*** Crosnier, 1991
MoV sp. 5460
Records: 17 specimens, 21°58´S, 107 m
Distribution: Philippines, New Caledonia; new Australian record if correctly identified
Reference: figure of *M. difficilis* from Crosnier (1991)

Metapenaeopsis aff. ***vaillanti*** (Nobili, 1904)
MoV sp. 5462
Records: 1 specimen, 24°37´S, 100 m
Distribution: Red Sea; new Australian record if correctly identified
Reference: figure of *M. vaillanti* from Crosnier (1991)

Metapenaeopsis rosea Racek & Dall, 1965
MoV sp. 5480
Records: 28 specimens, 20°59´S–24°37´S, 100–170 m ✓
Distribution: N and E Australia; new record for WA
Reference: Grey et al. (1983)

Metapenaeopsis velutina (Dana, 1852)
MoV sp. 5476
Records: numerous specimens, 22°50´S–27°03´S, 100 m
Distribution: Indo-West Pacific including Australia
Reference: Crosnier (1991) [photo below]

Metapenaeopsis sp. MoV 5458
MoV sp. 5458
Records: 9 specimens, 22°50´S–35°11´S, 100–402 m
Distribution: possible new species close to *M. commensalis*
Reference: Crosnier (1991)

Metapenaeopsis sp. MoV 5459
MoV sp. 5459
Records: 33 specimens, 21°59´S–22°04´S, 165–206 m
Distribution: possible new species
Reference: Crosnier (1991)

Parapenaeus fissuroides Crosnier, 1986
MoV sp. 5307
Records: 4 specimens, 21°59´S–22°04´S, 165–206 m
Distribution: Indo-West Pacific; new record for Australia
Reference: Crosnier (1985)

Parapenaeus fissurus (Bate, 1881)
MoV sp. 5478
Records: 9 specimens, 21°58´S–27°55´S, 106–253 m
Distribution: W Pacific; new record for Australia
Reference: Crosnier (1985)

Parapenaeus longipes Alcock, 1905
MoV sp. 5308
Records: 1 specimen, 22°04´S, 206–201 m
Distribution: W Pacific; new record for Australia
Reference: Crosnier (1985)

Parapenaeus murrayi Ramadan, 1938
MoV sp. 5481
Records: 24 specimens, 21°00´S–28°59´S, 324–411 m
Distribution: W Pacific; new record for Australia
Reference: Crosnier (1985)

Parapenaeus sextuberculatus Kubo, 1949
MoV sp. 5482
Records: 8 specimens, 22°04´S–24°33´S, 388–399 m
Distribution: Indo-West Pacific including E Australia; new record for WA
Reference: Crosnier (1985)

Penaeopsis sp. MoV 5466
Records: 2 specimens, 21°58´S, 356–324 m
Distribution: new species
Reference: Pérez Farfante (1980)

Penaeopsis sp. MoV 5471
Records: 15 specimens, 21°00´S–21°58´S, 373–408 m
Distribution: new species
Reference: Pérez Farfante (1980)

Penaeus (Melicertus) marginatus Randall, 1840
MoV sp. 4883
Records: 1 specimen, 21°59´S, 166 m
Distribution: Indo-West Pacific; including N Australia
Reference: Grey et al. (1983)

Trachypenaeus (Trachysalambria) curvirostris (Stimpson, 1860)
MoV sp. 5309
Records: 3 specimens, 22°04´S–27°48´S, 101–123 m ✓
Distribution: Indo-West Pacific including Australia
Reference: Grey et al. (1983)

Sergestidae

Two of the four species could not be identified because the specimens were incomplete. The third is a known Australian species and the fourth a new Australian record. Vereshchaka (2000) was consulted for *Sergia*.

Sergestes sp. MoV 5453
Records: 1 specimen, 28°57´S, 678–686 m
Distribution: incomplete specimen
Reference: Pérez Farfante and Kensley (1997)

Sergestes sp. MoV 5454
Records: 2 specimens, 28°57´S–35°31´S, 678–1110 m
Distribution: incomplete specimen
Reference: Pérez Farfante and Kensley (1997)

Sergia fulgens (Hansen, 1919)
MoV sp. 5470
Records: 7 specimens, 21°58´S, 373–732 m
Distribution: Indonesia; new Australian record
Reference: Vereshchaka (2000)

Sergia prehensilis (Bate, 1881)
MoV sp. 5311
Records: 1 specimen, 35°04´S, 379 m
Distribution: cosmopolitan
Reference: Vereshchaka (2000)

Sicyonidae

Of four species, two are new Australian records and another a probable new species (Crosnier, 2003).

Sicyonia inflexa (Kubo, 1949)
MoV sp. 5312
Records: 2 specimens, 27°55´S–28°57´S, 252–686 m
Distribution: Indo-West Pacific including N WA
Reference: one of several figures in Crosnier (2003)

Sicyonia japonica Balss, 1914
MoV sp. 5313
Records: 5 specimens, 21°58´S, 107 m
Distribution: Indo-West Pacific; new Australian record
Reference: Crosnier (2003)

Sicyonia vitulans (Kubo, 1949)
MoV sp. 5314
Records: 2 specimens, 24°37´S, 100 m
Distribution: Indo-West Pacific; new Australian record
Reference: Crosnier (2003)

Sicyonia sp. MoV 5455
MoV sp. 5455
Records: 1 specimen, 35°20´S, 213 m
Distribution: new species
Reference: Crosnier (2003)

Solenoceridae

All 14 species were identified using Dall (1999). All had been previously recorded from northern Australia but the southern or western ranges of nine were extended.

Hadropenaeus lucasii (Bate, 1881)
MoV sp. 5315
Records: numerous specimens, 21°00´S–35°10´S, 95–528 m
Distribution: Indo-West Pacific including Australia; first record for S WA
Reference: Dall (1999)

Haliporoides sibogae (De Man, 1907)
MoV sp. 5316
Records: numerous specimens, 21°58´S–27°08´S, 356–408 m
Distribution: Indo-West Pacific including Australia
Reference: Dall (1999) [photo below]

Haliporus taprobanensis Alcock & Anderson, 1899
MoV sp. 5317
Records: 2 specimens, 21°58´S, 690–732 m
Distribution: Indo-West Pacific; first record for S WA
Reference: Dall (1999)

Hymenopenaeus halli Bruce, 1966
MoV sp. 5461
Records: 2 specimens, 21°58´S–22°00´S, 373–1085 m
Distribution: Indo-West Pacific including E Australia; first record for WA
Reference: Dall (1999)

Hymenopenaeus propinquus (De Man, 1907)
MoV sp. 5319
Records: 3 specimens, 21°58´S–22°00´S, 658–754 m
Distribution: Indo-West Pacific including Australia
Reference: Dall (1999)

Solenocera annectens (Wood-Mason, 1891)
MoV sp. 5320
Records: 1 specimen, 21°57S, 690–702 m
Distribution: Philippines, Indonesia, WA; first record for S WA
Reference: Dall (1999)

Solenocera barunajaya Crosnier, 1994
MoV sp. 5463
Records: 14 specimens, 21°58´S–29°52´S, 373–414 m
Distribution: N WA and Arafura Sea; first record for S WA
Reference: Dall (1999)

Solenocera choprai Nataraj, 1945
MoV sp. 5324
Records: 1 specimen, 22°04´S, 102 m
Distribution: Indo-West Pacific including N Australia`; first record for S WA
Reference: Dall (1999)

Solenocera comata Stebbing, 1915
MoV sp. 5324
Records: 36 specimens, 24°33´S–24°33´S, 368–404 m ✓
Distribution: Indo-West Pacific including N WA; first record for S WA
Reference: Dall (1999)

Solenocera koelbeli De Man, 1911
MoV sp. 5326
Records: 1 specimen, 21°58´S, 177–170 m
Distribution: Indo-West Pacific including N WA
Reference: Dall (1999)

Solenocera melantho De Man, 1907
MoV sp. 5464
Records: 3 specimens, 21°58´S, 177–170 m
Distribution: Indo-West Pacific including N WA
Reference: Dall (1999)

Solenocera pectinata (Bate, 1880)
MoV sp. 5327
Records: 5 specimens, 20°59´S, 100 m
Distribution: Indo-West Pacific including Australia; first record for WA
Reference: Dall (1999)

Solenocera pectinulata Kubo, 1949
MoV sp. 5328
Records: numerous specimens, 21°59´S–22°04´S, 100–396 m
Distribution: Indo-West Pacific including Australia
Reference: Dall (1999)

Solenocera rathbuni Ramadan, 1938
MoV sp. 5330
Records: 34 specimens, 21°59´S–24°01´S, 100–166 m ✓
Distribution: Indo-West Pacific including N WA; first record for S WA
Reference: Dall (1999) [photo below]

Achelata – lobsters and bugs

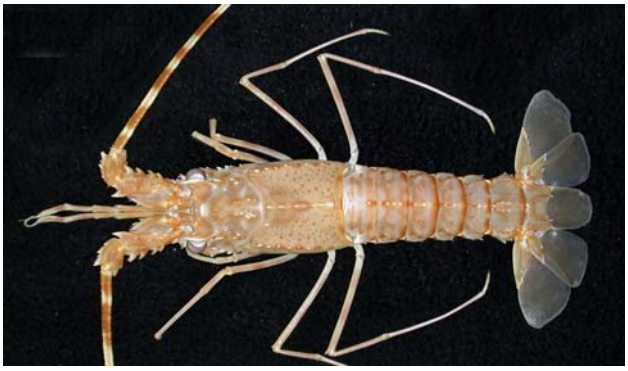
These two families have been previously included in the Infraorder Palinura. We use the classification proposed by Ahyong and O'Meally (2004) and followed by Poore (2004).

Palinuridae

The sampling was not designed to catch lobsters but one species was taken. Its identification was confirmed with reference to Holthuis (1991).

Puerulus angulatus (Bate, 1888)

MoV sp. 4972
Records: 6 specimens, 21°58´S–22°50´S, 324–430 m ✓
Distribution: Indo-West Pacific including N Australia; new record for S WA
References: Holthuis (1991); Griffin & Stoddart (1995) [photo below]



Scyllaridae

Two species of commercially-important bugs (*Ibacus* spp.) and two of smaller scyllarids were recorded, all identifiable from Holthuis (1985; 2002) and Poore (2004).

Crenarctus crenatus (Whitelegge, 1900)

MoV sp. 4974
Records: 1 specimen, 35°10´S, 99 m
Distribution: S Australia
Reference: Holthuis (2002) [photo below]

Ibacus alticrenatus Bate, 1888

MoV sp. 3873
Records: many specimens, 21°58´S–35°04´S, 324–490 m ✓
Distribution: S Australia, common
References: Holthuis (1985; 2002) [photos below]

Ibacus peronii Leach, 1815

MoV sp. 1771
Records: 1 specimen, 24°01.43´S, 100 m
Distribution: S Australia
Reference: Poore (2004)

Remiarctus bertholdii (Paulson, 1875)

MoV sp. 4976
Records: 16 specimens, 20°59´S–22°04´S, 100–166 m ✓
Distribution: Indo-West Pacific including N Australia; new record for S WA
Reference: Holthuis (2002) [photo below]

Anomura – Hermit crabs, stone crabs, frog crabs and squat lobsters

Families of this diverse group are listed in three superfamilies, Galatheoidea, Hippoidea and Paguroidea. Species number 127.

Superfamily Galatheoidea

Three families were represented by 56 species. Twenty (36%) are certain or probably new species. Nine are new records for Australia of species previous reported for the Indo-West Pacific and 13 new for WA or more southern records of WA species.

Chirostylidae

Five species were separated using Ahyong and Poore (2004a) and Baba (2005). One is a probable new species.

Uroptychus australis (Henderson, 1885)

MoV sp. 5249
Records: 4 specimens, 22°00´S–35°26´S, 658–988 m
Distribution: New Zealand, Indonesia, E Australia; first record for WA
Reference: Ahyong and Poore (2004a) [photo below]

Uroptychus flindersi Ahyong & Poore, 2004

MoV sp. 5447
Records: 2 specimens, 35°12´S, 431–408 m
Distribution: S Australia
Reference: Ahyong and Poore (2004a) [photo below]

Uroptychus gracilimanus (Henderson, 1885)

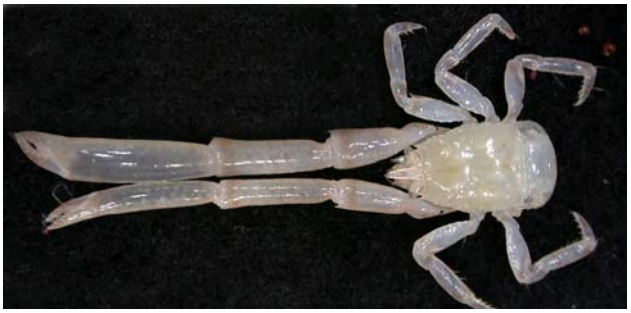
MoV sp. 5248
Records: 10 specimens, 33°00´S, 397–421 m
Distribution: Indo-West Pacific including E Australia; first record for WA
Reference: Ahyong and Poore (2004a) [photo below]

Uroptychus hesperius Ahyong & Poore, 2004

MoV sp. 5206
Records: 1 specimen, 35°26´S, 915 m
Distribution: S WA
Reference: Ahyong and Poore (2004a)

Uroptychus sp. MoV 5181

Records: 5 specimens, 27°48´S–29°52´S, 401–431 m
Distribution: new species
Reference: Ahyong and Poore (2004a) [photo below]

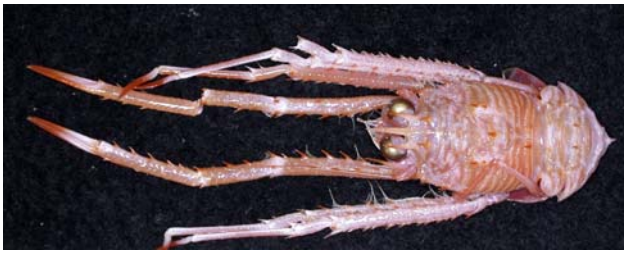


Galatheidae

Forty-five species were represented, of which nine are new records for Australia, ten new for Western Australia and two reported more further south than previously known. Eighteen (40%) are probable new species. Baba (1988; 2005) and Ahyong and Poore (2004b) were the most relevant sources. The number of new species could well be higher if the new range extensions of Indo-West Pacific species are discovered to be new species. The genus *Munida* was richest in species (19 species) *Galathea* and *Munidopsis* with seven species each and *Agononida* with six species.

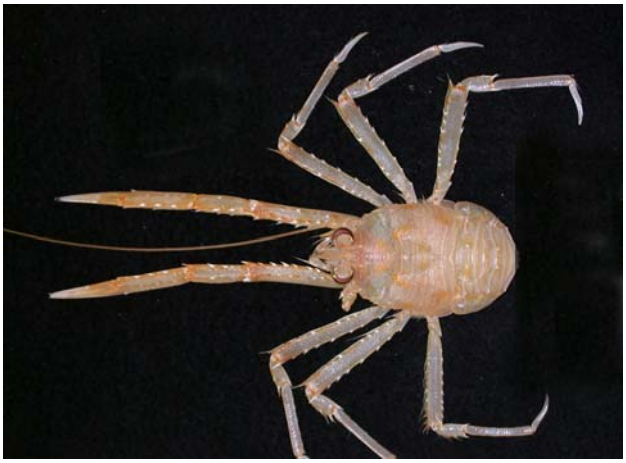
Agononida eminens (Baba, 1988)

MoV sp. 5201
Records: 8 specimens, 21°58´S–22°00´S, 658–754 m ✓
Distribution: West Pacific including E Australia; first record for WA
Reference: Baba (2005) [photo below]



Agononida incerta (Henderson, 1888)

MoV sp. 5260
Records: many specimens, 21°58´S–31°55´S, 324–754 m ✓
Distribution: Indo-West Pacific including N Australia; first record for S WA
Reference: Ahyong and Poore (2004b) [photo below]



Agononida pilosimanus (Baba, 1969)

MoV sp. 5208
Records: 9 specimens, 27°08´S–31°59´S, 414–508 m
Distribution: West Pacific including Qld; first record for WA
Reference: Baba (2005)

Agononida similis (Baba, 1988)

MoV sp. 5205
Records: 2 specimens, 21°58´S, 382 m
Distribution: Philippines; first record for Australia
Reference: Baba (2005)

Agononida sp. aff. ***incerta*** (Henderson, 1888)

MoV sp. 5207
Records: 5 specimens, 21°00´S–22°50.48´S, 399–430 m ✓
Distribution: new species
Reference: Ahyong and Poore (2004b)

Agononida sp. aff. ***sabatesae*** (Macpherson, 1994)

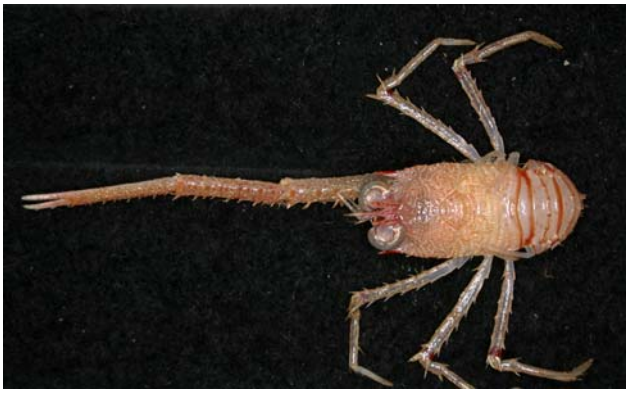
MoV sp. 5218
Records: 8 specimens, 31°37´S–31°59´S, 364–508 m
Distribution: new species close to New Caledonian species
Reference: Macpherson (1994)

Allogalathea elegans (Adams & White, 1848)

MoV sp. 5350
Records: 2 specimens, 22°04´S–24°37´S, 100–102 m
Distribution: Indo-West Pacific including Australia
Reference: Poore (2004: 231) [photo below]

Enriquea leviantennata (Baba, 1988)

MoV sp. 5202
Records: 3 specimens, 21°58´S–22°04´S, 373–391 m
Distribution: Indonesia, N and NE Australia; first record for WA
Reference: Baba (1988; 2005) [photo below]



Galathea aff. ***orientalis*** Stimpson, 1858

MoV sp. 5182
Records: 10 specimens, 22°50´S–27°03´S, 100–106 m
Distribution: new species; keys to *G. orientalis* but record for WA doubted by Baba
Reference: Haig (1974); Baba (2005)

Galathea amboinensis De Man, 1888

MoV sp. 5258
Records: 4 specimens, 24°01´S–27°48´S, 96–101 m
Distribution: Indonesia, N Qld; first record for WA
Reference: Baba (1988) [photo below]

Galathea balssi Miyake & Baba, 1964

MoV sp. 5273
Records: 3 specimens, 20°59´S–22°37´S, 100–382 m
Distribution: West Pacific including Qld; first record for WA
Reference: Baba (2005)

Galathea consobrina De Man, 1902

MoV sp. 5257
Records: 1 specimen, 34°53´S, 100–95 m ✓
Distribution: Philippines; first record for Australia
Reference: Baba (1988)

Galathea sp. MoV 5179

Records: 19 specimens, 20°59´S, 100 m
Distribution: similar to *G. multilineata* from Japan–Philippines
Reference: Baba (2005)

Galathea sp. MoV 5209

Records: 2 specimens, 24°01´S, 100 m
Distribution: new species
Reference: Baba (2005)

Galathea sp. MoV 5244

Records: 1 specimen, 22°50´S, 100 m
Distribution: new species
Reference: Baba (2005)

Lauriea gardineri (Laurie, 1926)

MoV sp. 5259
Records: 2 specimens, 22°50´S–27°03´S, 100–382 m
Distribution: Indo-West Pacific including WA
Reference: Baba (2005), Osawa and Okuno (2004)

Munida andamanica Alcock, 1894

MoV sp. 5212
Records: 1 specimen, 21°00´S, 399–408 m
Distribution: Indo-West Pacific including N Qld; first record for WA
Reference: Baba (2005)

Munida aprosoma Ahyong & Poore, 2004

MoV sp. 5197
Records: 8 specimens, 29°00´S–31°57´S, 700–1170 m
Distribution: NE Australia; first record for WA
Reference: Ahyong and Poore (2004b) [photo below]

Munida babai Tirmizi & Javed, 1976

MoV sp. 5178
Records: 12 specimens, 20°59´S–21°59´S, 100–177 m ✓
Distribution: South Africa–Malaysia; first record for Australia
Reference: Baba (1988), Tirmizi and Javed (1976)

Munida disgrega Baba, 2005

MoV sp. 5210
Records: 37 specimens, 35°22´S–35°22´S, 408–680 m
Distribution: SE Australia; first record for WA
Reference: Baba (2005)

Munida haswelli Henderson, 1885

MoV sp. 3859
Records: many specimens, 21°59´S–35°11´S, 130–728 m ✓
Distribution: S Australia
Reference: Poore (2004) [photo below]

Munida heteracantha Ortmann, 1892

MoV sp. 5196
Records: 3 specimens, 21°58´S, 177–170 m
Distribution: Indo-West Pacific including Qld; first record for WA
Reference: Baba (1988) as *M. exigua*

Munida roshanei Tirmizi, 1966

MoV sp. 5180
Records: 31 specimens, 20°59´S–27°48´S, 93–123 m ✓
Distribution: Aden–Andaman Sea; first record for Australia
Reference: Baba (1988)

Munida rubridigitalis Baba, 1994

MoV sp. 5211
Records: 9 specimens, 21°00´S–24°33´S, 396–411 m ✓
Distribution: N Qld; first record for WA
Reference: Baba (1994) [photo below]

Munida aff. ***amathea*** Macpherson, 1995

MoV sp. 5203
Records: 1 specimen, 27°48´S, 431–416 m
Distribution: probably new species like *M. amathea* from Tuamotu
Reference: Baba (2005)

Munida aff. ***rubiesi*** Macpherson, 1991

MoV sp. 5183
Records: 23 specimens, 27°56´S–31°36´S, 329–704 m
Distribution: probably new species like *M. rubiesi* from Gulf of Aden
Reference: Baba (2005) [photo below]

Munida aff. ***volantis*** Macpherson, 2004

MoV sp. 5204
Records: 12 specimens, 27°55´S–31°55´S, 180–232 m
Distribution: probably new species like *M. volantis* from Fiji
Reference: Baba (2005) [photo below]

Munida sp. MoV 5176

Records: 3 specimens, 20°59´S, 101–100 m
Distribution: probably new species like *M. janetae* from E Indian Ocean
Reference: Baba (2005)

Munida sp. MoV 5199

Records: 1 specimen, 35°26´S, 912–922 m
Distribution: probably new species like *M. nesiotes* from Seychelles
Reference: Baba (2005) [photo below]

Munida sp. MoV 5200

Records: 1 specimen, 33°00´S, 421–414 m
Distribution: probably new species like *M. semoni* from West Pacific
Reference: Baba (2005) [photo next page]

Munida sp. MoV 5214

Records: 20 specimens, 22°04´S, 206–201 m ✓
Distribution: new species like *M. babai* from South Africa–Malaysia
Reference: Baba (2005)

Munida sp. MoV 5215

Records: 2 specimens, 21°58´S, 356–324 m
Distribution: new species like *M. shaula* from W Indian Ocean
Reference: Baba (2005)

Munida sp. MoV 5217

Records: 1 specimen, 22°04´S, 399–387 m
Distribution: new species
Reference: Baba (2005)

Munida sp. MoV 5245

MoV sp. 5245
Records: 1 specimens, 27°03´S, 106–106 m
Distribution: new species, incomplete specimen
Reference: Baba (2005)

Munida sp. MoV 5526

Records: 1 specimen, 22°004´S, 658–754 m
Distribution: new species near *M. andamanica*
Reference: Baba (2005)

Munidopsis andamanica MacGilchrist, 1905

MoV sp. 5253
Records: 8 specimens, 21°58´S, 726–732 m
Distribution: West Pacific, Indonesia; first record for Australia
Reference: Baba (2005: 284) [photo below]

Munidopsis crenatirostris Baba, 1988

MoV sp. 5251
Records: 17 specimens, 21°00´S–35°12´S, 396–754 m ✓
Distribution: Philippines; first record for Australia
Reference: Baba (2005) [photo below]

Munidopsis cylindrophthalma (Alcock, 1894)

MoV sp. 5255
Records: 1 specimen, 21°58´S, 726–732 m
Distribution: Indo-West Pacific; first record for Australia
Reference: Baba (2005), Macpherson (2007) for colour photo

Munidopsis dasypus Alcock, 1894

MoV sp. 5252
Records: 4 specimens, 29°03´S, 1000–1037 m
Distribution: Indo-West Pacific including N WA; first record for S WA
Reference: Baba and Poore (2002: 50, WA record) [photo below]

Munidopsis kensleyi Ahyong & Poore, 2004

MoV sp. 5254
Records: 1 specimens, 21°55´S, 1260–1295 m
Distribution: S Australia
Reference: Baba and Poore (2002: as *M. dasypus*), Ahyong & Baba (Ahyong and Poore, 2004c)

Munidopsis levis (Alcock & Anderson, 1894)

MoV sp. 5256
Records: 1 specimen, 21°58´S, 726–732 m ✓
Distribution: Andaman Sea, Philippines; first record for Australia
Reference: Baba (2005)

Munidopsis serricornis (Lovén, 1852)

MoV sp. 2677
Records: 1 specimen, 35°26´S, 900–915 m
Distribution: Indo-West Pacific including S Australia
Reference: Baba (2005), Baba and Poore (2002)

Paramunida stichas Macpherson, 1993

MoV sp. 5213
Records: 11 specimens, 23°59´S–24°33´S, 388–404 m
Distribution: Indonesia, New Caledonia; first record for Australia
Reference: Macpherson (1993)

Phylladiorhynchus pusillus (Henderson, 1885)

MoV sp. 0091
Records: 31 specimens, 23°59´S–35°10´S, 95–439 m
Distribution: Indo-West Pacific including S Australia
Reference: Poore (2004) [photo below]

Raymunida sp. MoV 5189

MoV sp. 5189
Records: 2 specimens, 21°57´S–29°48´S, 104–114 m
Distribution: new species
Reference: Macpherson and Machordom (2001) [photo below]

Porcellanidae

Five species were identified using Haig (1965) and an update (Haig, 1981). Only one was problematic, a species previously recorded from WA but possibly misidentified. Another was reported further south than previously known.

Lissoporcellana aff. ***quadrilobata*** (Miers, 1884)

MoV sp. 5226
Records: 12 specimens, 20°59´S, 101–100 m ✓
Distribution: probable new species like *L. quadrilobata*
Reference: Haig (1981)

Pachycheles sculptus (Milne Edwards, 1837)

MoV sp. 5221
Records: 3 specimens, 24°01´S–24°37´S, 101–100 m
Distribution: N WA; first record for S WA
Reference: Haig (1965) [photo below]

Petrolisthes militaris (Heller, 1862)

MoV sp. 5224
Records: 53 specimens, 21°59´S–28°59´S, 100–183 m ✓
Distribution: Indo-West Pacific including SW Australia
Reference: Haig (1965) [photo below]

Petrolisthes scabriculus (Dana, 1852)

MoV sp. 5220
Records: 2 specimens, 27°48.48´S, 96–98 m
Distribution: Indo-West Pacific including SW Australia
Reference: Haig (1965)

Polyonyx biunguiculatus (Dana, 1852)

MoV sp. 5225
Records: 26 specimens, 21°59´S–33°2´S, 95–166 m
Distribution: Indo-West Pacific including WA
Reference: Haig (1965) [photo below]

Porcellanella triloba White, 1851

MoV sp. 5246
Records: 1 specimen, 22°02´S,106 m
Distribution: WA
Reference: Haig (1974)

Superfamily Hippoidea

A single family can be reported, with two species.

Albuneidae

Two species previously reported from WA were collected and identified using Boyko (2002).

Albunea occulatus Boyko, 2002

MoV sp. 5223
Records: 1 specimen, 25°54´S, 100 m
Distribution: WA
Reference: Boyko (2002: 315) [photo below]

Stemonopa insignis Efford & Haig, 1968

MoV sp. 5222
Records: 4 specimens, 24°01´S–25°54´S, 100 m ✓
Distribution: WA
Reference: Boyko (2002: 224) [photo below]

Superfamily Paguroidea

Hermit crabs are notoriously difficult to identify. Although many species have been described the literature is extremely scattered. McLaughlin (2003) has provided keys to families and genera that enabled access to the recent literature. Five families were represented among the 70 species recognised. It is highly probable that a more experienced taxonomist could identify some of the species to a lower level but the absence of both sexes proved an impediment in the many cases of rare taxa.

Diogenidae

Of 19 species, five were identifiable to species and the rest to genus level. One was a new record for Australia and another for WA. None of the recent literature reviewed by Davie (2002) or Poore (2004) proved useful. If this taxonomy is fair, three-quarters of the species discovered are new species.

Calcinus sp. MoV 5268

Records: 1 specimen, 24°37´S, 100 m
Distribution: probable new species
Reference: Morgan (1991: key) [photos below]

Calcinus sp. MoV 5389

Records: 8 specimens, 24°37´S–34°53´S, 95–100 m
Distribution: keys to *C. tropidomanus* Lewinsohn, 1981; new species or new Australian record
Reference: Poupin and McLaughlin (1998) [photo below]

Calcinus sp. MoV 5393

Records: 1 specimen, 27°48´S, 98 m
Distribution: probable new species
Reference: Poupin and McLaughlin (1998)

Calcinus sp. MoV 5396

Records: 1 specimen, 22°04´S, 102 m
Distribution: new species
Reference: Poupin and McLaughlin (1998)

Ciliopagurus cf. ***krempfi*** (Forest, 1952)

MoV sp. 5275
Records: 2 specimens, 22°50´S–29°48´S, 85–100 m
Distribution: new species or new Australian record; difficult to identify from key
Reference: Forest (1995: key) [photo below]

Dardanus sp. MoV 5262

Records: 2 specimens, 22°37´S–35°21´S, 92–382 m
Distribution: probable new species [photo below]

Dardanus sp. MoV 5264

Records: 1 specimen, 22°04´S, 106–101 m
Distribution: probable new species

Dardanus sp. MoV 5265
Records: 2 specimens, 21°59´S, 166 m
Distribution: probable new species [photos below]

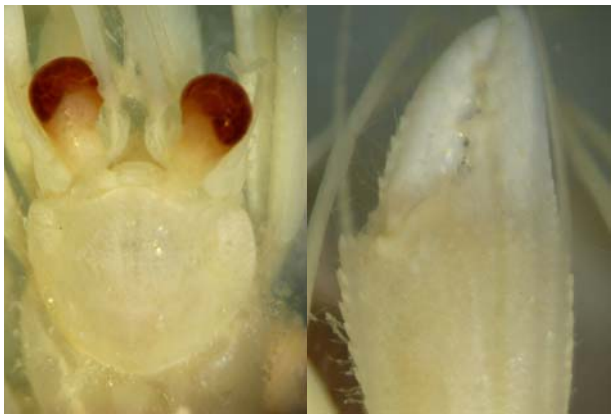
Dardanus sp. MoV 5266
Records: 6 specimens, 25°55´S–33°58´S, 96–123 m
Distribution: probable new species [photo below]

Dardanus sp. MoV 5267
Records: 7 specimens, 21°59´S–24°37´S, 100–166 m
Distribution: probable new species [photos below]

Diogenes sp. MoV 5401
Records: 1 specimen, 24°37´S, 100 m
Distribution: probable new species
Reference: Morgan and Forest (1991)

Paguristes aciculus Grant, 1905
MoV sp. 5279
Records: numerous specimens, 21°58´S–35°22´S, 100–508 m
Distribution: E Australia; new record for WA
Reference: Poore (2004: key) [photo below]

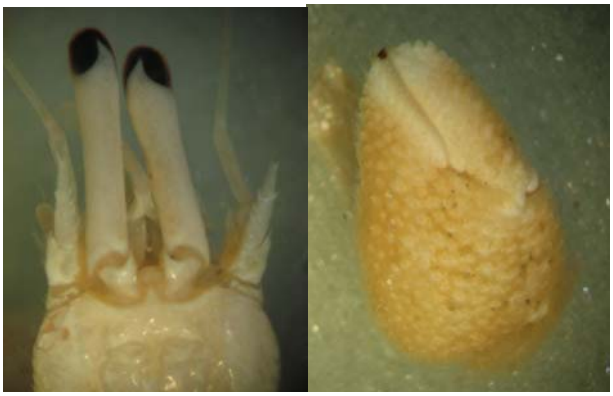
Paguristes longisetosus Morgan, 1987
MoV sp. 5382
Records: 1 specimen, 22°37.04´S, 355–382 m
Distribution: S WA
Reference: Poore (2004: key) [photos below]



Paguristes purpureantennatus Morgan, 1987
MoV sp. 5331
Records: 2 specimens, 31°37´S–35°10´S, 97–210 m
Distribution: S WA
Reference: Poore (2004: key) [photo below]

Paguristes sp. MoV 5263

Records: 8 specimens, 21°58´S–22°02´S, 104–144 m
Distribution: new species
References: Poore (2004: key), Rahayu (2006) [photos below]

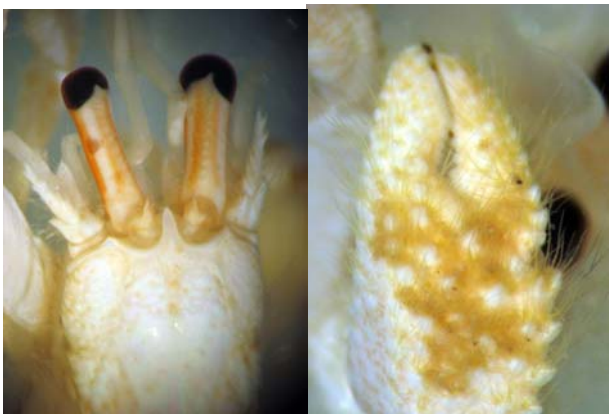


Paguristes sp. MoV 5277

Records: 30 specimens, 21°00´S–22°04´S, 165–411 m
Distribution: new species
References: Poore (2004: key), Rahayu (2006) [photos below]

Paguristes sp. MoV 5278

Records: 1 specimen, 21°59´S, 166 m
Distribution: new species
References: Poore (2004: key), Rahayu (2006) [photos below]



Paguristes sp. MoV 5394

Records: 5 specimens, 24°33´S–27°48´S, 112–388 m
Distribution: new species
References: Poore (2004: key), Rahayu (2006) [photo below]

Strigopagurus elongatus Forest, 1995

MoV sp. 1707
Records: 24 specimens, 31°37´S–35°21´S, 95–210 m
Distribution: S WA
References: Poore (2004: key) [photo below]

Lithodidae

One individual each of two species previously recorded from Tasmanian seamounts were found (Poore, 2004). Both are new species similar to named species from Japan and Peru (S. Ahyong, pers. comm.).

Lithodes aff. ***longispina*** Sakai, 1971

MoV sp. 2718
Records: 2 specimens, 31°58´S–35°26´S, 848–1050 m
Distribution: SE Australia; new record for WA (not *L. longispina* from Japan)
Reference: Poore (2004: 268) [photo below]

Paralomis cf. ***phrixa*** Macpherson, 1992

MoV sp. 2717
Records: 1 specimens, 35°26´S, 900–915 m
Distribution: Tas. Seamounts; new record for WA (not *P. phrixa* from Peru)
Reference: Poore (2004: 269) [photo below]

Paguridae

Half of all hermit crabs belong in this family. Half of the 33 species taken could not be identified beyond family level because each was represented by few specimens of only one sex. McLaughlin's (1997) work on Indonesian species includes some of those identified to species level, including a new record for Australia and another for WA. At least three-quarters (24 species) are probable new species. No one genus was especially diverse.

Anapagrides sp. MoV 5399

Records: 2 specimens, 22°04´S–31°43´S, 102 m
Distribution: females only; new record for genus in Australia
Reference: McLaughlin (2003: key to genera)

Bathypaguropsis yaldwyni McLaughlin, 1994

MoV sp. 2686
Records: 1 specimen, 31°55´S, 479–484 m
Distribution: New Zealand, Vic., Tas. Seamounts; new record for WA
Reference: McLaughlin (1994) [photo below]

Cestopagurus sp. MoV 5269

Records: 1 specimen, 31°55´S, 479–484 m
Distribution: female only; new record for genus in Australia
Reference: McLaughlin (2003: key to genera) [photo below]

Hemipagurus sp. MoV 5281

Records: 1 specimen, 22°50´S, 100 m

Distribution: probable new species; new record for genus in Australia
Reference: Asakura (2001) [photos below]

Lophopagurus (Lophopagurus) nanus (Henderson, 1888)

MoV sp. 1591
Records: 4 specimens, 31°43´S–35°20´S, 97–213 m
Distribution: S Australia; first record for WA
Reference: Poore (2004: 274) [photo below]

Lophopagurus (Australeremus) triserratus (Ortmann, 1892)

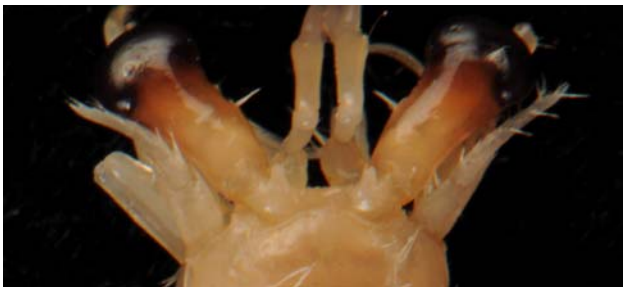
MoV sp. 5332
Records: 14 specimens, 27°03´S–35°20´S, 97–213 m
Distribution: S Australia; first record for WA
Reference: Poore (2004: 274) [photo below]

Michelopagurus sp. MoV 5280

Records: 1 specimen, 31°57´S, 928–1170 m
Distribution: first record of genus from Australia
Reference: McLaughlin (1997: 481) [photo upper right]

Nematopagurus sp. MoV 5380

Records: 2 specimens, 22°50´S, 100 m
Distribution: male only; probable new species
Reference: McLaughlin (2004) [photo below]



Nematopagurus sp. MoV 5383

Records: 2 specimens, 31°55´S–35°22´S, 194–232 m
Distribution: females only; probable new species
Reference: McLaughlin (2004) [photo below]

Nematopagurus sp. MoV 5384

Records: 15 specimens, 21°59´S, 166 m
Distribution: males and females; probable new species
Reference: McLaughlin (2004)

Porcellanopagurus filholi de Saint Laurent & McLaughlin, 2000

MoV sp. 5398
Records: 1 specimen, 29°52´S, 414–401 m
Distribution: South Africa, New Zealand; first record for Australia
Reference: McLaughlin (2000) [photo below]

Propagurus haigae (McLaughlin, 1997)

MoV sp. 5333
Records: 9 specimens, 27°48´S–35°22´S, 394–428 m
Distribution: E Australia, Indonesia; first record for WA
Reference: McLaughlin and de Saint Laurent (1998) [photo below]

Pylopaguropsis zebra (Henderson, 1893)

MoV sp. 5334
Records: 9 specimens, 21°59´S–24°37´S, 100–166 m
Distribution: Indo-West Pacific including N WA
Reference: McLaughlin and Haig (1989) [photo upper right]

Pylopaguropsis sp. MoV 5276

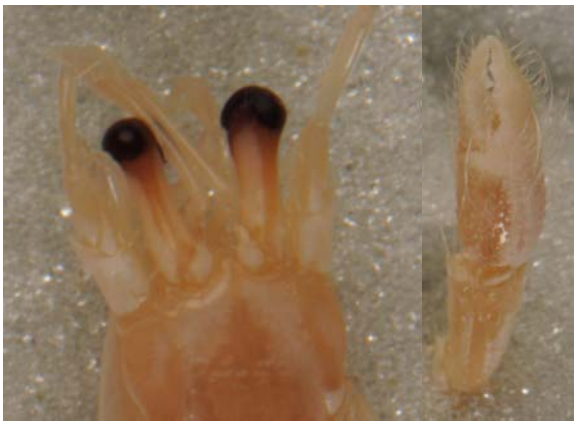
Records: 1 specimen, 25°54´S, 100–95 m
Distribution: male; new species
Reference: McLaughlin and Haig (1989)

Spiropagurus fimbriatus Lewinsohn, 1982

MoV sp. 5335
Records: 5 specimens, 21°58´S–22°04´S, 101–166 m
Distribution: Red Sea, N Qld; first record for WA
Reference: Lewinsohn (1982) [photo below]

Turleana albatrossae (McLaughlin & Haig, 1996)

MoV sp. 5284
Records: 8 specimens, 20°59´S–27°48´S, 96–106 m
Distribution: new record for Australia
Reference: McLaughlin and Haig (1996) [photo next page]



Turleana multispina McLaughlin, 1997

MoV sp. 5400
Records: 2 specimens, 23°59´S, 411 m
Distribution: Indonesia; new record for Australia
Reference: McLaughlin (1997)

Pagurid sp. MoV 5261

Records: 6 specimens, 22°51´S–22°50´S, 100–106 m
Distribution: can not be keyed to genus
Reference: McLaughlin (2003) [photo below]

Pagurid sp. MoV 5270

Records: 1 specimen, 29°03´S, 1000–1037 m
Distribution: male, similar to *Tomopaguropsis*
Reference: McLaughlin (2003) [photo upper right]

Pagurid sp. MoV 5271

Records: 3 specimens, 29°03´S, 1000–1037 m
Distribution: females only; can not be keyed to genus
Reference: McLaughlin (2003) [photo below]

Pagurid sp. MoV 5274

Records: 2 specimens, 35°25´S, 925–913 m
Distribution: females only; like *Lophopagurus*
Reference: McLaughlin (2003) [photo below]

Pagurid sp. MoV 5283

Records: 2 specimens, 21°56´S–29°03´S, 1000–1037 m
Distribution: males only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5285

Records: 1 specimen, 35°26´S, 900–915 m
Distribution: male only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5286

Records: 2 specimens, 20°59´S, 100 m
Distribution: males only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5381

Records: 2 specimens, 21°58´S–28°59´S, 170–183 m
Distribution: females only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5385

Records: 3 specimens, 23°59´S, 398–402 m
Distribution: males only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5386

Records: 1 specimen, 22°00´S, 1085–1077 m
Distribution: female only; cannot be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5387

Records: 3 specimens, 31°58´S–31°57´S, 848–1170 m
Distribution: keys to *Parapagurodes*
Reference: McLaughlin (2003)

Pagurid sp. MoV 5388

Records: 4 specimens, 31°58´S, 848–1050 m
Distribution: females only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5390

Records: 1 specimen, 22°50´S, 100 m
Distribution: male only; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5391

Records: 4 specimens, 21°58´S, 107 m
Distribution: males and females; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5392

Records: 2 specimens, 21°58´S–24°01´S, 100–107 m
Distribution: male and female; can not be keyed to genus
Reference: McLaughlin (2003)

Pagurid sp. MoV 5402

Records: 3 specimens, 21°58´S, 732 m
Distribution: females only; can not be keyed to genus
Reference: McLaughlin (2003)

Parapaguridae

Ten of the 13 species taken were identifiable using the works of Lemaitre (1996; 2004a; 2004b). Four were new records for WA.

Oncopagurus indicus (Alcock, 1905)

MoV sp. 5336
Records: 33 specimens, 21°58´S–35°25´S, 373–1037 m
Distribution: Indo-West Pacific including N Australia; new record for S WA
Reference: Lemaitre (1996) [photo below]

Oncopagurus minutus (Henderson, 1896)

MoV sp. 5337
Records: 6 specimens, 21°58´S–31°58´S, 732–1050 m ✓
Distribution: Indo-West Pacific including E Australia; new record for WA
Reference: Lemaitre (1996)

Oncopagurus monstrosus (Alcock, 1894)

MoV sp. 5338
Records: many specimens, 22°50´S–35°26´S, 329–1050 m ✓
Distribution: Indo-West Pacific including N WA; new record for S WA
Reference: Lemaitre (1996) [photo below]

Paragiopagurus boletifer (de Saint Laurent, 1972)
MoV sp. 5339
Records: 1 specimen, 22°37´S, 355–382 m
Distribution: Indo-West Pacific; new record for Australia
Reference: Lemaitre (1996) [photo below]

Paragiopagurus diogenes (Whitelegge, 1900)
MoV sp. 5340
Records: 36 specimens, 24°01´S–33°58´S, 96–407 m
Distribution: Indo-West Pacific including Australia
Reference: Lemaitre (1996) [photo below]

Paragiopagurus sp. MoV 5272
Records: 25 specimens, 21°00´S–33°00´S, 355–1010 m
Distribution: new species
Reference: Lemaitre (1996) [photo below]

Paragiopagurus sp. MoV 5397
Records: 9 specimens, 24°33´S, 388–368 m
Distribution: new species
Reference: Lemaitre (1996)

Parapagurus latimanus Henderson, 1888
MoV sp. 5341
Records: 26 specimens, 22°00´S–35°23´S, 479–1110 m
Distribution: Indo-West Pacific including E Australia; first record for WA
Reference: Lemaitre (1999) [photo below]

Strobopagurus sp. MoV 5282
Records: 11 specimens, 21°58´S–31°37´S, 364–1037 m ✓
Distribution: new species
Reference: Lemaitre (2004b) [photo next page]

Sympagurus brevipes (de Saint Laurent, 1972)

MoV sp. 5342
Records: 1 specimen, 21°58´S, 726–732 m
Distribution: Indo-West Pacific including N Australia; new record for S WA
Reference: Lemaitre (1996) [photos below]

Sympagurus dimorphus (Studer, 1883)

MoV sp. 5343
Records: 29 specimens, 31°55´S–35°22´S, 423–680 m
Distribution: Southern Ocean including Australia; first record for WA
Reference: Lemaitre (1996) [photo below]

Sympagurus planimanus (de Saint Laurent, 1972)

MoV sp. 5344
Records: 71 specimens, 21°58´S, 726–732 m
Distribution: West Pacific including N WA
Reference: Lemaitre (1996)

Sympagurus villosus Lemaitre, 1996

MoV sp. 5345
Records: 2 specimens, 21°58´S–22°00´S, 324–1010 m
Distribution: eastern Australia; first record for WA
References: Lemaitre (1996), Poore (2004)

Pylochelidae

No pylochelids have been recorded for WA but the only identified species ranges across the Indian and SW Pacific. The second was represented by juveniles. The systematics of the family was reviewed by Forest (1987).

Pylocheles mortensenii Boas, 1926

MoV sp. 5346
Records: 1 specimen, 31°37´S, 364–404 m
Distribution: Indo-West Pacific including Qld, New Zealand; first record for WA
Reference: Forest (1987) [photos below]

Pylochelidae sp. MoV 5395

Records: 2 specimens, 24°33´S, 388–368 m
Distribution: juvenile specimens
Reference: Forest (1987)

Astacidea – scampi

Astacidea are represented in these collections by one family that includes some species of commercial interest.

Nephropidae

Four well-known species in two genera were recorded, all identifiable from Poore (2004) or Macpherson (1990; 1993). One is a new record for southern WA. The papers cited have figures.

Metanephrops boschmai (Holthuis, 1964)

MoV sp. 5067

Records: 17 specimens, 21°58´S–35°13´S, 324–554 m ✓

Distribution: S and W Australia

Reference: Poore (2004: 165) [photos below]

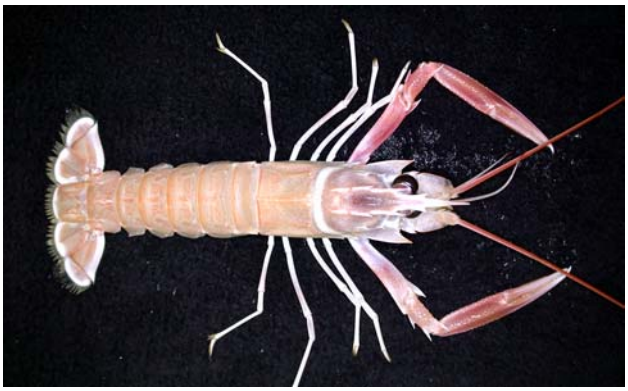
Metanephrops velutinus Chan & Y3u, 1991

MoV sp. 5077

Records: 13 specimens, 22°04´S–35°12´S, 387–508 m

Distribution: West Pacific including Australia

Reference: Poore (2004: 165) [photo below]



Nephropsis acanthura Macpherson, 1990

MoV sp. 4968

Records: 2 specimens, 21°55´S, 1260–1295 m ✓

Distribution: Indo-West Pacific including S Australia

Reference: Poore (2004: 166)

Nephropsis stewarti Wood-3Mason, 1872

MoV sp. 5068

Records: 1 specimen, 31°58´S, 848–1050 m

Distribution: Indo-West Pacific including N Australia; new record for S WA

Reference: Macpherson (1993) [photos below]

Brachyura – crabs

Thirty-two families were represented by 227 nominal species. The single reference to brachyuran crabs from a broad geographic region of Australia (Poore, 2004) was found to deal with only a small fraction of the species found. Numerous papers, especially recent works describing species from the Western Pacific and Indonesia, were consulted to make species determinations.

One quarter of all species (47 species) were first records for Australia, a further 22 species first records for WA and 31 first records for southern WA. Seventy-one species (31%) are new species. Some of the species noted as new to Australia or to WA should be considered tentative identifications until specimens are compared with types or representatives from type localities.

The family arrangement and sequence is that of Ng et al. (2008). Their list of all known species updates the classification used by Poore (2004). Families are listed in this sequence, genera and species alphabetically within families. The eubrachyuran subsection Thoracotremata was not represented.

Section Podotremata
- Superfamily Cyclodorippoidea
  - Cyclodorippidae
  - Cymonomidae
- Superfamily Dromoidea
  - Dromiidae
  - Dynomenidae
- Superfamily Homoloidea
  - Homolidae
  - Latreilliidae
- Superfamily Raninoidea
  - Raninidae

Section Eubrachyura

Subsection Heterotremata
- Superfamily Aethroidea
  - Aethridae
- Superfamily Calappoidea
  - Calappidae
- Superfamily Cancroidea
  - Atelecyclidae
- Superfamily Carpiloidea
  - Carpiliidae
- Superfamily Corystoidea
  - Corystidae
- Superfamily Dorippoidea
  - Dorippidae
  - Ethusidae
- Superfamily Eriphioidea
  - Hypothalassiidae
- Superfamily Goneplacoidea
  - Chasmacardinidae
  - Euryplacidae
  - Goneplacidae
  - Mathildellidae
- Superfamily Hexapodoidea
  - Hexapodidae
- Superfamily Leucosioidea
  - Iphiculidae
  - Leucosiidae
- Superfamily Majoidea
  - Epialtidae
  - Hymenosomatidae
  - Inachidae
  - Majidae
- Superfamily Palicoidea
  - Palicidae
- Superfamily Parthenopoidea
  - Parthenopidae
- Superfamily Pilumnoidea
  - Pilumnidae
- Superfamily Portunoidea
  - Portunidae
- Superfamily Retroplumoidea
  - Retroplumidae
- Superfamily Trapezioidea
  - Trapeziidae
- Superfamily Xanthoidea
  - Panopeidae
  - Xanthidae

Section Podotremata

Superfamily Cyclodorippoidea

Cyclodorippidae

Three species were identified using Tavares (1993). All are new for WA.

Krangalangia spinosa (Zarenkov, 1970)

MoV sp. 5024
Records: 5 specimens, 31°58´S, 848–1050 m
Distribution: N Australia; first record for S WA
Reference: Tavares (1993) [photo below]

Tymolus brucei Tavares, 1991

MoV sp. 5484
Records: 13 specimens, 21°00´S–35°04´S, 378–508 m
Distribution: N WA; first record for S WA
Reference: Tavares (1993)

Tymolus similis (Grant, 1905)

MoV sp. 5023
Records: many specimens, 22°04´S–35°22´S, 364–1050 m ✓
Distribution: SE Australia; first record for S WA
Reference: Tavares (1993) [photo below]

Cynomonidae

Of two species, one is a new record for Australia and the other a probable new species. Ahyong and Brown (2003) provided a key to Indo-West Pacific species.

Cymonomus andamanicus Alcock, 1905

MoV sp. 5025
Records: 1 specimen, 29°50 ´S, 408–427 m
Distribution: Indo-West Pacific; first record for Australia
Reference: Ahyong and Brown (2003)

Cymonomus sp. MoV 5001

Records: 12 specimens, 29°52´S–35°22´S, 401–1050 m
Distribution: new species
Reference: Ahyong and Brown (2003) [photo below]

Superfamily Dromioidea

Dromiidae

Three of the six species could be identified with the aid of McLay (1993). The others were placed in genera (one not previously recorded from Australia) using the same source but are not known species.

Austrodromidia insignis (Rathbun, 1923)

MoV sp. 3856

Records: 3 specimens, 27°48´S–35°16´S, 96–179 m

Distribution: S Australia

Reference: McLay (1993) [photo below]

Dromia wilsoni (Fulton & Grant, 1902)

MoV sp. 3854

Records: 16 specimens, 27°55´S–35°37´S, 95–253 m

Distribution: Indo-West Pacific and S Atlantic including Australia

Reference: McLay (1993) [photos below]

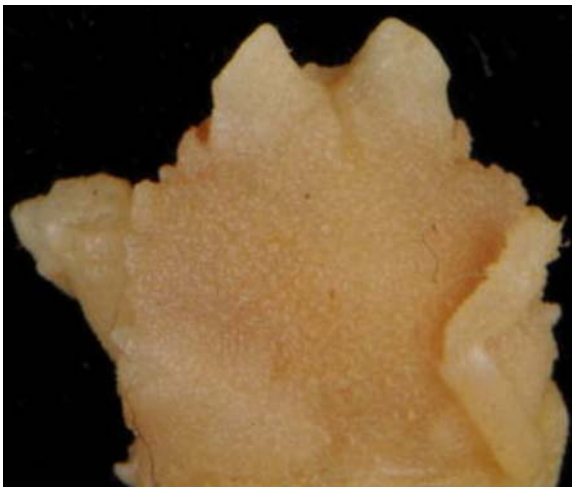
Epigodromia sp. MoV 5473

MoV sp. 5473

Records: 4 specimens, 35°20 ´S, 212–213 m

Distribution: new species

Reference: McLay (1993) [photo upper right]



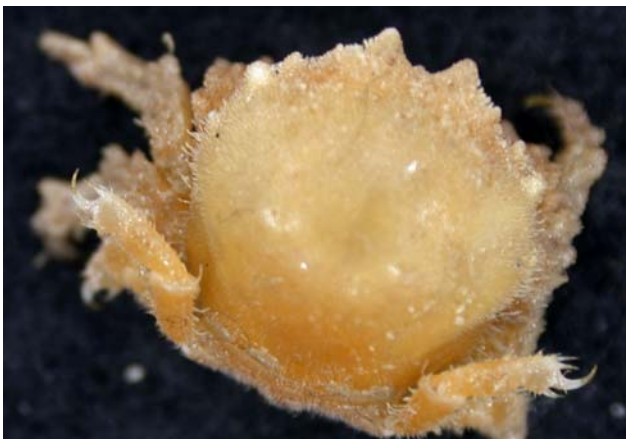
Fultodromia nodipes (Guérin-Méneville, 1832)

MoV sp. 5029

Records: 3 specimens, 24°37´S–35°10´S, 97–100 m

Distribution: S Australia

Reference: McLay (1993) [photo below]



Fultodromia sp. MoV 5137

Records: 1 specimen, 27°48´S, 123–112 m

Distribution: new species

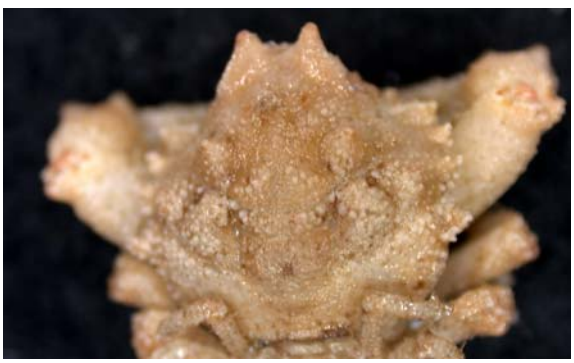
Reference: McLay (1993)

Takedromia sp. MoV 5003

Records: 5 specimens, 22°51´S–24°37´S, 100 m,

Distribution: new species, new record for genus in Australia

Reference: McLay (1993) [photo below]



Dynomenidae

One species was found (McLay, 1999), the first for southern WA.

Hirsutodynomene spinosa (Rathbun, 1911)

MoV sp. 5030

Records: 1 specimen, 27°03´S, 106 m

Distribution: Indo-West Pacific including N Australia; first record for S WA

Reference: McLay (1999) [photo below]

Superfamily Homoloidea

Homolidae

Among the seven species is a new Australian record and a possible new species (Guinot and Richer de Forges, 1995; Tan et al., 2000).

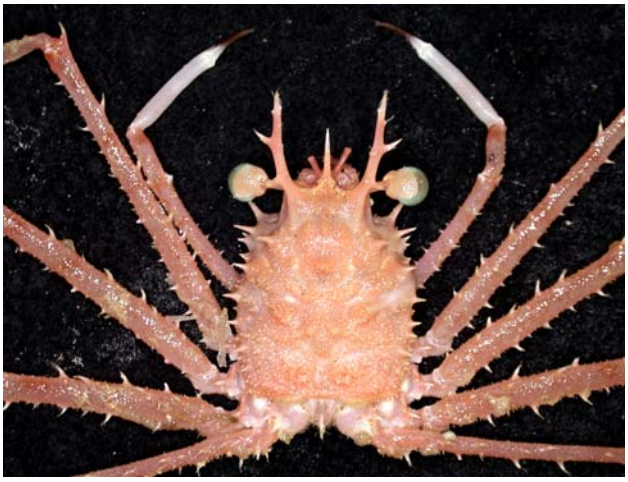
Dagnaudus petterdi (Grant, 1905)

MoV sp. 5038

Records: 9 specimens, 24°33´S–35°21´S, 364–490 m ✓

Distribution: E and S Australia, New Zealand, New Caledonia; new record for WA

Reference: Poore (2004) [photo below]



Homola orientalis Henderson, 1888

MoV sp. 5036

Records: 24 specimens, 21°59´S–31°37´S, 165–404 m ✓

Distribution: Indo-West Pacific including Australia

Reference: Poore (2004) [photo below]

Homologenus braueri Doflein, 1904

MoV sp. 5139

Records: 7 specimens, 21°55´S–31°43´S, 986–1295 m

Distribution: Indo-West Pacific including WA

Reference: Guinot and Richer de Forges (1995) [photo next page]

Homologenus malayensis Ihle, 1912

MoV sp. 5039
Records: 24 specimens, 29°03´S–31°58´S, 848–1050 m
Distribution: West Pacific; first record for Australia
Reference: Guinot and Richer de Forges (1995) [photo below]

Latreillopsis tetraspina Dai & Chen, 1980

MoV sp. 5035
Records: 1 specimen, 27°48´S, 123–112 m ✓
Distribution: WA
Reference: Guinot and Richer de Forges (1995)

Paramolopsis boasi Wood-Mason, 1891

MoV sp. 5037
Records: 3 specimens, 21°00´S–22°04´S, 399–408 m, ✓
Distribution: Indo-West Pacific including Australia
Reference: Guinot and Richer de Forges (1995)

Yaldwynopsis sp. MoV 5004

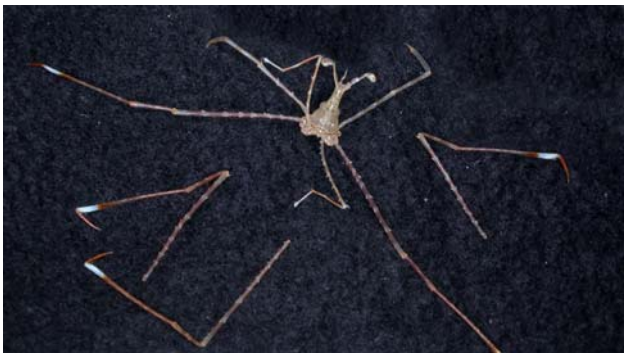
MoV sp. 5004
Records: 1 specimens, 31°37.27´S, 205–210 m ✓
Distribution: probable new species
Reference: Guinot and Richer de Forges (1995) [photo below]

Latreilliidae

Two species were identified confidently using Castro et al. (2003). One was recorded from Australia for the first time.

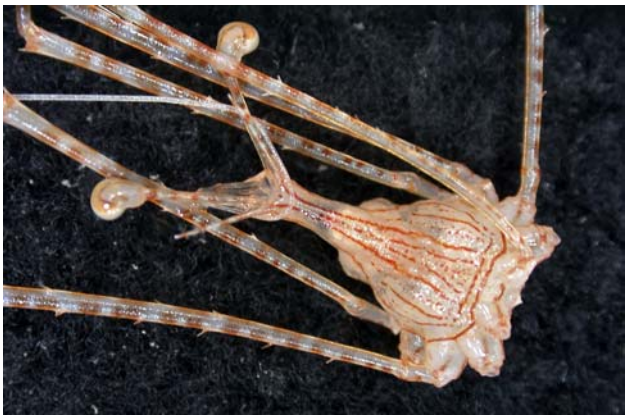
Eplumula australiensis (Henderson, 1888)

MoV sp. 5040
Records: 11 specimens, 25°54´S–31°43´S, 100–253 m ✓
Distribution: Australia, New Zealand, New Caledonia
Reference: Williams (1982), Poore (2004) [photo below]



Latreillia pennifera Alcock, 1900

MoV sp. 5041
Records: 25 specimens, 20°59´S–22°04´S, 100–408 m ✓
Distribution: Indo-West Pacific; first record for Australia
Reference: Castro et al. (2003) [photo below]



Superfamily Raninoidea

Raninidae

Of five species, four were well-known Australia species (Goeke, 1985; Dawson and Yaldwyn, 2000). The fifth was a species known previously from Japan-Philippines and now recorded from WA.

Cosmonotus grayi Adams & White, 1848

MoV sp. 5293
Records: 2 specimens, 20°59´S–27°48´S, 100–123 m
Distribution: Indo-West Pacific including NW Australia; first record for S WA
Reference: Sakai (1976: pl. 20, fig. 3) [photo below]

Lyreidus stenops Wood Mason, 1887

MoV sp. 5140
Records: 4 specimens, 21°58.41´S–22°4.28´S, 101–177 m ✓
Distribution: West Pacific; new record for Australia
Reference: Goeke (1985) [photo right]

Lyreidus tridentatus De Haan, 1841

MoV sp. 5295
Records: 17 specimens, 21°00´S–31°55´S, 201–414 m ✓
Distribution: Indo-West Pacific including Australia
Reference: Poore (2004) [photo below]

Notosceles serratifrons (Henderson, 1893)

MoV sp. 5294
Records: 21 specimens, 21°58´S–27°48´S, 106–166 m
Distribution: Indian Ocean including WA
Reference: Poore (2004) [photo next page]

Umalia trirufomaculata (Davie & Short, 1989)

MoV sp. 5296
Records: 12 specimens, 24°01´S–31°43´S, 100–123 m ✓
Distribution: N Australia; new record for S WA
Reference: Poore (2004) [photo below]

Section Eubrachyura

Subsection Heterotremata

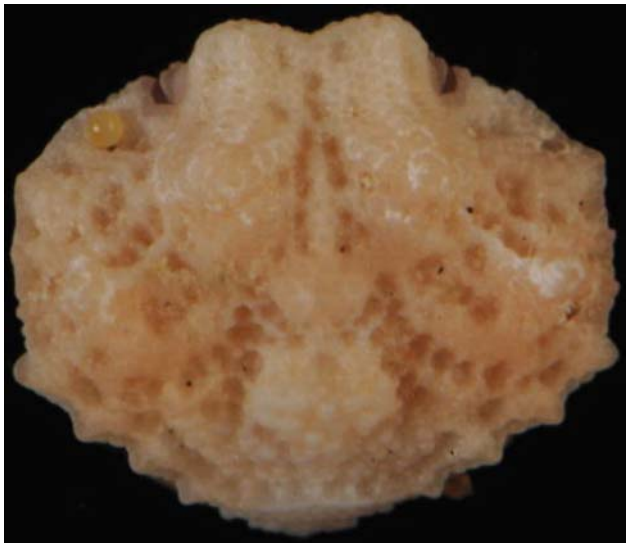
Superfamily Aethroidea

Aethridae

Two species previously treated as members of Leucosiidae (Davie, 2002) were identified with reference to Alcock (1895), Miers (1876) and Griffin (1972). Both were found further south than hitherto known.

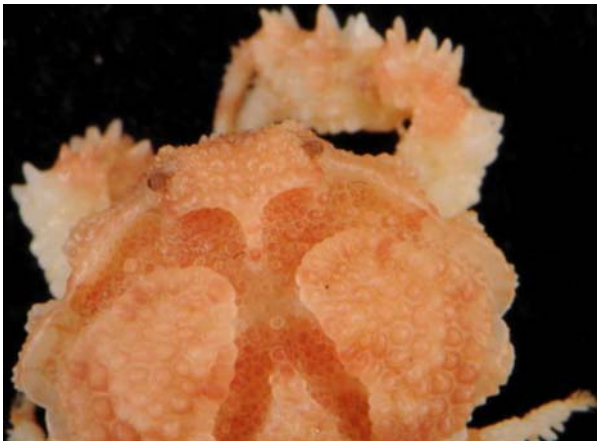
Actaeomorpha erosa Miers, 1877

MoV sp. 5061
Records: 1 specimen, 27°48´S,98 m
Distribution: Indo-West Pacific including Qld and N WA; new record for S WA
Reference: Miers (1876), Alcock (1895) [photo below]



Drachiella sculpta (Haswell, 1879)

MoV sp. 5060
Records: 4 specimens, 20°59´S–21°59´S, 100–166 m
Distribution: N Australia; new record for S WA, here to greater depths than previously
Reference: Griffin (1972) [photo below]



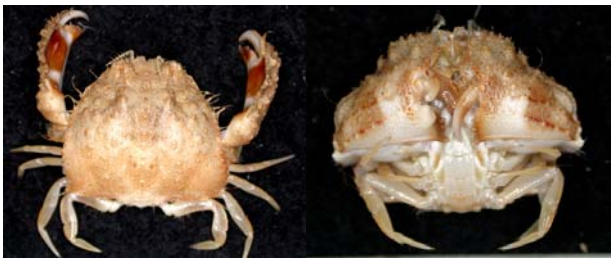
Superfamily Calappoidea

Calappidae

Six species in two genera were found and identified using two papers by Galil (1993; 1997). One species could not be identified and another appeared a new Australian record. Three species are new for WA.

Calappa depressa Miers, 1886

MoV sp. 5016
Records: 7 specimens, 22°50´S–29°48´S, 95–114 m
Distribution: Indo-West Pacific including Australia
Reference: Galil (1997) [photos below]



Calappa lophos (Herbst, 1785)

MoV sp. 5017
Records: 3 specimens, 20°59´S–22°04´S, 100–107 m
Distribution: Indo-West Pacific including Australia
Reference: Galil (1997) [photos below]

Calappa pustulosa Alcock, 1896

MoV sp. 5018
Records: 7 specimens, 20°59´S–22°04´S, 100–177 m ✓
Distribution: West Pacific; new record for Australia
Reference: Galil (1997) [photos below]

Mursia australiensis Campbell, 1971

MoV sp. 5020
Records: 1 specimens, 31°36´S, 329–370 m
Distribution: E Australia; new record for WA
Reference: Galil (1993) [photos upper right]

Mursia microspina Davie & Short, 1989

MoV sp. 5019
Records: 3 specimens, 24°37´S–25°55´S, 100–120 m
Distribution: West Pacific including NE Australia; new record for WA
Reference: Galil (1993) [photos below]

Mursia sp. MoV 4988

Records: 6 specimens, 21°00´S–33°00´S, 387–428 m ✓
Distribution: new species similar to *M. musorstomi* Galil, 1993
Reference: Galil (1993) [photos below]

Superfamily Cancroidea

Atelecyclidae

Two species, both apparently undescribed were recorded. They could not be identified using Salva and Feldmann (2001).

***Trichopeltarion* sp.** MoV 5135

Records: 40 specimens, 27°48´S–35°13´S, 364–494 m ✓
Distribution: new species different from those recorded from Tas. Seamounts
Reference: Poore et al. (1998) [photo below]

***Trichopeltarion* sp.** MoV 5138

Mov sp. 5138
Records: 3 specimens, 28°59´S–35°04´S, 378–407 m
Distribution: new species similar to *T. wardi* Dell, 1968
Reference: Dell (1968) [photo below]

Superfamily Carpilioidea

Carpiliidae

A single species was recognised.

Carpilius convexus (Forskål, 1775)

MoV sp. 5080
Records: 1 specimen, 21°56´S, 134–132 m
Distribution: Indo-West Pacific including N Australia; new record for S WA
Reference: Serène (1984)

Superfamily Corystoidea

Corystidae

One of the two species (if correctly identified) is a new Australian record for a species previously described from Taiwan (Ng et al., 2000).

Gomeza bicornis Gray, 1831

MoV sp. 5022
Records: 1 specimen, 25°54´S, 100 m ✓
Distribution: Indo-West Pacific including S Australia
Reference: Hale (Hale, 1927)

Jonas cf. ***choprai*** Serène, 1971

MoV sp. 5021
Records: 3 specimens, 25°55´S–27°48´S, 123–112 m
Distribution: possible new species similar to *J. choprai* from Taiwan
Reference: Ng et al.(2000) [photo below]

Superfamily Dorippoidea

Dorippidae

All three species were identified to genus using Manning and Holthuis (1981).

Dorippe quadridens (Fabricius, 1793)

MoV sp. 5026
Records: 1 specimen, 22°04´S, 102 m
Distribution: Indo-West Pacific including Australia
Reference: Holthuis and Manning (1990)

Neodorippe callida Fabricius, 1798

MoV sp. 5027
Records: 1 specimen, 25°54´S, 100 m ✓
Distribution: Indo-West Pacific; new record for Australia (also known from Qld)
Reference: Holthuis and Manning (1990)

Paradorippe australiensis (Miers, 1884)

MoV sp. 5028
Records: 3 specimens, 24°37´S–25°54´S, 100–120 m ✓
Distribution: N Australia and W Papua; first record for S WA
Reference: Holthuis and Manning (1990),

Ethusidae

Four species were found but only one was tentatively identified using the keys and illustrations of Chen (1993). All are probable new species. The species of the family were previous treated as members of Dorippidae.

Ethusa cf. ***granulosa*** Ihle, 1916

MoV sp. 5006
Records: 2 specimens, 27°48´S–27°48´S, 112–436 m
Distribution: new species
Reference: Chen (1993: key)

Ethusa sp. MoV 5007

Records: 7 specimens, 21°56´S–31°43´S, (102) 848–1050 m
Distribution: new species
Reference: Chen (1993: key)

Ethusa sp. MoV 5008

Records: 1 specimen, 21°58´S, 726–732 m
Distribution: new species
Reference: Chen (1993: key)

Ethusina sp. MoV 5005

Records: 1 specimen, 31°58´S, 848–1050 m
Distribution: new species
Reference: Chen (1993: key) [photo below]

Superfamily Eriphioidea

Hypothalassiidae

The only records are probable juveniles of a large commercially exploited species (Koh and Ng, 2000). The genus was placed in Eriphiidae by Poore (2004) and other authors.

Hypothalassia acerba Koh & Ng, 2000

MoV sp. 5114
Records: 2 specimens, 31°37´S–35°22´S, 195–210 m
Distribution: S Australia
Reference: Koh and Ng (2000) [photo below]

Superfamily Goneplacoidea

Chasmocarcinidae

Two species of *Camatopsis* and one of *Megaesthius* were identified using Tesch (1918) and included in this family (rather than Goneplacidae) on the basis of arguments in Ng (1987).

Camatopsis rubida Alcock & Anderson, 1899

MoV sp. 5084
Records: 8 specimens, 21°58´S–22°04´S, 101–399 m
Distribution: Indo-West Pacific; new record for Australia
Reference: Sakai (1976)

Camatopsis sp. MoV 5086

Records: 1 specimen, 21°58´S, 373–382 m ✓
Distribution: new species
References: Sakai (1976), Tesch (1918)

Megaesthesius sagaedae Rathbun, 1909

MoV sp. 5092
Records: 1 specimen, 22°04´S, 106–101 m
Distribution: Singapore; first record for Australia
Reference: Tesch (1918)

Euryplacidae

Both species are probable new species of Heteroplax. The genus has previously been included in Goneplacidae but we follow Ng et al. (2008) in placing them in Euryplacidae.

Heteroplax sp. MoV 4993

Records: 12 specimens, 22°04´S–27°55´S, 206–253 m ✓
Distribution: new species
References: Sakai (1976), Tesch (1918)

Heteroplax sp. MoV 4994

Records: many specimens, 21°59´S–22°02´S, 105–206 m ✓
Distribution: new species
References: Sakai (1976), Tesch (1918) [photo below]

Goneplacidae

The systematics of Goneplacidae and related families are difficult. Some species initially placed in this family were reassigned to other families (Chasmocarcinidae, Euryplacidae and Mathildellidae) on the basis of the arguments in Ng and Manuel-Santos (2007) and Ng (1987). Castro (2007) provided a key to genera of Goneplacinae, a subfamily used as a family here, but not all species could be identified confidently to genus or species.

Carcinoplax sp. MoV 4996

Records: 1 specimen, 21°59´S, 166 m
Distribution: new species
Reference: Guinot (1989)

Carcinoplax sp. MoV 4998

Records: 6 specimens, 27°48´S–35°22´S, 416–695 m
Distribution: new species
Reference: Guinot (1989)

Notonyx nitidus Milne Edwards, 1873

MoV sp. 5088
Records: 2 specimens, 22°51´S–22°02´S, 100–105 m
Distribution: West Pacific; first record for Australia
Reference: Clark and Ng (2006) [photo below]

Psopheticus stridulans Wood-Mason, 1892

MoV sp. 5032
Records: 23 specimens, 21°58´S–33°00´S, 373–423 m, ✓
Distribution: Indo-West Pacific; first record for Australia
Reference: Sakai (1976) [photo below]

Pycnoplax bispinosa (Rathbun, 1914)

MoV sp. 4991
Records: 18 specimens, 21°58´S–22°04´S, 170–206 m ✓
Distribution: first record for Australia
References: Guinot (1989), Castro (2007)

Pycnoplax meridionalis **(**Rathbun, 1923)

MoV sp. 3862
Records: 7 specimens, 31°37´S–35°23´S, 147–776 m
Distribution: S Australia
References: Poore (2004) as *Carcinoplax meridionalis*, Castro (2007) [photo below]

Pycnoplax victoriensis **(**Rathbun, 1923)

MoV sp. 5031
Records: 3 specimens, 28°59´S–35°21´S, 389–704 m
Distribution: SE Australia; first record for S WA
Reference: Poore (2004) as *Carcinoplax victoriensis*, Castro (2007)

Pycnoplax cf. ***surugensis*** (Rathbun, 1932)

MoV sp. 4992
Records: 14 specimens, 21°55´S–31°57´S, 848–1295 m
Distribution: probable new species close to Japanese species
Reference: Guinot (1989), Castro (2007) [photo below]

Pycnoplax sp. MoV 5124

Records: 1 specimen, 21°59´S, 166 m
Distribution: new species
Reference: Guinot (1989)

Mathildellidae

Two species previously considered members of Goneplacidae were found. Family placement follows Ng et al. (2008).

Mathildella serrata (Sakai, 1974)

MoV sp. 5112
Records: 13 specimens, 27°55´S–35°22´S, 205–915 m ✓
Distribution: West Pacific; new record for Australia, also known from SE Australia
Reference: Ng and Chan (2000) [photo below]

Platypilumnus soelae Garth, 1987

MoV sp. 5033
Records: 2 specimens, 21°58´S, 356–324 m
Distribution: N WA; first record for S WA
Reference: drawing form Garth (1987)

Mathildellid sp. MoV 4997

Records: 1 specimen, 31°58´S, 848–1050 m
Distribution: juvenile of new species difficult to place in genus; may belong in Goneplacidae
Reference: Tesch (1918) [photo below]

Superfamily Hexapodidae

Hexapodidae

The only species has been recorded before only from Japan to Indonesia (Manning and Holthuis, 1981).

Hexaplax megalops Dolflein, 1904

MoV sp. 5034
Records: 11 specimens, 21°00´S–22°04´S, 387–408 m ✓
Distribution: West Pacific; new record for Australia
References: Manning and Holthuis (1981: key), Sakai (1976) [photo below]

Superfamily Leucosioidea

Iphiculidae

The single species was previously treated as a member of Leucosiidae. It is a new record for Australia.

Iphiculus spongiosus Adams & White, 1848

MoV sp. 5113
Records: 10 specimens, 20°59´S–22°04´S, 100–107 m ✓
Distribution: Indo-West Pacific; new record for Australia
Reference: Chen (1989)

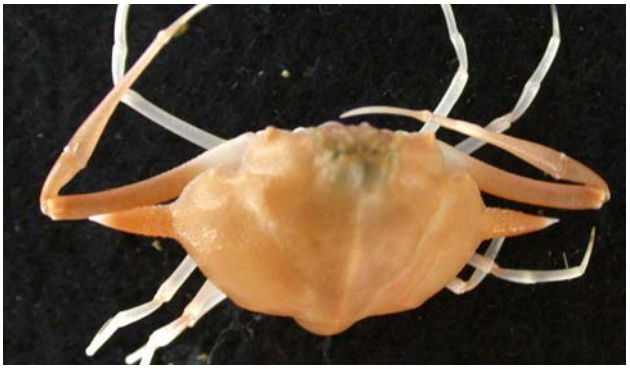
Leucosiidae

Numerous species are known from Australia but not all in these samples could be identified to species. The Western Australian fauna was reviewed by Tyndale-Biscoe and George (1962). Tentative identifications were made using names of species described from more northern parts of the West Pacific.

The family was represented by 30 species (many in just one sample) in ten genera. For some genera the literature is scattered but Alcock (1895) and Sakai (1976) are useful to identify genera. Chen (1989), Tan and Ng (1996) and Tan (1996) included similar or the same species. Thirteen species are new (42%) and four are new records for Australia.

Arcania cornuta (MacGilchrist, 1905)

MoV sp. 5045
Records: 4 specimens, 21°58´S–25°55´S, 120–177 m
Distribution: Indo-West Pacific including Qld; new record for WA
References: Chen (1989), Galil (2001a) [photo below]

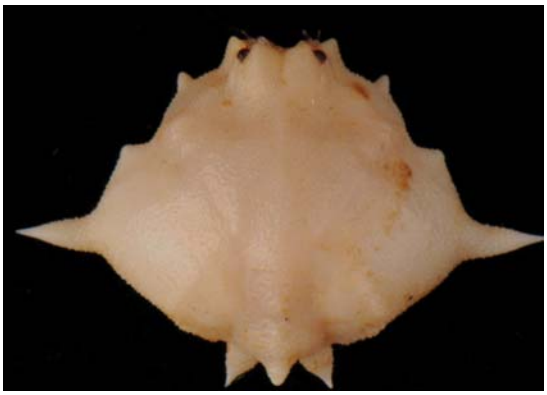


Arcania elongata Yokoya, 1933

MoV sp. 5042
Records: 3 specimens, 21°59´S–30°59´S, 100–166 m
Distribution: Japan, Qld. NSW; first record for WA
Reference: Galil (2001a) [photo below]

Arcania gracilis (Henderson, 1893)

MoV sp. 5047
Records: 4 specimens, 20°59´S–21°59´S, 100–166 m
Distribution: Indo-West Pacific including WA; first record for S WA
Reference: Galil (2001a)



Arcania muricata Galil, 2001

MoV sp. 5046
Records: 4 specimens, 20°59.´S–21°58´S, 100–177 m
Distribution: Indo-West Pacific including NT; first record for S WA
Reference: Galil (2001a) [photo below]

Arcania novemspinosa (Adams & White, 1849)

MoV sp. 5043
Records: 1 specimen, 25°55´S, 120 m
Distribution: Indo-West Pacific including WA
Reference: Galil (2001a) [photo below]

Arcania septemspinosa (Fabricius, 1787)

MoV sp. 5044
Records: 7 specimens, 20°59´S–22°04´S, 100–177 m ✓
Distribution: Indo-West Pacific including NT, Qld; new record for WA
Reference: Galil (2001a) [photo below]

Arcania sp. MoV 4980

Records: 3 specimens, 27°48´S–29°48´S, 96–114 m
Distribution: new species like *A. sagmiensis* from Japan
Reference: Galil (2001a) [photo below]

Arcania sp. MoV 4987

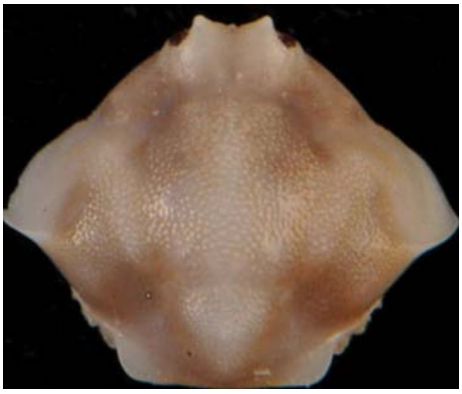
Records: 2 specimens, 22°50´S–24°37´S, 100 m
Distribution: new species like *A. septemspinosa*
Reference: Galil (2001a) [photo below]

Ebalia tuberculosa (Milne Edwards, 1873)

MoV sp. 0710
Records: many specimens, 21°59´S–35°22´S, 212–539 m ✓
Distribution: Indo-West Pacific including Australia
Reference: Poore (2004) [photo next page]

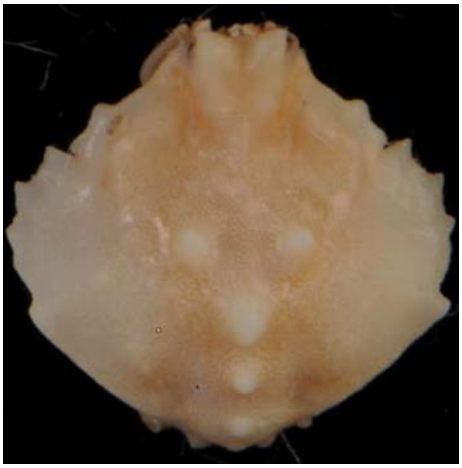
Ebalia sp. MoV 4981

Records: 6 specimens, 22°50´S–24°01 ´S,100 m
Distribution: new species like *E. dimorphoides*
Reference: Chen (1989) [photo below]



Ebalia sp. MoV 4989

Records: 3 specimens, 20°59´S–21°58´S, 100–107 m
Distribution: new species
Reference: Chen (1989) [photo below]



Ebalia sp. MoV 4990

Records: 1 specimen, 28°59´S, 180–183 m
Distribution: new species
Reference: Chen (1989) [photo below]

Leucosia haematosticta Adams & White, 1849

MoV sp. 5053
Records: 1 specimen, 25°54´S, 100 m
Distribution: Indo-West Pacific including Australia; new record for S WA
Reference: Poore (2004) [photo below]

Leucosia ocellata Bell, 1855

MoV sp. 5064
Records: 1 specimen, 21°58´S, 177–170 m
Distribution: N Australia; new record for S WA
Reference: Campbell and Stephenson (1970) [photo below]

Leucosia whitei Bell, 1855

MoV sp. 5052
Records: 1 specimen, 20°59´S, 100 m
Distribution: Indo-West Pacific including Australia
Reference: Arnold and George (1987) [photo below]

Leucosia sp. MoV 4985

Records: 1 specimen, 22°04´S, 102 m
Distribution: new species like *L. foresti*
Reference: Chen (1989) [photo below]

Merocryptus lambriformis Milne Edwards, 1873

MoV sp. 3864
Records: 6 specimens, 35°20´S–35°22´S, 161–213 m
Distribution: West Pacific including Australia
Reference: Poore (2004) [photo below]

Myra curtimana Galil, 2001

MoV sp. 5050
Records: 15 specimens, 21°57´S–35°25´S, 100–1031 m ✓
Distribution: West Pacific including WA
Reference: Galil (2001b) [photo below]

Myra sp. MoV 4982

Records: 1 specimens, 27°48´S, 123–112 m
Distribution: new species
Reference: Galil (2001b) [photo below]

Myra sp. MoV 4983

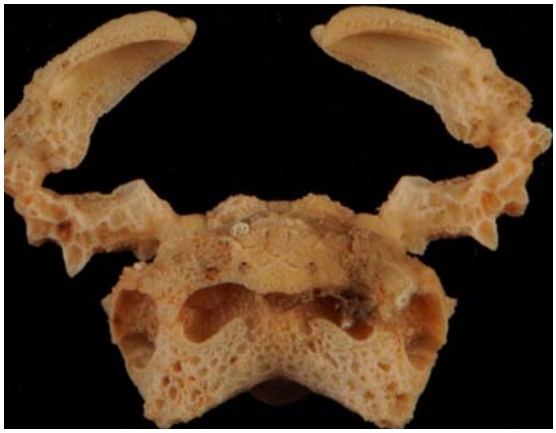
Records: 3 specimens, 20°59´S, 100 m
Distribution: new species
Reference: Galil (2001b) [photo below]

Myrine kessleri (Paulson, 1875)

MoV sp. 5051
Records: 2 specimens, 20°59´S–21°57´S, 100–114 m
Distribution: Indo-West Pacific including N Australia; first record for S WA
Reference: Galil (2001b) [photo below]

Oreophorus reticulatus Adams & White, 1849

MoV sp. 5062
Records: 2 specimens, 20°59´S–27°48´S, 100–123 m ✓
Distribution: Indo-West Pacific; new record for Australia
Reference: Tan and Ng (1996) [photo below]



Parilia major Sakai, 1961

MoV sp. 5055
Records: 1 specimen, 22°04´S, 396–391 m
Distribution: Japan; new record for Australia (doubtful identification)
Reference: Sakai (1976) [photo below]

Philyra sp. MoV 4984

Records: 1 specimen, 24°01´S, 100 m
Distribution: new species
Reference: Poore (2004) [photo below]

Randallia eburnea Alcock, 1896

MoV sp. 5048
Records: 16 specimens, 21°59´S–35°21´S, 100–404 m
Distribution: Indo-West Pacific including Australia
Reference: Chen (1989) [photo below]

Randallia pustuloides Sakai, 1961

MoV sp. 5049
Records: 2 specimens, 21°58´S, 373–382 m
Distribution: Japan, Philippines; new record for Australia
Reference: Chen (1989) [photo below]

Randallia sp. MoV 4977

Records: 1 specimen, 22°37´S, 355–382 m
Distribution: new species
Reference: Chen (1989) [photo next page]

Randallia sp. MoV 4978

Records: 40 specimens, 20°59´S–27°48´S, 100–166 m ✓
Distribution: new species
Reference: Chen (1989) [photo below]

Randallia sp. MoV 4979

Records: 1 specimen, 21°58´S, 107 m
Distribution: new species
Reference: Chen (1989)

Randallia sp. MoV 4986

Records: 1 specimen, 21°59´S, 166 m
Distribution: new species similar to *R. speciosa*
Reference: Chen (1989)

Superfamily Majoidea

Epialtidae

The family name Epialtidae is used to include what were previously treated as subfamilies Epialtinae and Pisinae of Majidae. We follow the arrangement of Ng et al. (2008). Taxonomy follows Griffin and Tranter (1986) who reviewed the fauna and provided keys to Majidae in the broadest sense. Reference to older and more recent papers was required for some genera (Griffin, 1970, 1973; Guinot and Richer de Forges, 1982, 1985). The 14 species include several new records, one from Australia, and three new species under study by B. Richer de Forges.

Austrolibinia gracilipes (Miers, 1879)

MoV sp. 5162
Records: 4 specimens, 20°59´S, 100 m
Distribution: Indonesia, PNG, N Australia; first record for S WA
Reference: Miers (1879: pl. 4, fig. 4) [photo below]

Griffinia lappacea (Rathbun, 1918)

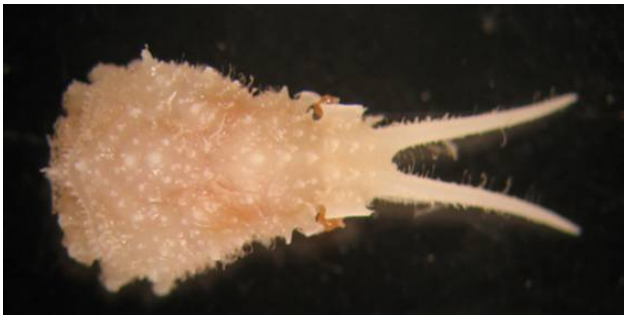
MoV sp. 5173
Records: 1 specimen, 34°00´S, 467–490 m
Distribution: Australia
Reference: Griffin and Tranter (1986) [photo below]

Hyastenus convexus Miers, 1884

MoV sp. 5169
Records: 24 specimens, 20°59´S–28°58´S, 95–120 m ✓
Distribution: Indo-West Pacific, N Australia; first record for S WA
Reference: Griffin and Tranter (1986) [photo below]

Lahaina agassizii (Rathbun, 1902)

MoV sp. 5172
Records: 18 specimens, 22°50´S–33°58´S, 96–100 m ✓
Distribution: Indo-West Pacific including Australia
Reference: Griffin and Tranter (1986) [photo below]



Naxioides robillardi (Miers, 1882)

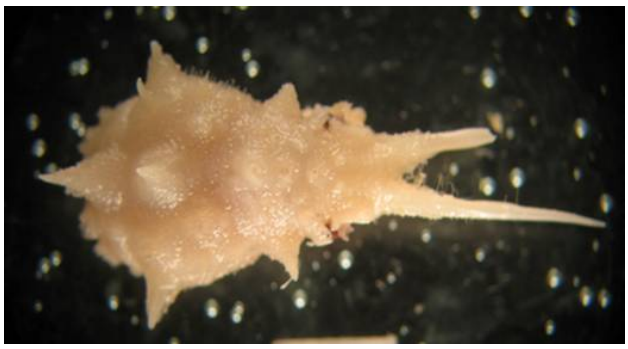
MoV sp. 5174
Records: 1 specimen, 21°58´S, 177–170 m
Distribution: Indo-West Pacific including E Australia; first record for WA
Reference: Poore (2004) [photo below]

Naxioides taurus (Pocock, 1890)

MoV sp. 5165
Records: 1 specimen, 21°01´S, 93 m
Distribution: Indo-West Pacific including N Australia; first record for WA
Reference: Griffin and Tranter (1986) [photo upper right]

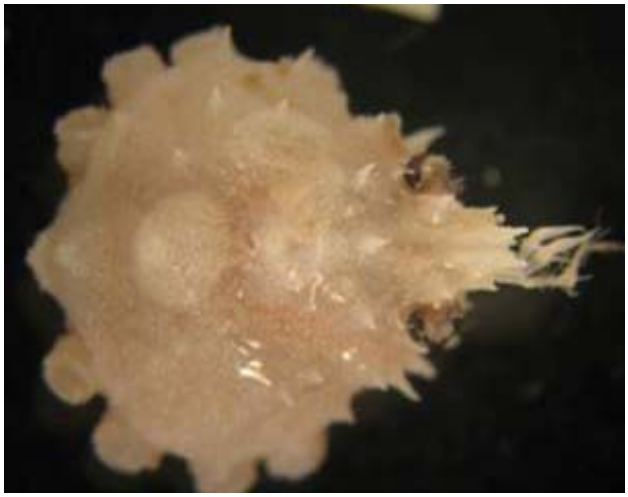
Naxioides tenuirostris (Haswell, 1880)

MoV sp. 5164
Records: 1 specimen, 27°55´S, 253 m
Distribution: Indo-West Pacific including N Australia; first record for WA
Reference: Griffin and Tranter (1986) [photo below]



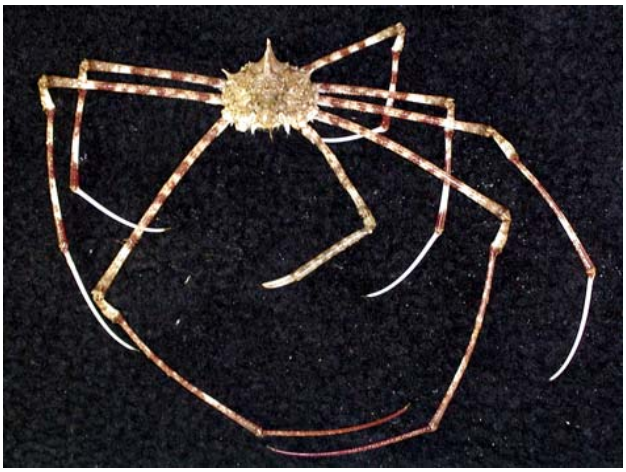
Phalangipus filiformis Rathbun, 1916

MoV sp. 5160
Records: 2 specimens, 20°59´S–22°4´S, 100 m
Distribution: Indo-West Pacific including N Australia; first record for S WA
Reference: Griffin (1973) [photo below]



Phalangipus hystrix (Miers, 1884)

MoV sp. 5161
Records: 27 specimens, 21°58´S–27°48´S, 100–166 m ✓
Distribution: Indo-West Pacific including WA
Reference: Griffin (1973) [photos below]



Rochinia fultoni (Grant, 1905)

MoV sp. 3895
Records: 1 specimen, 27°55´S, 253 m
Distribution: SE Australia; first record for WA
Reference: Poore (2004) [photo below]

Rochinia aff. ***luzonica*** (Rathbun, 1916)

MoV sp. 5168
Records: 5 specimens, 29°00´S–31°37´S, 329–439 m
Distribution: new species
Reference: Griffin (1976) [photo below]

Rochinia strangeri Serène & Lohavanijaya, 1973

MoV sp. 5538
Records: 1 specimens, 29°3.39´S, 1000–1037 m
Distribution: S China Sea; first record for Australia
Reference: Serène and Lohavanijay (1973) (det. B. Richer de Forges)

Rochinia sp. MoV 5119

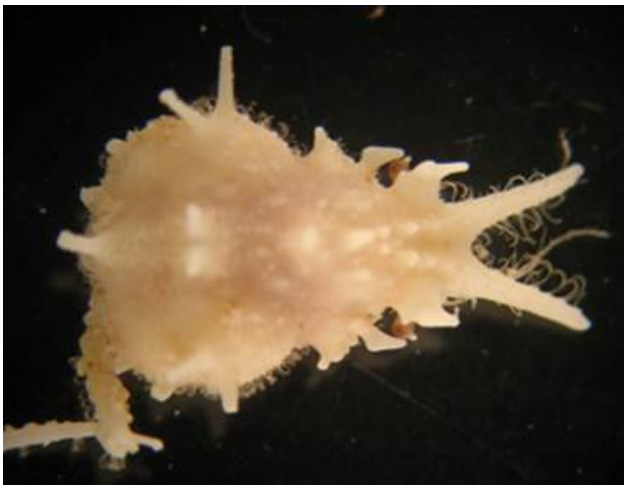
Records: numerous specimens, 29°52´S–35°04´S, 329–414 m
Distribution: new species
Reference: Griffin and Tranter (1986)

Rochinia sp. MoV 5136

Records: 3 specimens, 21°58´S–23°59´S, 324–411 m
Distribution: new species close to "*Sphenocarcinus carbunculus* Rathbun, 1906" from Hawaii
Reference: Rathbun (1906)

Epialtid sp. MoV 5134

Records: 1 specimen, 33°58´S, 96 m
Distribution: new species, genus uncertain, possibly *Thycanophrys*
Reference: Griffin and Tranter (1986) [photo below]



Hymenosomatidae

One of the two species could not be identified beyond genus from Lucas (1980) or Ng and Chuang (1996).

Halicarcinus sp. MoV 5002

Records: 3 specimens, 28°58´S–35°10´S, 86–107 m
Distribution: new species
References: Lucas (1980), Ng and Chuang (1996) [photo below]

Trigonoplax longirostris McCulloch, 1908

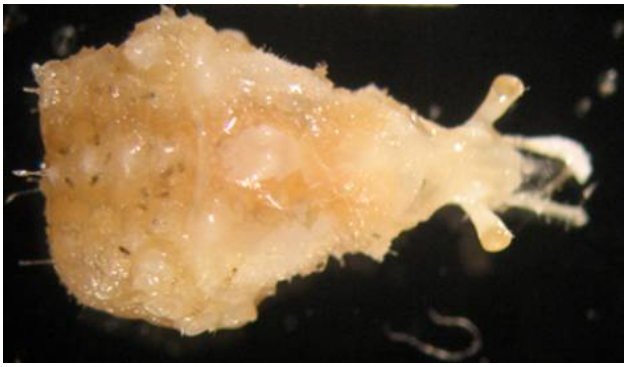
MoV sp. 1678
Records: 1 specimen, 31°43´S, 102 m
Distribution: Australia; recorded at depth
Reference: Lucas (1980) [photo below]

Inachidae

The Inachidae were treated as a subfamily of Majidae in earlier literature but are elevated to family rank in this report as advocated by Ng et al. (2008). Taxonomy follows Griffin and Tranter (1986) who reviewed the fauna and provided keys to Majidae in the broadest sense. Inachidae include 20 species of which two are new and three are new Australian records. Reference to older and more recent papers was required for some genera (Griffin, 1970, 1973).

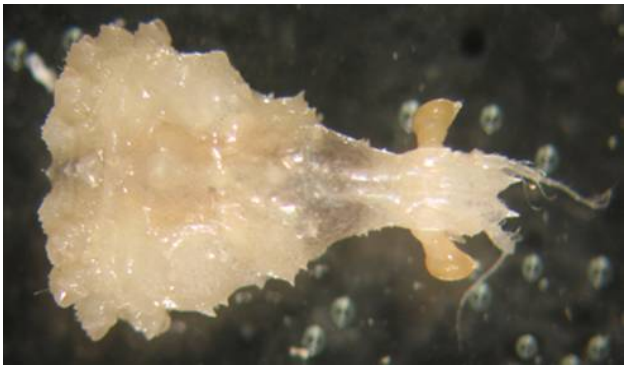
Achaeus brevirostris (Haswell, 1879)

MoV sp. 5347
Records: 3 specimens, 21°58´S–27°48´S, 100–123 m
Distribution: Indo-West Pacific including Australia
Reference: Griffin and Tranter (1986) [photo below]



Achaeus curvirostris (Milne Edwards, 1873)

MoV sp. 3851
Records: 4 specimens, 27°48´S–33°02´S, 95–123 m
Distribution: Indo-West Pacific including Australia
Reference: Griffin and Tranter (1986) [photo below]



Achaeus lacertosus Stimpson, 1857

MoV sp. 5150
Records: 4 specimens, 21°58´S–27°48´S, 100–123 m
Distribution: Indo-West Pacific including Australia; new record for S WA
Reference: Griffin and Tranter (1986)

Achaeus sp. MoV 5122

Records: 2 specimens, 22°50´S–27°48´S, 123–100 m
Distribution: new species
Reference: Griffin and Tranter (1986)

Achaeus sp. MoV 5123

Records: 3 specimens, 27°48.29´S, 123–112 m ✓
Distribution: recorded as undescribed species by Griffin
Reference: Griffin (1970)

Camposcia retusa Latreille, 1829

MoV sp. 5151
Records: 1 specimens, 31°43.28´S, 102 m
Distribution: Indo-West Pacific including Australia; new record for S WA

Reference: Griffin and Tranter (1986) [photo below]

Cyrtomaia maccullochi Rathbun, 1918

MoV sp. 5146
Records: 34 specimens, 27°08´S–35°12´S, 378–728 m
Distribution: Indo-West Pacific including Australia
Reference: Griffin and Tranter (1986) [photo below]

Cyrtomaia murrayi Miers, 1886

MoV sp. 5147
Records: 3 specimens, 27°55´S–31°37´S, 252–404 m
Distribution: Indo-West Pacific including Australia
Reference: Griffin and Tranter (1986) [photo upper right]

Dorhynchus ramusculus (Baker, 1906)

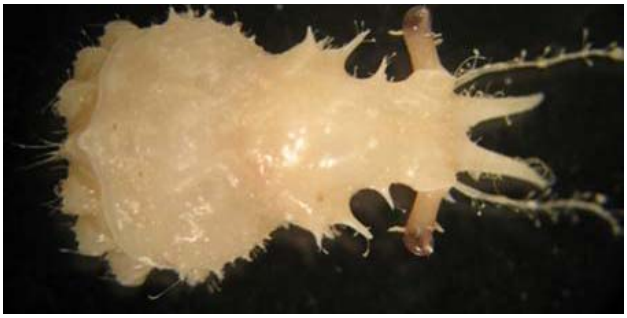
MoV sp. 5159
Records: 10 specimens, 29°52.04´S–35°21.53´S, 212–490 m
Distribution: New Zealand, S Australia
References: Poore (2004) [photo below]

Dumea latipes (Haswell, 1880)

MoV sp. 1338
Records: 3 specimens, 31°43´S, 102 m
Distribution: S Australia
References: Poore (2004)

Ephippias endeavouri Rathbun, 1918

MoV sp. 5158
Records: 4 specimens, 31°43´S–35°22´S, 102–196 m
Distribution: SE and SW Australia
References: Poore (2004) [photo below]

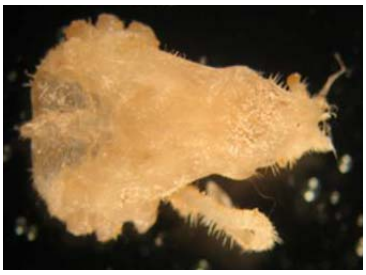


Grypachaeus hyalinus Alcock & Anderson, 1894

MoV sp. 5148
Records: 2 specimens, 20°59.05´S–24°01´S, 100 m
Distribution: Indian Ocean, new Australian record
References: Griffin and Tranter (1986) [photo below]

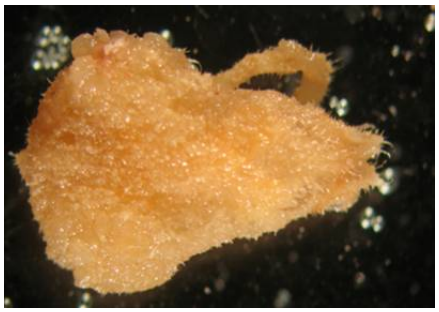
Oncinopus aranea De Haan, 1839

MoV sp. 5154
Records: 1 specimen, 27°08´S, 414–405 m
Distribution: W Pacific, including Australia
References: Poore (2004) [photo below]



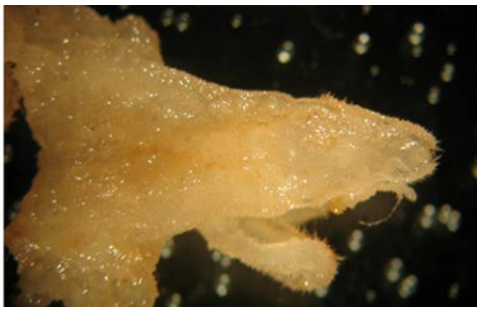
Oncinopus cf. ***angustifrons*** Takeda & Miyake, 1969

MoV sp. 5120
Records: 3 specimens, 24°01´S–31°43´S, 100–183 m
Distribution: Japan, Phillipines, new Australian record if correctly identified
References: Griffin and Tranter (1986) [photo below]



Oncinopus neptunus Adams & White, 1848

MoV sp. 5155
Records: 6 specimens, 24°37´S–, 31°43´S, 95–100 m
Distribution: Indo-West Pacific, including Australia
References: Poore (2004) [photo upper right]



Physachaeus ctenurus Alcock, 1895

MoV sp. 5149
Records: 56 specimens, 29°52´S–35°21´S, 364–528 m
Distribution: Andaman Sea, new Australian record
References: Griffin and Tranter (1986) [photos below]

Platymaia wyvillethomsoni Miers, 1886

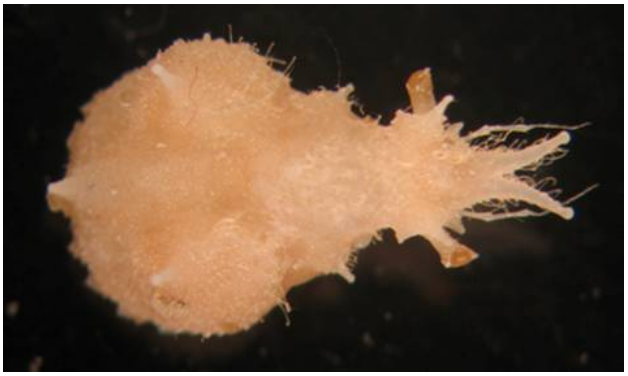
MoV sp. 5157
Records: 24 specimens, 23°59´S–35°12´S, 364–431m
Distribution: West Pacific, Australia
References: Guinot and Richer de Forges (1985) [photo below]

Platymaia fimbriata Rathbun, 1916

MoV sp. 5156
Records: 1 specimen, 21°58´S, 726–732 m
Distribution: West Pacific, Australia
References: Guinot and Richer de Forges (1985)

Sunipea indicus (Alcock, 1895)

MoV sp. 5171
Records: 14 specimens, 22°51´S–29°48´S, 85–123m
Distribution: Andaman Sea, new Australian record
References: Griffin and Tranter (1986) [photo below]

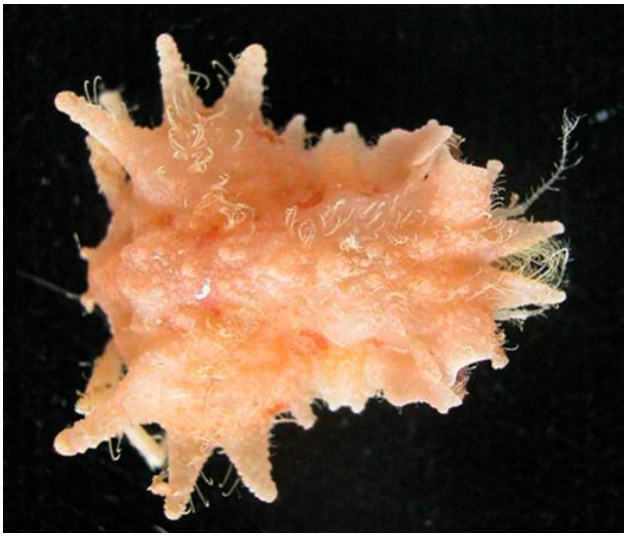


Majidae

The family name Majidae is used in this report in the narrow sense advocated by Ng et al. (2008). The subfamilies used by, for example Davie (2002), are treated as families: Epialtinae and Pisinae together as Epialtidae; Planoterginae and Majinae as Majidae; and Inachinae as Inachidae. Taxonomy follows Griffin and Tranter (1986) who reviewed the fauna and provided keys to Majidae in the broadest sense. Forty-eight species of majids in the broadest sense were recognised of which 14 belong to Majidae s. s. Five species are new records of Indo-West Pacific species in Australia and four are new species.

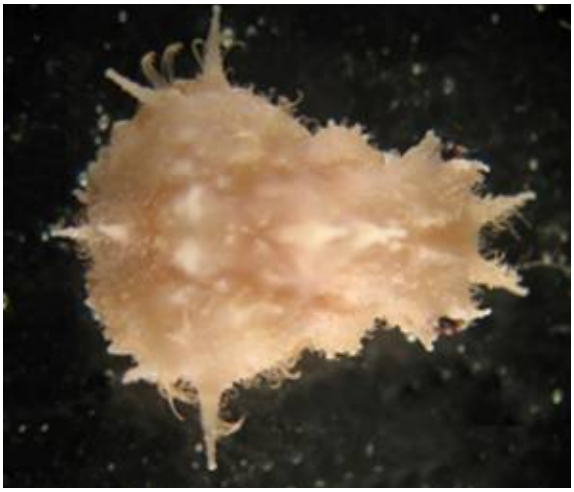
Entomonyx depressus Sakai, 1974

MoV sp. 5167
Records: 5 specimens, 22°50´S, 100 m
Distribution: Japan; new record for Australia
Reference: Griffin and Tranter (1986) [photo below]



Entomonyx spinosus Miers, 1884

MoV sp. 5166
Records: 13 specimens, 22°50´S–35°21´S, 100–179 ✓
Distribution: Indo-West Pacific including N WA; first record for S WA
Reference: Griffin and Tranter (1986) [photo below]



Leptomithrax globifer Rathbun, 1918

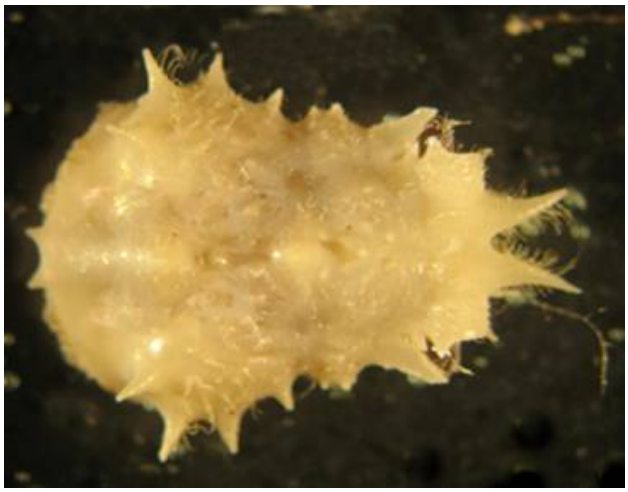
MoV sp. 5144
Records: 17 specimens, 35°37´S–35°22´S, 99–196 m
Distribution: S Australia; first positive record for S WA
Reference: Poore (2004) [photo below]

Leptomithrax sternocostulatus (Milne Edwards, 1851)

MoV sp. 0703
Records: 5 specimens, 28°58´S–35°37´S, 86–106 m ✓
Distribution: S Australia
Reference: Poore (2004) [photo below]

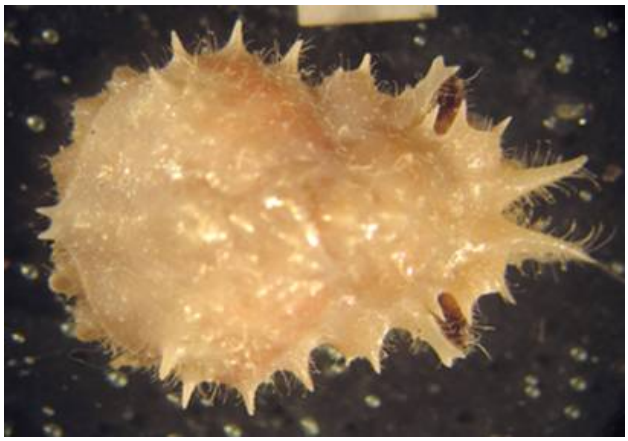
Leptomithrax sp. MoV 5133

Records: 1 specimen, 27°48´S, 123–112 m
Distribution: new species
Reference: Griffin and Tranter (1986) [photo upper right]



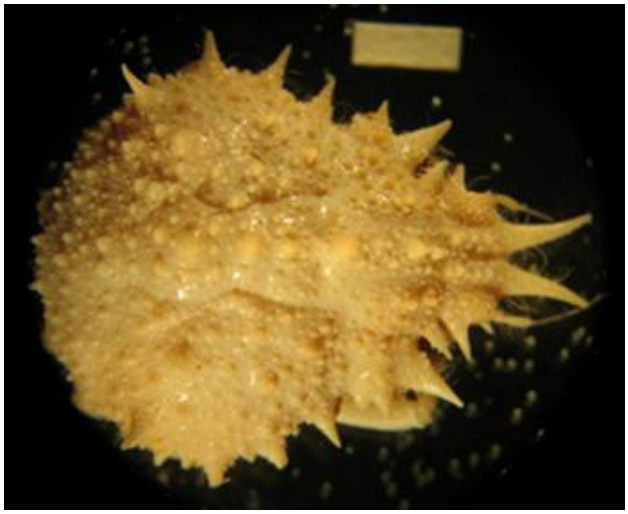
Leptomithrax sp. MoV 5121

Records: 3 specimens, 28°59´S–34°49´S, 50–232 m
Distribution: new species
Reference: Griffin and Tranter (1986) [photo below]



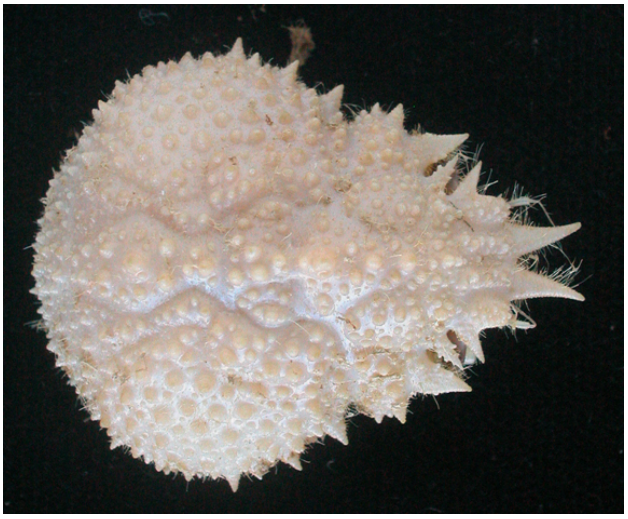
Maja confragosa Griffin & Tranter, 1986

MoV sp. 5152
Records: 1 specimen, 22°37´S, 355–382 m
Distribution: Indonesia; new record for Australia
Reference: Griffin and Tranter (1986) [photo below]



Maja gibba Alcock, 1895

MoV sp. 5145
Records: 1 specimen, 22°37´S, 355–382 m
Distribution: West Pacific; first record for Australia
Reference: Griffin and Tranter (1986) [photo below]



Maja suluensis Rathbun, 1916

MoV sp. 5143
Records: 1 specimen, 24°02´S, 100 m
Distribution: Indonesia; first record for Australia
Reference: Griffin and Tranter (1986) [photo below]

Planotergum mirabile Balss, 1935

MoV sp. 5153
Records: 1 specimen, 28°58´S, 85 m ✓
Distribution: Indo-West Pacific including Australia
Reference: Davie (2002) [photo upper right]

Prismatopus brevispinosus Yokoya, 1933

MoV sp. 5298
Records: 5 specimens, 31°36´S, 329–370 m
Distribution: Japan; first record for Australia
Reference: Sakai (1976: 251) [photo below]

Prismatopus occidentalis Griffin, 1970

MoV sp. 5163
Records: 12 specimens, 27°55´S–35°20´S, 179–253 m
Distribution: WA endemic
Reference: Poore (2004) [photo below]

Prismatopus sp. MoV 5125

Records: 1 specimen, 24°37´S, 100 m ✓
Distribution: new species
Reference: Griffin and Tranter (1986) [photo below]

Superfamily Palicoidea

Palicidae

In spite of the recent thorough study by Castro (2000), two of the five species could not be confidently identified beyond genus.

Micropalicus vietnamensis (Zarenkov, 1968***)***

MoV sp. 5058
Records: 5 specimens, 21°58´S–22°00´S, 170–754 m
Distribution: West Pacific, NW Australia
References: Castro and Davie (2003) [photo below]

Neopalicus jukesii (White, 1847)

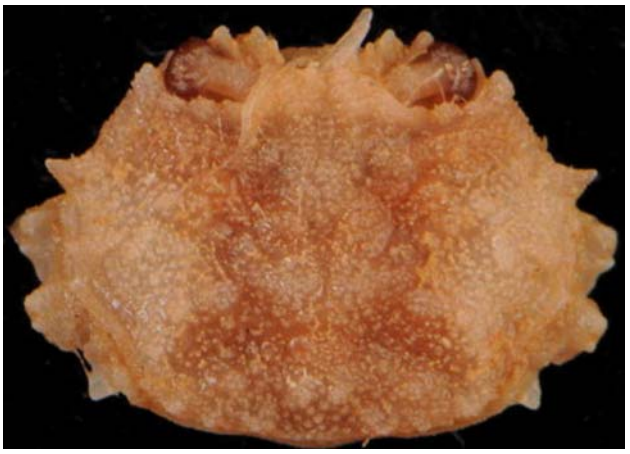
MoV sp. 5000
Records: 1 specimen, 27°48´S, 123–112 m
Distribution: West Pacific, NW Australia
References: Castro and Davie (2003)

Paliculus kyusyuensis (Yokoya, 1933)

MoV sp. 5057
Records: 5 specimens, 23°59´S–24°33´S, 388–412 m
Distribution: Indo-West Pacific, Qld, Australia
References: Castro and Davie (2003)

Parapalicus sp. MoV 4999

Records: 25 specimens, 20°59´S–22°04´S, 100–177 m
Distribution: new species
References: Castro (2000) [photo below]



Pseudopalicus macromeles Castro, 2000

MoV sp. 5056
Records: 10 specimens, 27°55´S–35°20´S, 194–252 m ✓
Distribution: Australia
References: Castro (2000) [photo below]

Superfamily Parthenopoidea

Parthenopidae

Nine species were collected, of which only three could be confidently identified. Generic placement was made with reference to Sakai (1976) whose keys reflect those in Flipse (1930). Species identifications referred to Ng (1996), Garth and Davie (1995), Davie and Turner (1994) and Ahyong (2008).

Aulacolambrus sp. MoV 5014

Records: 2 specimens, 20°59´S, 100 m
Distribution: new species like *A. sibogae*
Reference: Flipse (1930)

Garthambrus cf. ***lacunosa*** (Rathbun, 1906)

MoV sp. 5011
Records: 1 specimen, 31°36´S, 329–370 m
Distribution: new species close to Hawaian *G. lacunosa* and *G. tani* Ahyong, 2008
References: Ng (1996), Ahyong (2008)

Garthambrus cf. ***stellatus*** (Rathbun, 1906)

MoV sp. 5063
Records: 1 specimen, 22°37´S, 355–382 m
Distribution: identification of Hawaian species uncertain
Reference: Ng (1996) [photo below]

Parthenope chondrodes Davie & Turner, 1994

MoV sp. 5010
Records: 7 specimens, 20°59´S–25°55´S, 100–120 m
Distribution: WA; new record for S WA
Reference: Davie and Turner (1994) [photo below]

Platylambrus validus De Haan, 1837

MoV sp. 5065
Records: 2 specimens, 21°59´S–31°55´S, 165–232 m
Distribution: West Pacific including NE Australia; first record for WA
Reference: Campbell and Stephenson (1970)

Pseudolambrus sp. MoV 5009

Records: 18 specimens, 22°50´S–27°48´S, 123–100 m ✓
Distribution: new species like *P. beaumonti*
Reference: Sakai (1976: 276, key)

Rhinolambrus sp. MoV 5012

Records: 1 specimen, 27°48´S, 123–112 m ✓
Distribution: new species like *R. spinifer*
Reference: Flipse (1930)

Thyrolambrus excavatus Baker, 1905

MoV sp. 5064
Records: 8 specimens, 27°48´S–35°10´S, 85–169 m
Distribution: S Australia; new record for WA
Reference: Baker (1905) [photo below]

Parthenopid sp. MoV 5015

Records: 2 specimens, 35°11´S, 157–147 m
Distribution: new species not readily assigned to genus
Reference: Flipse (1930)

Superfamily Pilumnoidea

Pilumnidae

Three subfamilies were represented by 21 species. Half (ten species) are probably new species. Genera are listed alphabetically and subfamily names appear after species names.

Subfamily Eumedoninae was represented by one well-known species.

Subfamily Pilumninae included 15 species of which seven could be provisionally identified by P. Davie. Five are new records for WA. Where no reference is given, identification relies on P. Davie's unpublished notes.

Subfamily Rhizopinae was represented by five species, two identifiable to species but neither previously recorded from Australia (Tesch, 1918; Ng, 1987).

Bathypilumnus pugilator (Milne Edwards, 1873) (Pilumninae)

MoV sp. 5095
Records: 2 specimens, 24°01´S, 100 m
Distribution: New Caledonia, Qld; first record for WA
Reference: Davie (1989)

Caecopilumnus piroculatus (Rathbun, 1911) (Rhizopinae)

MoV sp. 5090
Records: 1 specimen, 27°48´S, 98 m
Distribution: Indonesia; first record for Australia

Cryptolutea arafurensis Davie & Humpherys, 1997 (Rhizopinae)

MoV sp. 5085
Records: 1 specimen, 22°04´S, 106–101 m
Distribution: N Australia; first record for S WA
Reference: Davie and Humpherys (1997)

Eumedonus niger Milne Edwards, 1834 (Eumedoninae)

MoV sp. 5111
Records: 2 specimens, 27°03´S–27°48´S, 106–123 m
Distribution: West Pacific including Australia
Reference: Chia and Ng (2000) [photo below]

Heteropilumnus sp. MoV 5101 (Rhizopinae)
Records: 3 specimens, 25°54´S–35°22´S, 100–196 m ✓
Distribution: new species
Reference: Ng (1987)

Lophoplax sp. MoV 5105 (Pilumninae)
Records: 1 specimen, 21°01´S, 93 m
Distribution: synonymous with a new genus and species from N Australia (P. Davie, pers. comm.)
Reference: Tesch (1918)

Mertonia lanka Laurie, 1906 (Rhizopinae)
MoV sp. 5091
Records: 1 specimen, 24°01´S, 100 m
Distribution: Indian Ocean; first record for Australia

Paraselwynia sp. MoV 5089 (Rhizopinae)
Records: 1 specimen, 33°58´S, 96 m
Distribution: new species, generic assignment problematic
Reference: Tesch (1918)

Pilumnopeus sp. MoV 5106 (Pilumninae)
Records: 1 specimen, 22°02´S, 106 m
Distribution: new species

Pilumnus cf. ***haswelli*** De Man, 1888 (Pilumninae)
MoV sp. 5104
Records: 1 specimen, 21°01´S, 93 m
Distribution: first record for Australia if correctly identified

Pilumnus cf. ***hirsutus*** Stimpson, 1858 (Pilumninae)
MoV sp. 5098
Records: 4 specimens, 20°59´S–27°03´S, 100–414 m
Distribution: new record for Australia

Pilumnus kingstoni (Rathbun, 1923) (Pilumninae)
MoV sp. 5097
Records: 8 specimens, 27°55´S–35°22´S, 105–253 m ✓
Distribution: S Australia; first record for WA
Reference: Poore (2004) [photo below]

Pilumnus cf. ***propinquus*** Nobili, 1905 (Pilumninae)
MoV sp. 5297
Records: 2 specimens, 25°54´S, 100 m
Distribution: new record for Australia

Pilumnus cf. ***schellenbergi*** Balss, 1933 (Pilumninae)
MoV sp. 5100
Records: 2 specimens, 21°59´S, 166 m
Distribution: new record for Australia [photo below]

Pilumnus cf. ***spinicarpus*** Grant & McCulloch, 1906 (Pilumninae)
Records: 24 specimens, 21°57´S–29°48´S, 100–183 m ✓
Distribution: N Australia; new record for S WA if correctly identified [photo below]

Pilumnus sp. MoV 5094 (Pilumninae)
Records: 1 specimens, 21°59´S, 166 m
Distribution: new species

Pilumnus sp. MoV 5099 (Pilumninae)
MoV sp. 5099
Records: 4 specimens, 20°59´S–28°59´S, 100–183 m ✓
Distribution: new species [photo below]

Pilumnus sp. MoV 5103 (Pilumninae)
Records: 1 specimen, 21°59´S, 166 m
Distribution: new species

Pilumnus sp. MoV 5474 (Pilumninae)
Records: 1 specimen, 24°37´S, 100 m
Distribution: new species

Pilumnus sp. MoV 5475 (Pilumninae)
Records: 1 specimen, 27°48´S, 123–112 m
Distribution: new species

Pilumnid sp. MoV 4995 (Pilumninae)
Records: 1 specimen, 31°58´S, 848–1050 m
Distribution: new species [photo below]

Superfamily Portunoidea

Portunidae

Twenty-five species of swimming crabs were found, four not identifiable to species and one probably belonging to a new genus according to V. Spiridonov who examined some specimens. Half of the species are widespread in the Indo-West Pacific but only a few are newly recorded from Australia or WA. Identification was largely possible with reference to Stephenson (1972) and the earlier papers by this author but Wee and Ng (1995) was useful for *Charybdis* in particular and Davie and Crosnier (2006) for a recently described species.

Charybdis (Charybdis) miles (De Haan, 1835)
MoV sp. 5127
Records: 4 specimens, 21°58´S–21°59´S, 165–177 m
Distribution: Indo-West Pacific including N and E Australia; first record for WA
Reference: Poore (2004) [photo below]

Charybdis (Goniohellenus) hongkongensis Shen, 1934
MoV sp. 5190
Records: 1 specimen, 24°37´S, 100 m
Distribution: West Pacific; first record for Australia
Reference: Wee and Ng (1995) [photo below]

Echinolatus poorei Davie & Crosnier, 2006
MoV sp. 5141
Records: 22 specimens, 34°53´S–35°22´S, 95–484 m
Distribution: S Australia; first record for WA

Reference: Davie and Crosnier (2006) [photo below]

Libystes paucidentatus Stephenson & Campbell, 1960

MoV sp. 5188

Records: 1 specimen, 21°58´S, 177–170 m

Distribution: New Guinea, Qld; first record for WA

Reference: Stephenson (1972) [photo below]

Liocarcinus corrugatus (Pennant, 1777)

MoV sp. 5128

Records: 10 specimens, 24°37´S–27°48´S, 96–123 m

Distribution: Indo-West Pacific including Australia

Reference: Poore (2004)

Lissocarcinus orbicularis Dana, 1852

MoV sp. 5441

Records: 1 specimen, 22°50´S, 100 m

Distribution: Indo-West Pacific including Australia (from gut of holothurian)

Reference: Sakai (1976) [photo upper right]

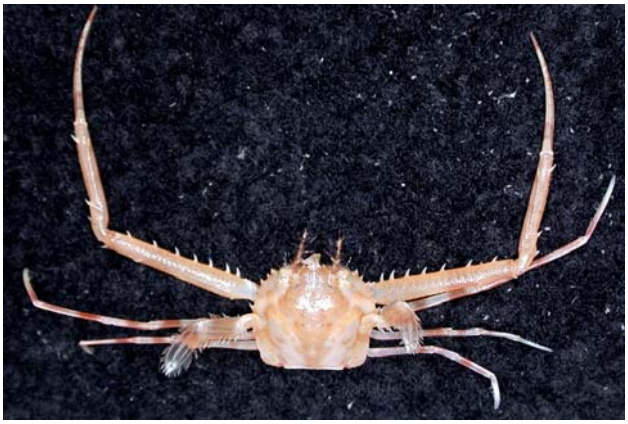
Lupocyclus philippinensis Semper, 1880

MoV sp. 5130

Records: 14 specimens, 20°59´S–24°37´S, 100–107 m ✓

Distribution: Indo-West Pacific including NE Australia; first record for WA

Reference: Leene (1940) [photo below]



Lupocyclus quinquedentatus Rathbun, 1906

MoV sp. 5142

Records: 1 specimen, 25°54´S, 100 m

Distribution: West Pacific; first record for Australia

Reference: Leene (1940) [photo below]

Lupocyclus sp. aff. ***tugelae*** Barnard, 1950

MoV sp. 5185

Records: 6 specimens, 21°59´S–27°48´S, 100–166 m

Distribution: new species close to *L. tugelae* (Indo-West Pacific including N WA)

Reference: Barnard (1950) [photo below]

Nectocarcinus spinifrons Stephenson, 1961

MoV sp. 5129

Records: 12 specimens, 24°37´S–33°02´S, 95–102 m

Distribution: SW Australia

Reference: Poore (2004) [photo below]

Ovalipes elongatus Stephenson & Rees, 1968

MoV sp. 5192

Records: 1 specimen, 35°21´S, 91 m

Distribution: New Zealand, Lord Howe; first record for WA

Reference: Stephenson (1972) [photo upper right]

Ovalipes iridescens (Miers, 1886)

MoV sp. 5132

Records: 79 specimens, 22°37´S–27°48´S, 355–1010 m

Distribution: Indo-West Pacific including Vic.; first record for WA

Reference: Stephenson (1972) [photo below]

Parathranites orientalis (Miers, 1886)

MoV sp. 5031

Records: many specimens, 21°59´S–30°59´S, 100–183 m ✓

Distribution: Indo-West Pacific including E Australia; first record for WA

Reference: Stephenson (1972) [photo next page]

Parathranites sp. MoV 5290
Records: 7 specimens, 22°50´S, 100 m
Distribution: new species? (det. V. Spiridonov) [photo below]

Portunus aff. ***argentatus*** (Milne Edwards, 1861)
MoV sp. 5287
Records: 45 specimens, 21°57´S–22°04´S, 101–107 m
Distribution: new species? (det. V. Spiridonov) [photo below]

Portunus (Monomia) haanii (Stimpson, 1858)
MoV sp. 5125
Records: 18 specimens, 22°04´S–33°58´S, 96–102 (1085) m
Distribution: Indo-West Pacific including Australia
Reference: Poore (2004) [photo below]

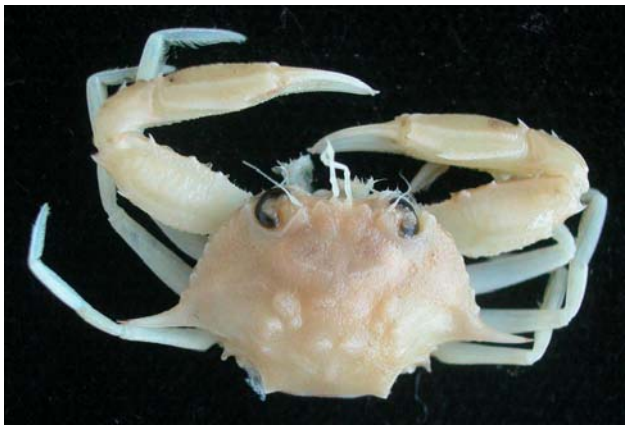
Portunus (Xiphonectes) hastatoides Fabricius, 1798
MoV sp. 5189
Records: 1 specimen, 21°59´S, 166 m
Distribution: Indo-West Pacific including Australia
Reference: Stephenson (1972) [photo below]

Portunus (Xiphonectes) longispinosus (Dana, 1852)
MoV sp. 5191
Records: 36 specimens, 22°50´S–24°01´S, 100 m
Distribution: Indo-West Pacific including N Australia; first record for WA – a species complex according to Davie
Reference: Davie (2002) [photo below]

Portunus aff. ***orbitosinus*** Rathbun, 1911
MoV sp. 5288
Records: 1 specimen, 21°58´S, 107 m
Distribution: new species? (det. V. Spiridonov) [photo next page]

Portunus nipponensis (Sakai, 1938)
MoV sp. 5126
Records: 1 specimen, 22°50´S, 100 m ✓
Distribution: Japan; first record for WA
Reference: Stephenson (1972) [photo below]

Portunus (Xiphonectes) pulchicristatus (Gordon, 1931)
MoV sp. 5184
Records: many specimens, 20°59´S–21°59´S, 100–166 m ✓
Distribution: Indo-West Pacific including NW Australia; first record for WA
Reference: Davie (2002) [photo upper right]



Thalamita macropus Montgomery, 1931
MoV sp. 5187
Records: 20 specimens, 21°59´S–33°58´S, 85–210 m ✓
Distribution: N Australia
Reference: Poore (2004) [photo below]

Thalamita sexlobata Miers, 1886
MoV sp. 5186
Records: 1 specimens, 27°48´S, 123–112 m
Distribution: Indo-West Pacific including Qld; first record for WA
Reference: Stephenson (1972) [photo below]

Thalamita spinifera Borradaile, 1902

MoV sp. 5291

Records: 3 specimens, 20°59´S–27°48´S, 100–123 m

Distribution: Indo-West Pacific including Cartier Reef; first record for S WA (det. V. Spiridonov)

Reference: Short and Davie (1993) [photo below]

Portunid sp. MoV 5289

Records: 5 specimens, 35°21´S, 91 m

Distribution: probable new genus and new species (det. V. Spiridonov) [photo below]

Superfamily Retroplumidae

Retroplumidae

A single species, doubtfully identified using de Saint Laurent (1989) is the first record of the family from Australia.

Retropluma cf. ***quadrata*** de Saint Laurent, 1989

MoV sp. 5093

Records: 1 specimen, 21°58´S, 373–382 m ✓

Distribution: if correctly identified, first Australian record for W Pacific species

Reference: de Saint Laurent (1989)

Superfamily Trapezioidea

Trapeziidae

The only species is recorded for the first time from Australia (Castro et al., 2004).

Quadrella reticulata Alcock, 1898

MoV sp. 5059

Records: 6 specimens, 21°57´S–27°48´S, 96–104 m ✓

Distribution: Indo-West Pacific; first record for Australia

Reference: Castro et al. (2004) [photo below]

Superfamily Xanthoidea

Panopeidae

A single species was identified using Ng's (1998) key to families and Davie (2002).

Homoioplax haswelli (Miers, 1884)

MoV sp. 5485

Records: 1 specimen, 21°58´S, 177–170 m

Distribution: Indo-West Pacific including N Australia; first record for S WA

Reference: Davie (2002)

Xanthidae

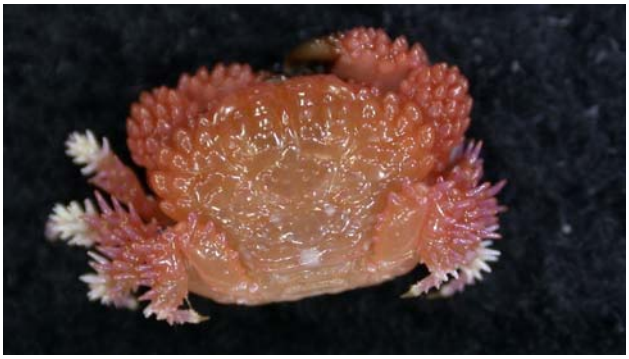
Eighteen species were found but proved difficult to identify using the standard text (Serène, 1984). With the help of Peter Davie, Queensland Museum, 13 taxa were identified to species or probable species using his unpublished notes. Of those that were identified to species, five are new Australian records.

Actaea calculosa (Milne Edwards, 1834)

MoV sp. 5116
Records: 1 specimen, 33°58´S, 96 m
Distribution: Australia
Reference: Poore (2004) [photo below]

Actaea peronii Milne Edwards, 1834

MoV sp. 1656
Records: 6 specimens, 33°02´S–35°20´S, 95–100 m
Distribution: Australia
Reference: Poore (2004) [photo below]



Atergatopsis cf. ***alcocki*** (Laurie, 1906)

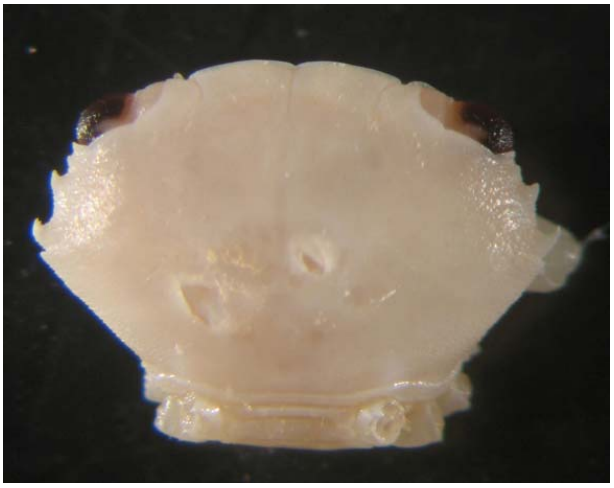
MoV sp. 5117
Records: 2 specimens, 21°59´S, 166 m
Distribution: Indo-West Pacific including Qld; first record for Australia (det. P. Davie)
Reference: Sakai (1976) [photo below]

Calvactaea tumida Ward, 1933

MoV sp. 5083
Records: 1 specimen, 22°04´S, 106–101 m
Distribution: Indo-West Pacific including Australia
Reference: Poore (2004) [photo below]

Chlorodiella laevissima (Dana, 1852)

MoV sp. 5110
Records: 2 specimens, 27°03´S, 97 m
Distribution: Indo-West Pacific including Australia
Reference: Serène (1984: pl. 36D) [photo below]



Demania wardi Garth & Ng, 1985

MoV sp. 5071
Records: 1 specimen, 21°59´S, 166 m
Distribution: West Pacific including Qld; first record for WA (det. P. Davie)
Reference: Davie (1989) [photo below]

Medaeus sp. MoV 5081

Records: 1 specimen, 21°59´S,166 m
Distribution: new species (det. P. Davie) [photo upper right]

Monodaeus tuberculidens (Rathbun, 1911)

MoV sp. 5075
Records: 3 specimens, 21°59´S–21°56´S, 132–166 m
Distribution: E Indian Ocean; first record for Australia (det. P. Davie) [photo below]

Nanocassiope sp. MoV 5087

Records: 1 specimen, 31°43´S, 102 m
Distribution: new species (det. P. Davie) [photo below]

Nanocassiope sp. MoV 5299

Records: many specimens, 20°59´S–31°43´S, 85–120 m ✓
Distribution: new species close to *N. alcocki (*Rathbun, 1902). Several colour morphs were separated in some stations but colour and morphology of the anterolateral carapace could not be correlated by Poore.

Reference: Serène (1984: 209 for *alcocki*)) [photo below]

Novactaea cf. ***michaelseni*** (Odhner, 1925)
MoV sp. 5074
Records: 9 specimens, 24°37´S–35°11´S, 97–1157 m
Distribution: WA (det. P. Davie) [photo below]

Palapedia pelsartensis (Serène, 1972)
MoV sp. 5219
Records: 1 specimens, 24°01´S, 100 m
Distribution: WA
Reference: Ng (1993) [photo upper right]

Palapedia valentini Ng, 1993
MoV sp. 5118
Records: 1 specimen, 27°48´S, 123–112 m
Distribution: Singapore; new record for Australia
Reference: Ng (1993) [photo below]

Paractaea rufopunctata (Milne Edwards, 1834)
MoV sp. 5073
Records: 1 specimen, 21°59´S, 166 m
Distribution: Indo-West Pacific, Atlantic including Australia (det. P. Davie) [photo next page]

Paractaea sp. MoV 5109

Records: 3 specimens, 29°48´S, 114 m
Distribution: new species (det. P. Davie) [photo below]

Paraxanthias aff. ***pachydactylus*** (Milne Edwards, 1867)

MoV sp. 5076
Records: 4 specimen, 27°55´S, 253 m ✓
Distribution: possible new species close to Indo-West Pacific-Australian species (det. P. Davie) [photo below]

Paraxanthodes cf. ***cumatodes*** (McGilchrist, 1905)

MoV sp. 5072
Records: 1 specimen, 28°59´S, 180–183 m
Distribution: new record for Australia if correctly identified (det. P. Davie) [photo below]

Platypodia cf. ***semigranosa*** (Heller, 1861)

MoV sp. 5082
Records: 1 specimen, 27°48´S, 98 m
Distribution: Indo-West Pacific including Qld; first record for WA (det. P. Davie)

Caridea – shrimps

Seventeen families were represented by 88 nominal species. Twenty (23%) are new species, 13 new records for Australia, 14 new records for WA and 17 new records for S WA. Caridean shrimps can be identified to family and genus using the keys of Holthuis (1993). More recent works apply for some families. Families are arranged alphabetically.

Alpheidae

Eighteen species were separated using the three papers on the Australian fauna by Banner and Banner (1973; 1975; 1982). *Alpheus* and *Synalpheus* are the dominant genera. Eleven species were identified to known species, all widely distributed in the Indo-West Pacific region and already known from WA. Seven species could not be identified because of insufficient material (listed here as new). The family is renowned for cryptic species and a difficult taxonomy.

Alpheopsis aff. ***trispinosa*** (Stimpson, 1861)

MoV sp. 5410
Records: 1 specimen, 33°58´S, 96 m
Distribution: new species slightly different from Indo-West Pacific-Australian species
Reference: Banner and Banner (1982) [photo below]

Alpheopsis sp. MoV 5407

Records: 1 specimen, 21°59´S, 166 m
Distribution: new species
Reference: Banner and Banner (1973)

Alpheopsis sp. MoV 5408

Records: 2 specimens, 22°50.55´S–31°37´S, 100–210 m
Distribution: new species
Reference: Banner and Banner (1973)

Alpheus alcyone De Man, 1902

MoV sp. 5419
Records: 1 specimen, 22°51´S, 100 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1982: 110)

Alpheus hailstonei Coutière, 1905

MoV sp. 5420
Records: 34 specimens, 27°48´S–35°11´S, 95–210 m
Distribution: Indo-West Pacific, including WA
Reference: Banner and Banner (1982: 38) [photos upper right]

Alpheus paralcyone Coutière, 1905

MoV sp. 5418
Records: 2 specimens, 20°59´S–25°54´S, 100 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1982: 113)

Alpheus parasocialis Banner & Banner, 1982

MoV sp. 0722
Records: 2 specimens, 35°14´S, , 728–710 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1982: 72)

Alpheus sp. MoV 5403

Records: 8 specimens, 22°50´S–25°54´S, 100 m ✓
Distribution: new species close to Australian *A. heronicus*
Reference: Banner and Banner (1982)

Alpheus sp. MoV 5405

Records: 2 specimens, 35°10´S, 97 m
Distribution: new speciess close to Australian *A. rapacida*
Reference: Banner and Banner (1982)

Alpheus sp. MoV 5406

Records: 13 specimens, 21°58´S–27°08´S, 373–414 m
Distribution: new species
Reference: Banner and Banner (1982)

Alpheus sp. MoV 5409

Records: 8 specimens, 35°20´S–35°37´S, 99–179 m
Distribution: new species close to *A. distinguendus*
Reference: Banner and Banner (1982) [photo below]

Synalpheus comatularum (Haswell, 1882)

MoV sp. 5413
Records: 5 specimens, 22°50´S–27°48´S, 96–100 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1975) [photo below]

Synalpheus lophodactylus Coutière, 1908

MoV sp. 5417
Records: 5 specimens, 28°58´S, 85 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1975: 350)

Synalpheus neomeris (De Man, 1897)

MoV sp. 5412
Records: 1 specimen, 27°48´S, 123–112 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1975: 357)

Synalpheus neptunus (Dana, 1852)

MoV sp. 5416
Records: 21 specimens, 21°59´S–33°58´S, 96–166 m ✓
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1975: 317) [photo below]

Synalpheus nilandensis Coutière, 1905

MoV sp. 5414
Records: 6 specimens, 22°37´S–25°54´S, 100–382 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1975)

Synalpheus streptodactylus Coutière, 1905

MoV sp. 5415
Records: 8 specimens, 21°58´S–27°48´S, 96–112 m
Distribution: Indo-West Pacific including WA (some taken from crinoid)
Reference: Banner and Banner (1975: 362)

Synalpheus theano De Man, 1910

MoV sp. 5411
Records: 1 specimen, 27°03´S, 106 m
Distribution: Indo-West Pacific including WA
Reference: Banner and Banner (1975: 314)

Anchistioididae

The family was treated by Chace (1993). Our specimen was identified by A.J. Bruce.

Anchistioides willeyi (Borradaile, 1899)

MoV sp. 5424
Records: 1 specimen, 20°59´S, 100 m
Distribution: Indo-West Pacific including GBR, first record for WA
Reference: Chace (1993) ; det. A.J. Bruce

Bathypalaemonellidae

A single known species was recorded (Chace, 1997).

Bathypalaemonella pilosipes Bruce, 1986

MoV sp. 5449
Records: 5 specimens, 29°03´S, 1000–1037 m
Distribution: northern WA and Philippines, previously recorded to 400 m depth; new record for S WA
Reference: Chace (1997)

Bresiliidae

One species previously recorded from NSW was identified using Kensley (1983).

Discias brownae Kensley, 1983

MoV sp. 5428
Records: 1 specimen, 35°11´S, 157–147 m
Distribution: NSW; new record for WA
Reference: Kensley (1983)

Campylonotidae

A single well known southern species was recorded and identified from Poore (2004).

Campylonotus rathbunae Schmitt, 1926

MoV sp. 1806
Records: 5 specimens, 35°22´S–35°22´S, 676–728 m ✓
Distribution: southern Australian, New Zealand
Reference: Poore (2004) [photo below]

Crangonidae

The collection contains ten species of which six belong to known cosmopolitan or Indo-West Pacific species. None of the six are previously recorded from WA and only two from eastern Australia (Poore, 2004). The principal recent reference is by Chace (1984) and good illustrations appeared in De Man (1920). Uncertainty surrounds the specific and generic identification of some taxa.

Aegaeon lacazei (Gourret, 1887)

MoV sp. 1873
Records: 18 specimens, 24°33´S–31°00´S, 100–414 m ✓
Distribution: cosmopolitan; new record for WA
Reference: Chan (1996) [photo below]

Metacrangon sp. MoV 5423

Records: 16 specimens, 31°59´S–35°22´S, 408–728 m
Distribution: new species
Reference: Holthuis (1993) [photo below]

Parapontocaris aspera Chace, 1984

MoV sp. 5349
Records: 9 specimens, 21°58´S–22°04´S, 373–399 m
Distribution: Philippines; new Australian record
Reference: Chace (1984: 31)

Parapontocaris levigata Chace, 1984

MoV sp. 5350
Records: 22 specimens, 21°58´S–22°04´S, 324–399 m ✓
Distribution: Philippines; new Australian record
Reference: Chace (1984: 34) [photo upper right]

Parapontophilus junceus (Bate, 1888)

MoV sp. 5351
Records: 28 specimens, 22°00´S–35°22´S, 539–1077 m
Distribution: Indonesia-Philippines; new Australian record
Reference: Chace (1984: 53) [photo below]

Philocheras sp. MoV 5422

Records: 4 specimens, 21°58´S–25°55´S, 101–120 m ✓
Distribution: new species close to *P. magnicolus*
Reference: Chace (1984); Komai and Chan (2007) [photo below]

Philocheras sp. MoV 5439

Records: 1 specimen, 23°59´S, 411 m
Distribution: new species
Reference: Chace (1984)

Pontocaris pennata Bate, 1888

MoV sp. 5353
Records: 5 specimens, 20°59´S–22°04´S, 102 m
Distribution: Indo-West Pacific, Indonesia; new Australian record
Reference: Chace (1984: 42); De Man (1920: pl. 24, fig. 70) [photo below]

Pontocaris propensalata Bate, 1888
MoV sp. 5354
Records: 2 specimens, 21°59´S, 166 m
Distribution: Philippines, Indonesia, NSW; new record for WA
Reference: Chace (1984: 43); De Man (1920: pl. 24, fig. 71)

Sabinea sp. MoV 5421
Records: 1 specimen, 33°00´S, 421–414 m
Distribution: like *S. indica* but carapace strongly depressed posterior to middorsal crest
Reference: De Man (1920: pl. 25, fig. 75) [photo below]

Eugatonatonotidae

The only species is previously recorded from NW Australia (Chace, 1997).

Eugonatonotus chacei Chan & Yu, 1991
MoV sp. 5429
Records: 1 specimen, 22°04´S, 399–387 m
Distribution: Eastern Pacific, NW Australia; new record for S WA
Reference: Chace (1997: 23) [photo below]

Gyphocrangonidae

Two described species known from Australia, one new Australian record, one newly recorded for S WA, and a fourth identified with some uncertainty to a Japanese species comprise the collection. Komai's recent paper (2004) is comprehensive.

Glyphocrangon lineata Komai, 2004

MoV sp. 5356
Records: 2 specimens, 21°58´S–22°00´S, 658–754 m ✓
Distribution: Indonesia, NW Australia; new record for S WA
Reference: Komai (2004) [photos below]

Glyphocrangon cf. ***perplexa*** Komai, 2004

MoV sp. 5357
Records: 4 specimens, 21°58´S, 726–732 m, stn 159(4)
Distribution: probable new species similar to this Japanese species
Reference: Komai (2004)

Glyphocrangon confusa Komai, 2004

MoV sp. 5355
Records: 1 specimen, 29°00´S, 704–700 m
Distribution: Indonesia, NW Australia; new record for S WA
Reference: Komai (2004: 597) [photo below]

Glyphocrangon sibogae De Man, 1918

MoV sp. 5358
Records: 1 specimens, 21°55´S, 1260–1295 m ✓
Distribution: Indonesia, new Australian record
Reference: Komai (2004) [photos below]

Hippolytidae

Five species were identified with reference to Poore (2004) and Chace (1997). Two were recorded for the first time from WA. Two are new species, one previously recorded from the Tasmanian seamounts.

Eualus sp. MoV 2681

Records: 5 specimens, 35°25´S–35°26´S, 900–980 m
Distribution: Tas. Seamounts; new species
Reference: Poore et al. (1998) [photo below]

Lebbeus sp. MoV 5425

Records: 1 specimen, 35°12´S, 431–408 m
Distribution: new species
Reference: Chace (1997) [photos below]

Lysmata amboinensis (De Man, 1888)

MoV sp. 5359
Records: 1 specimens, 22°50´S, 100 m
Distribution: Indo-West Pacific species; new record for S WA
Reference: Chace (1997) [photos below]

Merhippolyte chacei Kensley, Tranter & Griffin, 1987

MoV sp. 2615
Records: 5 specimens, 35°14´S–35°22´S, 676–728 m
Distribution: NSW, Tas., new WA record
Reference: Kensley et al. (1987) [photo below]

Tozeuma tomentosum (Baker, 1904)

MoV sp. 5361
Records: 16 specimens, 20°59´S–27°03´S,100 m
Distribution: SA (doubtful record from Japan); new WA record
Reference: Chace (1997: 95) [photo below]

Nematocarcinidae

Three of four species of *Nematocarcinus*, previously recorded from WA, could be identified (Hanamura and Evans, 1996; Burukovskii, 2000). The fourth is an undescribed species recorded by Poore (2004).

Nematocarcinus hanamuri Burukovskii, 2000

MoV sp. 5452
Records: 3 specimens, 21°55´S, 1260–1295 m
Distribution: SW Australia
Reference: Burukovskii (2000)

Nematocarcinus productus Bate, 1888

MoV sp. 5450
Records: 2 specimens, 35°31´S–35°31´S, 1073–1110
Distribution: Indo-West Pacific, WA; new record for S WA
Reference: Hanamura and Evans (1996)

Nematocarcinus tenuirostris Bate, 1888

MoV sp. 5451
Records: 1 specimen, 21°55´S, 1260–1295 m
Distribution: Indo-West Pacific, WA
Reference: Hanamura and Evans (1996)

Nematocarcinus sp. MoV 5456

MoV sp. 5456
Records: 2 specimens, 35°16´S–35°31´S, 978–1110 m
Distribution: NSW, Tas.; new species that keys to *N. altus*
Reference: Poore (2004: fig. 17d) [photo below]

Oplophoridae

The seven species include one new record for Australia (Chace, 1986).

Acanthephyra armata Milne Edwards, 1881

MoV sp. 5362
Records: 9 specimens, 21°58´S–22°00´S, 658–1010 m
Distribution: cosmopolitan, WA; new record for S WA
Reference: Wadley and Evans (1992: 13) [photo below]

Acanthephyra faxoni Calman, 1939

MoV sp. 5430
Records: 3 specimens, 21°56´S–22°00´S, 1051–1077 m
Distribution: Indo-West Pacific; new Australian record
Reference: Chace (1986: key)

Acanthephyra quadrispinosa Kemp, 1939

MoV sp. 1840
Records: 7 specimens, 21°55´S–35°04´S, 378–1295 m
Distribution: cosmopolitan, including WA
Reference: Wadley and Evans (1992) [photo below]

Janicella spinicauda (Milne Edwards, 1883)

MoV sp. 5431
Records: 2 specimens, 22°00´S, 983–1010 m
Distribution: cosmopolitan, including WA; new record for S WA
Reference: Hanamura (1987)

Oplophorus gracilirostris Milne Edwards, 1881

MoV sp. 5363
Records: 3 specimens, 21°58´S–22°50´S, 356–430 m ✓
Distribution: cosmopolitan, including WA
Reference: Hanamura (1987) [photo next page]

Oplophorus novaezeelandiae (De Man, 1931)
MoV sp. 1845
Records: 1 specimen, 35°16´S, 978–980 m
Distribution: cosmopolitan, including WA
Reference: Kensley et al.(1987) [photo below]

Systellaspis debilis (Milne Edwards, 1881)
MoV sp. 1841
Records: 3 specimens, 22°00´S–22°00S, 983–1085 m
Distribution: cosmopolitan, including WA
Reference: Kensley et al. (1987), Poore (2004)

Palaemonidae

Although common in shallow waters this family was represented by only three specimens. The identifications below are by A.J. Bruce.

Periclimenes aleator Bruce, 1991
MoV sp. 5448
Records: 1 specimen, 21°00´S, 399–408 m
Distribution: Loyalty Is., new record for Australia
Reference: Bruce (1991); det. A.J. Bruce

Palaemonid sp. MoV 5437
Records: 2 specimens, 29°48´S, 114 m
Distribution: new genus and species
Reference: det. A.J. Bruce

Pandalidae

Of 21 species of mostly benthopelagic shrimps, 15 are are recorded outside their known range. Three are new Australian records of Indo-West Pacific species and four probable new species. Four studies have covered the family in this region (Chace, 1985; Hanamura and Takeda, 1987; Crosnier, 1988; Hanamura and Evans, 1996).

Chlorotocella spinicaudus (Milne Edwards, 1837)

MoV sp. 0995
Records: 1 specimen, 23°59´S, 411 m
Distribution: common southern Australian species
Reference: Poore (2004: 131)

Chlorotocus sp. MoV 5443

Records: 1 specimen, 21°58´S, 356–324 m ✓
Distribution: new species
References: Hanamura and Takeda (1987); Hanamura and Evans (1996)

Heterocarpoides levicarina Bate, 1888

MoV sp. 5364
Records: 14 specimens, 21°58´S–22°04´S, 101–206 m
Distribution: Indo-West Pacific, including Indonesia; new Australian record
Reference: Chace (1985: 17)

Heterocarpus dorsalis Bate, 1888

MoV sp. 5365
Records: 25 specimens, 21°55´S–31°57´S, 726–1260 m ✓
Distribution: cosmopolitan, including Australia
Reference: Wadley and Evans (1992) [photos below]

Heterocarpus hayashii Crosnier, 1988

MoV sp. 5541
Records: 16 specimens, 21°58´S–27°08´S, 373–431 m
Distribution: West Pacific, including GBR, Australia; new record for WA
Reference: Crosnier (1988) [photo upper right]

Heterocarpus tricarinatus Alcock & Anderson, 1894

MoV sp. 5366
Records: 5 specimens, 21°55´S, 1260–1295 m
Distribution: Indo-West Pacific, including N WA; new record for S WA
Reference: Hanamura and Evans (1996: 9) [photo below]

Heterocarpus woodmasoni Alcock, 1901

MoV sp. 5367
Records: 18 specimens, 21°58´S–22°50´S, 373–430 m
Distribution: Indo-West Pacific, including N Australia; new record for S WA
Reference: Hanamura and Evans (1996: 10) [photo below]

Heterocarpus MoV sp. 5540

Records: 25 specimens, 21°00´S–22°04´S, 399–411 m
Distribution: new species
Reference: Crosnier (1988) [photo below]

Plesionika bifurca Alcock & Anderson, 1894

MoV sp. 5444
Records: 2 specimens, 22°00´S, 983–1010 m
Distribution: Indo-West Pacific, including N Australia; first record for S WA
Reference: Hanamura and Takeda (1987); Chace (1985)

Plesionika binoculus (Bate, 1888)

MoV sp. 5447
Records: 6 specimens, 21°59´S, 166 m
Distribution: Arafura Sea; first record for S WA
Reference: Chace (1985: key)

Plesionika cf. ***kensleyi*** Chace, 1985

MoV sp. 5369
Records: 33 specimens, 22°04´S–35°14´S, 212–1050 m
Distribution: rostrum more compact than *P. kensleyi*; new Australian record or new species
Reference: Chace (1985: 77) [photo below]

Plesionika cf. ***philippinensis*** Chace, 1985

MoV sp. 5370
Records: 1 specimen, 21°57´S, 104–114 m
Distribution: new Australian record or new species
Reference: Chace (1985: 99)

Plesionika edwardsii (Brandt, 1851)

MoV sp. 5368
Records: 6 specimens, 24°33´S–31°55´S, 364–484 m ✓
Distribution: cosmopolitan; new record for WA
Reference: Chace (1985: 62)

Plesionika orientalis Chace, 1985

MoV sp. 5445
Records: many specimens, 21°58´S–35°12´S, 324–695 m ✓
Distribution: Indo-West Pacific usually as *P. martia orientalis*; first record for S WA
Reference: Chace (1985: 62) [photo below]

Plesionika reflexa Chace, 1985

MoV sp. 5371
Records: 40 specimens, 21°00´S, 399–408 m
Distribution: Indo-West Pacific, including N Australia; first record for S WA
Reference: Hanamura and Takeda (1987)

Plesionika semilaevis Bate, 1888

MoV sp. 5372
Records: 12 specimens, 22°04´S–35°22´S, 387–680 m ✓
Distribution: Indo-West Pacific, including N Australia; first record for S WA
Reference: Chace (1985: 113)

Plesionika serratifrons Borradaile, 1899

MoV sp. 5373
Records: many specimens, 21°58´S–27°55´S, 100–253 m ✓
Distribution: Indo-West Pacific; new record for Australia
Reference: Chace (1985: 123) [photos below]

Plesionika spinidorsalis (Rathbun, 1906)

MoV sp. 5374
Records: 23 specimens, 21°58´S–22°04´S, 356–754 m ✓
Distribution: Indo-West Pacific, including N WA; new record for S WA
Reference: Hanamura and Takeda (1987); Chase (1985)

Plesionika spinipes Bate, 1888

MoV sp. 5446
Records: 3 specimens, 22°04´S, 106–101 m
Distribution: Indo-West Pacific, inlcuding E Australia; new record for WA
Reference: Chace (1985: key)

Plesionika sp. MoV 5457

Records: 1 specimen, 35°16´S, 980–976 m
Distribution: probable new species
Reference: Chace (1985)

Procletes levicarina (Bate, 1888)

MoV sp. 5483
Records: 2 specimens, 21°59´S, 166 m
Distribution: Indo-West Pacific, including N Australia; new record for S WA
Reference: Holthuis (1993)

Pasiphaeidae

The six species included three already known from WA, two new WA records and a probable new species. Hanamura & Evans (1994) is a key reference.

Alainopasiphaea australis (Hanamura, 1989)

MoV sp. 1895
Records: 2 specimens, 35°22´S, 676–680 m
Distribution: southern Australia
References: Hayashi (2004), Poore (2004); Hanamura (1989)

Eupasiphae sp. MoV 5427

Records: 2 specimens, 21°56´S–21°58´S, 726–1050 m
Distribution: new species
Reference: Hanamura and Evans (1994)

Leptochela sydniensis Dakin & Colefax, 1940

MoV sp. 0723
Records: 5 specimens, 22°04´S–35°18´S, 95–210 m
Distribution: Indo-West Pacific, including N, E and S Australian coasts; first record for WA
Reference: Hanamura and Evans (1994) [photo below]

Pasiphaea kapala Kensley, Tranter & Griffin, 1987

MoV sp. 5432
Records: 2 specimens, 35°22´S, 685–695 m
Distribution: southern Australia
Reference: Poore (2004)

Pasiphaea longitaenia Kensley, Tranter & Griffin, 1987

MoV sp. 5377
Records: 1 specimen, 22°00´S, 983–1010 m
Distribution: NSW; new record for WA
Reference: Kensley et al.(1987)

Pasiphaea tarda Krøyer, 1845

MoV sp. 5433
Records: 1 specimen, 35°31´S, 1074–1080 m
Distribution: cosmopolitan, including S WA
Reference: Hanamura and Evans (1994)

Processidae

Chace (1997) is the key reference. The three species included one known previously from WA, and two newly recorded for Australia. None has been adequately figured recently.

Hayashidonus japonicus (De Haan, 1844)

MoV sp. 5434
Records: 2 specimens, 21°59´S–22°04´S, 101–166 m
Distribution: Indo-West Pacific including Indonesia; new record for Australia
Reference: Chace (1997: 33)

Processa gracilis Baker, 1907

MoV sp. 5376
Records: 1 specimen, 33°58´S, 96 m
Distribution: SA; first record for WA
Reference: Poore (2004: 128)

Processa longirostris Hayashi, 1975

MoV sp. 5426
Records: 8 specimens, 21°58´S–24°01´S, 100–107 m ✓
Distribution: S Vietnam; new Australian record
References: Hayashi (1975: key); Noël (1986: key)

Rhynchocinetidae

Two described species, one known from southern Australia and the other from northern Australia, were found and identified using Okuno (1994) and Chace (1997).

Rhynchocinetes brucei Okuno, 1994

MoV sp. 5378
Records: 17 specimens, 21°59´S–35°13´S, 100–494 m ✓
Distribution: West Pacific, NE Australia; new record for WA
Reference: Okuno (1994) [photo below]

Rhynchocinetes enigma Okuno, 1997

MoV sp. 3978
Records: 19 specimens, 31°37´S–35°21´S, 97–210 m
Distribution: S Australia; new record for WA
Reference: Poore (2004: 76) [photo below]

Thalassocarididae

One Indo-West Pacific species was recorded for the first time from Australia (Chace, 1985).

Thalassocaris crinita (Dana, 1852)

MoV sp. 5379
Records: 6 specimens, 22°50´S–27°03 ´S, 97–100 m
Distribution: Indo-West Pacific; first record for Australia
Reference: Chace (1985: 7)

Polychelida – deep sea lobsters

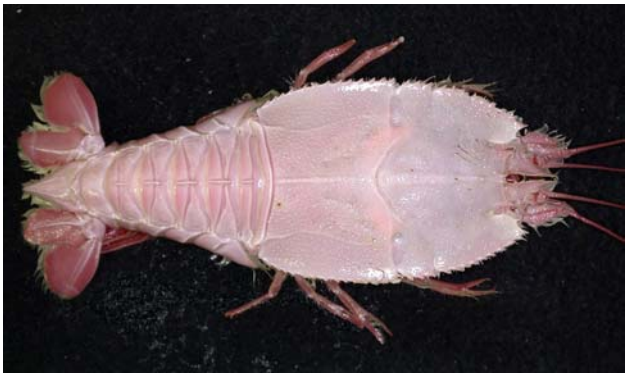
The Australian fauna is well studied and two papers enabled the collections (59 individuals) to be identified (Galil, 2000; Ahyong and Brown, 2002).

Polychelidae

All five species in two genera are already described. *Polycheles coccifer* Galil, 2000 was previously recorded from Indonesia so this record from northerly stations is not unexpected.

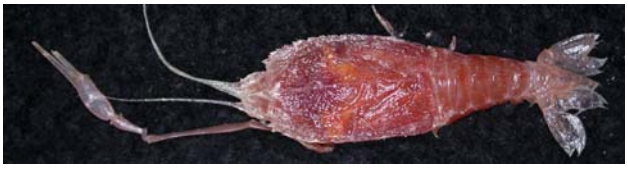
Pentacheles laevis Bate, 1878

MoV sp. 3980
Records: 5 specimens, 31°57´S–35°31´S, 928–1170 m
Distribution: cosmopolitan species, including S Australia
References: Ahyong and Brown (2002) [photo below]



Polycheles auriculatus (Bate, 1878)

MoV sp. 4975
Records: 36 specimens, 21°56´S–35°14´S, 658–1037 m ✓
Distribution: Indo-West Pacific species, including WA
References: Ahyong and Brown (2002) [photo below]



Polycheles coccifer Galil, 2000

MoV sp. 4973
Records: 3 specimens, 21°58´S–21°58´S, 324–382 m ✓
Distribution: Indo-West Pacific; first record for Australia
References: Galil (2000) [photos below]

Polycheles suhmi (Bate, 1878)

MoV sp. 3979
Records: 2 specimens, 35°14´S–35°22´S, 676–728 m
Distribution: Southern Ocean, including NSW–Tas.; first record for WA
References: Galil (2000) [photo below]

Polycheles typhlops Heller, 1862

MoV sp. 5069
Records: 3 specimens, 21°58´S–22°04´S, 373–399 m
Distribution: cosmopolitan species
References: figures from Galil (2000)

Stenopodidea – coral shrimps

Stenopodidean shrimps can be identified to family and genus using the keys of Holthuis (1993). One species was represented by one individual of a species previously recorded from the region but not so far south. The other was just a cheliped but could be identified as probably a species not recorded from Australia.

Stenopodidae

Two species were found, one known from coral in Indonesia and northern WA and the other, represented in this collection by a single cheliped, from throughout the Indo-West Pacific.

Engystenopus cf. ***palmipes*** Alcock & Anderson, 1894

MoV sp. 5545
Records: 1 detached cheliped (pereopod 3), 22°04´S, 400 m ✓
Distribution: Bay of Bengal, Philippines; new record for Australia (det. J. Goy from photo of cheliped)
References: De Saint Laurent and Cleva (1981) [photo below]

Odontozona sculpticaudata Holthuis, 1946

MoV sp. 5442
Records: 1 specimen, 22°50´S, 100 m
Distribution: Indo-West Pacific species, including N Australia; new record for S WA
References: Holthuis (1946)

Thalassinidea – ghost and sponge shrimps

Six families (of 11 known) are represented by 23 species. The collection is not large, 51 individuals of which 13 belonged in one species. Surprisingly, only four species could be identified, one of these with a Korean species newly recorded from Australia. The fraction of new species is 82%. Several seemed not to fit well with presently diagnosed genera. Published keys to families and genera (Poore, 1994) are now superceded by an interactive DELTA-based key in preparation by Poore. Poore and Griffin (1979) covered all the Australian species then known but as citations below indicate, the number has grown since.

Axiidae

Of the eight species, at least one is most probably a new genus. None belong in the taxa described by Sakai (1986; 1994) or Kensley (1989). One is tentatively identified as a species described from Korea.

Acanthaxius sp. MoV 4956

Records: 1 specimen, 21°59´S, 166 m ✓
Distribution: new species
Reference: Ngoc-Ho (2006) [photo below]

Axiopsis tsushimaensis Sakai, 1992

MoV sp. 5440
Records: 2 specimens, 29°48´S–35°11´S, 113–157 m
Distribution: Korea, Japan; new record for Australia
Reference: Sakai (1992)

Axiopsis sp. MoV 5435

Records: 2 specimens, 27°48´S, 96–98 m
Distribution: new species
Reference: Poore (1994)

Bouvieraxius sp. MoV 4959

Records: 1 specimen, 27°08´S, 414–405 m
Distribution: new species
Reference: Poore (1994) [photo below]

Calocarides sp. MoV 4955

Records: 3 specimens, 25°54´S–27°03´S, 97–100 m
Distribution: new species
Reference: Poore (1994) [photos below]

Calocarides sp. MoV 4957

Records: 1 specimen, 25°55´S, 404–407 m
Distribution: new species
Reference: Poore (1994) [photo upper right]

Dorphinaxius sp. MoV 4958

Records: 1 specimen, 20°59´S, 100 m ✓
Distribution: new species
Reference: Poore (1994)

Marianaxius sp. MoV 5436

Records: 1 specimens, 29°48´S, 114 m
Distribution: new species
Reference: Kensley (2003)

Axiid sp. MoV 5527

Records: 1 specimens, Station not recorded
Distribution: new species, genus indetermined

Axiid sp. MoV 4954

Records: 1 specimen, 33°00´S, 423–397 m
Distribution: new species, possibly new genus
Reference: Poore (1994) [photo below]

Callianassidae

There are only one or two individuals of each of the six species, sometimes incomplete as is typical of members of this family. One species has already been described in a manuscript in press (Poore, in press) but the others are not in papers dealing with the fauna of this region (Sakai, 1988; Ngoc-Ho, 1994; Poore, in press). Generic concepts in Callianassidae are unclear – most could not be placed in one of the 20 genera diagnosed in a DELTA key currently under construction. The most recent reviews of the family (Sakai, 1999, 2005) proposed an idiosyncratic taxonomy that does not recognise many traditionally recognised genera. For the time being, most species in this collection are tentatively placed in the catch-all '*Callianassa*'.

Callianassa sp. MoV 4964

Records: 1 specimens, 22°50´S, 100 m
Distribution: WA
Reference: Poore (in press)

Callianassa sp. MoV 4961

Records: 2 specimens, 22°04S, 206–201 m
Distribution: new species

Callianassa sp. MoV 4962

Records: 1 specimen, 22°04´S, 206–201 m
Distribution: new species

Callianassa sp. MoV 4963

Records: 1 specimen, 29°48´S, 114 m
Distribution: new species

Callianassa sp. MoV 4966

Records: 1 specimen, 21°58´S, 107 m
Distribution: new species

Corallianassa sp. MoV 4965

Records: 2 specimens, 31°43´S–35°11´S, 102–169 m
Distribution: new species [photos below]

Calocarididae

The single species belongs to a genus not previously recorded from Australia.

Ambiaxius sp. MoV 4967

Records: 2 specimens, 33°00´S, 423–397 m
Distribution: new species
Reference: Sakai and Ohta (2005)

Gourretiidae

One new species was found whose generic identification is problematic. The nomenclature, composition and definition of this family is subject to considerable debate. The views of Sakai (2005) who provided the most recent revision are not necessarily followed here (see too Callianassidae).

Lipkecallianassa sp. MoV 4960

Records: 8 specimens, 21°59´S–22°04´S, 100–206 m
Distribution: generic placement of the species is problematic
Reference: Sakai (2002)

Micheleidae

The single specimen in each of two genera does not belong to any of the Western Australian (or other) species described by Poore (1997; in press).

Michelea sp. MoV 4969

Records: 1 specimen, 27°48´S, 123–112 m
Distribution: new species
Reference: Poore (1997)

Tethisea sp. MoV 5472

Records: 1 specimen, 35°22´S, 419–460 m
Distribution: new species, possibly new genus
Reference: Poore (1997)

Upogebiidae

All three species were identified by N. Ngoc-Ho and have been previously recorded from Australia.

Upogebia ancylodactyla De Man, 1905

MoV sp. 5078
Records: 2 specimens, 31°43´S, 102 m
Distribution: Indonesia–Philippines, N Australia; new record for S WA
Reference: Sakai (1993) [photo below]

Upogebia holthuisi Sakai, 1982

MoV sp. 4970
Records: 2 specimens, 25°54´S, 100 m
Distribution: New Caledonia, Pacific, first record for Australia
Reference: Sakai (1982)

Upogebia bowerbanki (Miers, 1884)

MoV sp. 4971
Records: 13 specimens, 21°57´S, 104–114 m ✓
Distribution: S Australia
Reference: Poore (2004) [photos below]

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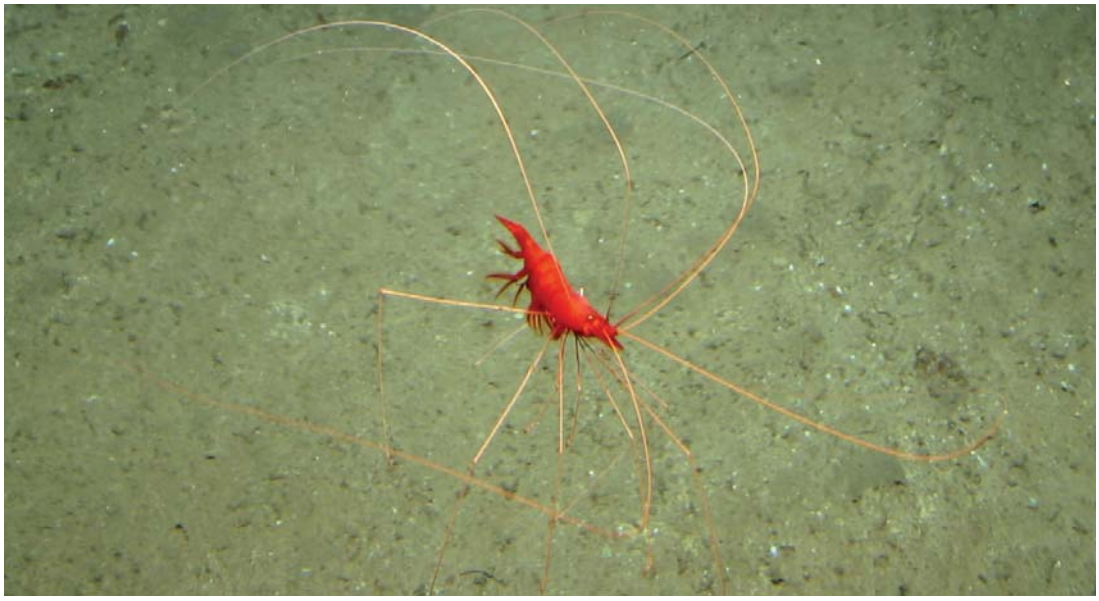

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