

A catalogue of Recent echinoderm type specimens in the Western Australian Museum, Perth

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Abstract - This is the first published catalogue of all echinoderm type material lodged in the Western Australian Museum of Natural Science. Seventy nine echinoderm species of the classes Crinoidea, Asteroidea, Ophiuroidea, Echinoidea and Holothuroidea are represented in the type collection. The earliest echinoderm species described in this collection date from the Hamburg South-Western Australian Research Expedition (Koehler, 1907). Information is presented here on the registration and collection details of the specimens, and habitat information is given where available.

INTRODUCTION

The echinoderm collection held in the Department of Aquatic Zoology, Museum of Natural Science, Western Australian Museum (WAM), Perth, consists of over 21,500 registered specimen lots. This material includes type specimens of 79 species of recent Echinoderms. The first lists of type specimens in the WAM were documented in the Museum's Annual Reports commencing with Part 1 in 1959-60. A list of 19 echinoderm holotypes was included in part 3 (Anon. 1961-62) with corrections to two species names in part 7 (1965-66), one of them with a spelling error. The lists were discontinued after Part 10 (1968-69). No further documentation of echinoderm types has occurred until this publication. This catalogue of 79 species of Recent echinoderms includes type material of three crinoids; 32 asteroids; 27 ophiuroids, nine echinoids and eight holothuroids. Of these, 34 are holotypes of nominal species, some of which have since fallen into synonymy. The remainder are paratypes, paralectotypes or syntypes.

The first overseas expedition to deposit type material in the WAM was the Hamburg SW Australian Expedition of Michaelsen and Hartmeyer (1905) which collected extensively in Shark Bay and the south-west of the state. Type material of two species of ophiuroids from their collection, described by Koehler (1907), were the first echinoderms represented in the type collection. The small collection in the WAM was considerably augmented by the efforts of the then Keeper of Natural History, W.B. Alexander, who accompanied the Federal Fisheries Investigation Ship *Endeavour* on two trawling cruises off the mid-west coast of Western Australia. New species from these and earlier collections were described by A.H. Clark (1914) and H.L. Clark (1914, 1916). H.L. Clark

(1923) also described echinoderms from the Houtman Abrolhos but deposited types elsewhere. Clark, supported by the Carnegie Institution, Harvard University and the Australian National Research Council made two extended collecting trips to Australia in 1929 and 1932 (CAH Expedition) amassing over 11,000 specimens representing 422 species from the coast and shallow water of most of the Australian continent. Type material of 32 nominal species and three varieties from these expeditions was deposited in the WAM (H.L. Clark, 1938). Many of the type specimens from Clark's expeditions were deposited in the Museum of Comparative Zoology (MCZ), Harvard, with some representatives deposited in other Australian Museums. Clark's work on Australian echinoderms culminated in his monograph (H.L. Clark, 1946) on the composition, zoogeographic affinities and origins of the Australian echinoderm fauna which remained the only comprehensive listing of the fauna until Rowe and Gates (1995). Since the 1960s, fieldwork by staff of this Museum in Australia and elsewhere, has resulted in the deposition of type specimens by Rowe, Baker, Marsh and others.

In this paper, the taxonomic sequence of the classes follows Clark and Rowe (1971) and class names are those in general current usage (Rowe and Gates, 1995). Below classes the classification followed here is predominantly that of the "Treatise on Invertebrate Palaeontology" (Moore, 1966; Moore and Teichert, 1978). Within the Asteroidea changes since 1966 relevant to this catalogue include the erection of a new family (Asterodiscididae) in the order Valvatida (Rowe, 1977a) and the transfer of the family Asterinidae from the order Spinulosida to Valvatida (Blake, 1981). Since there is ongoing debate as to the

evolutionary position of the orders (Blake, 1987, 1989, Gale, 1987 and Lafay, Smith and Christen, 1995) the sequence of orders in Moore (1966) is followed here.

Families, genera and species are arranged alphabetically within each order. The original generic and species assignment with author and date of the material is presented. If the original generic assignment has been changed or the species has been synonymised these changes are given beneath the original name.

In the majority of cases, two WAM registration numbers are given. The first, with the prefix WAM is the original registration number and the second, provided in square brackets with the prefix WAM Z, is the new registration number linked to the WAM computer database. An electronic sequential numbering system has been adopted to alleviate duplication of old registration numbers in the future, as these included only the last two digits of the year in which the specimens were registered. The prefix Z distinguishes the registration numbers of the Marine Invertebrate Zoology section from those of other sections within the WAM. Where a specimen was not registered previously, the registration number has the WAM Z prefix without square brackets. The number of specimens, and the method of storage, are given in parentheses after the registration number. Specimens that are described as 'wet' are stored in 70 % ethanol. When latitudes and longitudes have not been quoted in the reference or on the specimen label, they are supplied in square brackets. Distances and depths are cited when provided, and their metric conversion appears in square brackets. Any inconsistencies between the label, registration catalogue or published information are noted under 'Remarks'. Additional information considered useful to researchers, such as the condition of the specimens, is also presented under 'Remarks'.

Abbreviations used in this paper are as follows: CAH: Carnegie, Australia, Harvard expedition; ICZN: International Commission on Zoological Nomenclature; MCZ: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; MNB: Museum für Naturkunde, Berlin; NMNH: National Museum of Natural History, Smithsonian Institution, Washington; WAM: Western Australian Museum (now the Museum of Natural Science, Western Australian Museum), Perth; ZMH: Zoologisches Museum, Hamburg.

Class CRINOIDEA Miller, 1821

Order COMATULIDA A.H. Clark, 1908

Family Calometridae A.H. Clark, 1911

Genus *Neometra* A.H. Clark, 1912

***Neometra conaminis* A.H. Clark, 1914**

Neometra conaminis A.H. Clark, 1914: 129–131.

Material Examined

?*Syntypes* number WAM 3-64 (4; wet) [new registration number: WAM Z 1864].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, 80–120 fathoms [146–219 m] depth, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

A.H. Clark (1914) based his species description on a type specimen and noted that there were three other specimens "all with 20 arms and all resembling the type". In fact four specimens that comply with his description are held in the WAM and one further specimen, labelled cotype, is in the NMNH. The label with the WAM specimens is in H.L. Clark's handwriting and does not indicate the type status of the material, hence the query before the syntype designation given above. This material, which has always been held with the type collection, is the only material of *Neometra conaminis* of this age held in the WAM, and we suspect it is type material but cannot unequivocally confirm its status. Rowe and Gates (1995) indicate that the holotype is in the WAM but do not give a registration number.

***Neometra gorgonia* A.H. Clark, 1914**

Neometra gorgonia A.H. Clark, 1914: 125–128.

Material Examined

Holotype number WAM 14-62 (1; wet) [new registration number: WAM Z 1865].

Paratypes number WAM 4947 (3; wet) [new registration number: WAM Z 1866].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, trawled at 80–120 fathoms [146–219 m] depth, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

A.H. Clark (1914) did not designate paratypes but refers to a total of seven specimens, one of which was the holotype. No Museum registration numbers were provided in the publication. The WAM holds the holotype and three paratypes, indicated on the original labels. One of the paratypes is damaged. A.H. Clark (1914) mentions the specimens have "purple bars" but on the original label the colour is given as white with yellow or purple bars.

Family Comasteridae A.H. Clark, 1908**Genus *Oxycomanthus* Rowe, Hoggett, Birtles and Vail, 1986*****Oxycomanthus muelleri* Rowe, Hoggett, Birtles and Vail, 1986***Oxycomanthus muelleri* Rowe, Hoggett, Birtles, and Vail, 1986: 257–259, figure 9F.**Material Examined***Holotype* number WAM 137-79 (1; dry) [new registration number: WAM Z 1867].

Locality: Island on E side of Lucky Bay, Recherche Archipelago, 34°01'S, 122°15'E, Western Australia, rotenone station 4 m depth, 14 March 1978, B. Hutchins.

Paratype number WAM 74-80 (1; dry) [new registration number: WAM Z 1868].

Locality: Hall Bank, Fremantle [32°04'S, 115°45'E], Western Australia, on dead coral bank at 30–40 feet [9–12 m] depth, 25 January 1980, S. Slack-Smith, C. Bryce, and L. Marsh.

Remarks

The arms of the holotype are damaged, and some of the tips of the arms of the paratype are missing.

Class ASTEROIDEA de Blainville, 1830**Order PAXILLOSIDA Perrier, 1884****Family Astropectinidae Gray, 1840****Genus *Ctenophoraster* Fisher, 1906*****Ctenophoraster marquesensis* Marsh, 1974***Ctenophoraster marquesensis* Marsh, 1974: 71–77, figures 1–3.**Material Examined***Paratype* number WAM 24-72 (1; dry) [new registration number: WAM Z 1735].Locality: Station NH XV haul 2 (8°50'S, 140°15'W), 1.5 miles S of Haopu Bay, Nuku Hiva, Marquesas Islands, South Pacific, dredged on sand at 43–45 fathoms [79–82 m] depth, 22 September 1967, B.R. Wilson *et al.* on *Pele*.*Paratype* number WAM 25-72 (1; dry) [new registration number: WAM Z 1736].Locality: Station TH I haul 1 (10°00'S, 139°10'W), Tahuata Island, Marquesas Islands, South Pacific, dredged on coarse yellow sand at 45 fathoms [82 m] depth, 28 September 1967, B.R. Wilson *et al.* on *Pele*.*Paratypes* number WAM 26-72 (1; dry) [new registration number: WAM Z 1737]. WAM 27-72 (1; dry) [new registration number: WAM Z 1738].

Locality: Station TH I hauls 2–7 (10°00'S, 139°10'W), Tahuata Island, Marquesas Islands, South Pacific, dredged on yellow sand and broken

shell at 36–45 fathoms [66–82 m] depth, 28 September 1967, B.R. Wilson *et al.* on *Pele*.*Paratype* number WAM 28-72 (1; dry) [new registration number: WAM Z 1739].Locality: Station TH X, haul 1 (9°52'S, 139°4.7'W), Haava Strait, between Tahuata Island and Hiva Oa, Marquesas Islands, South Pacific, dredged on sand at 40 fathoms [73 m] depth, 1 October 1967, B.R. Wilson *et al.* on *Pele*.*Paratype* number WAM 29-72 (1; dry) [new registration number: WAM Z 1740].Locality: Station FH I haul 4 (10°30'S, 138°40'W), off Omoa Bay, Fatu Hiva, Marquesas Island, South Pacific, dredged on shell and rubble at 43 fathoms [79 m] depth, 27 September 1967, B.R. Wilson *et al.* on *Pele*.**Remarks**

The specimens WAM 24-72, 25-72 and 26-72 all have one or more arm tips damaged. The complete station list for this expedition is given in Devaney (1974).

Order VALVATIDA Perrier, 1884**Family Archasteridae Viguiet, 1878****Genus *Archaster* Müller and Troschel, 1840*****Archaster laevis* H.L. Clark, 1938**(junior synonym of *Archaster angulatus* Müller and Troschel, 1842)*Archaster laevis* H.L. Clark, 1938: 75–77, plate 17, figure 2.**Material Examined***Paratypes* number WAM 64-39 (1; dry) [new registration number: WAM Z 1700]; WAM 65-39 (1; dry) [new registration number: WAM Z 1701].Locality: Broome [17°58'S, 122°14'E], Western Australia, at 5–8 fathoms [9–15 m] depth, June 1932, H.L. Clark *et al.***Remarks**Sukarno and Jangoux (1977) reported this species as a synonym of *Archaster angulatus* Müller and Troschel, 1842. Although Clark (1938) did not designate any paratypes the original label is marked paratypes. A note on the label says: "also Fremantle District, La Grange, Roebuck Bay". One specimen has a damaged arm.**Family Asterinidae Gray, 1840****Genus *Asterina* Nardo, 1834*****Asterina alba* H.L. Clark, 1938***Asterina alba* H.L. Clark, 1938: 150–152, plate 22, figure 7.

Material Examined

Paratypes number WAM 95-39 (1; dry) [new registration number: WAM Z 1702]; WAM 96-39 (1; dry) [new registration number: WAM Z 1703].

Locality: Ned's Beach, Lord Howe Island [31°31'S, 159°04'E], Tasman Sea, under rock fragment, April 1932, H.L. Clark *et al.*

***Asterina corallicola* Marsh, 1977**

Asterina corallicola Marsh, 1977: 271–275, figures 8, 9.

Material Examined

Paratypes number WAM 877-76 (3; dry) [new registration number: WAM Z 1704].

Locality: Patch reef North of Koror Island [7°21'N, 134°31'E], Palau, Caroline Islands, 9 February 1971, M. Yamaguchi.

Remarks

These specimens were found feeding on *Acropora echinata* at approximately 10 m.

***Asterina lutea* H.L. Clark, 1938**

(junior synonym of *Asterina sarasini* (de Loriol, 1897))

Asterina lutea H.L. Clark, 1938: 153–155, plate 12, figure 2.

Material Examined

Paratype number WAM 97-39; WAM 98-39 (1; dry) [new registration number: WAM Z 1705].

Locality: Broome [17°58'S, 122°14'E], Western Australia, August/September 1929, H.L. Clark *et al.*, CAH Expedition.

Remarks

A.M. Clark and Rowe (1971) reported this species as a probable synonym of *Asterina sarasini* (de Loriol, 1897); Rowe (in Rowe and Gates, 1995) formalised this synonymy. Although no paratype was designated by Clark (1938) the original label is marked paratype. Two specimens and two registration numbers are indicated on the original label but only one specimen is now present, and has been assigned a single registration number.

Genus *Nepanthia* Gray, 1840***Nepanthia fisheri* Rowe and Marsh, 1982**

Nepanthia fisheri Rowe and Marsh, 1982: 103–106, figures 1, 4A–C, 5D–H, 6G.

Material Examined

Holotype number WAM 102-78 (1; dry) [new registration number: WAM Z 1706].

Paratype number WAM 101-78 (1; dry) [new registration number: WAM Z 1707].

Locality: West Banguay Channel [7°30'N, 117°15'E], NE of Sabah, E Malaysia, dredged in mud at 25 fathoms [46 m] depth, 11 March 1964, B.R. Wilson on *Pele*.

Remarks

The colour of the holotype is noted as blue/grey on the label.

***Nepanthia gracilis* Rowe and Marsh, 1982**

Nepanthia gracilis Rowe and Marsh, 1982: 107–109, figures 1, 4D–F, 5F, 6F.

Material Examined

Holotype number WAM 103-78 (1; dry) [new registration number: WAM Z 1708].

Locality: 14 km and 242° from Zal Island, SW of Pearl Bank, Sulu Archipelago [6°10'N, 120°45'W], Philippines, dredged at 67–68 fathoms [122–124 m] depth with many sponges, 22 February 1964, B.R. Wilson on *Pele*.

Paratype number WAM 104-78 (1; dry) [new registration number: WAM Z 1709].

Locality: 15 km and 242° from Zal Island, SW of Pearl Bank, Sulu Archipelago, [6°10'N, 120°45'E], Philippines, dredged at 55–60 fathoms [100–110 m] depth with many sponges, 22 February 1964, B.R. Wilson on *Pele*.

Remarks

The collection date is given as February on the specimen labels, but printed in error as November in Rowe and Marsh (1982).

***Nepanthia variabilis* H.L. Clark, 1938
(junior synonym of *Nepanthia belcheri* (Perrier, 1875))**

Nepanthia variabilis H.L. Clark, 1938: 176–179, plate 10, figures 4–5; plate 20, figures 4–5.

Material Examined

Paratypes number WAM 119-39 (1; dry) [new registration number: WAM Z 1710]. WAM 120-39 (1; dry) [new registration number: WAM Z 1711].

Locality: Broome [17°58'S, 122°14'E], Western Australia, 1932, collector unknown.

Remarks

Rowe and Marsh (1982) reported this species as a synonym of *Nepanthia belcheri* (Perrier, 1875). Although no paratypes were designated by Clark (1938) the specimens are labelled paratype in Clark's handwriting. Rowe and Gates (1995) did not record the paratype specimen WAM 120-39.

Genus *Paranepanthia* Fisher, 1917***Paranepanthia rosea* H.L. Clark, 1938**

Paranepanthia rosea H.L. Clark, 1938: 161–162, plate 22, figure 8.

Material Examined

Paratypes number WAM 16459-16468 (5; dry) [new registration number: WAM Z 1714].

Locality: Bathurst Point, Rottne Island [32°00'S 115°33'E], Western Australia, 19 December 1929, L. Glauert.

Remarks

The catalogue indicates ten specimens (16459-16468) but only five are now present. Although Clark (1938) did not designate paratypes the specimens are labelled as such on the original label. Rowe and Gates (1995) list the paratype numbers as 164/169-38 but these numbers are not correct and appear to be a misinterpretation of the original registration numbers given above.

Genus *Parasterina* Fisher, 1908***Parasterina occidentalis* H.L. Clark, 1938
(junior synonym of *Nepanthia thoughtoni*
(Livingstone, 1934))**

Parasterina occidentalis H.L. Clark, 1938: 180–181, plate 21, figure 5.

Material Examined

Paratype number WAM 606-31 (1; dry) [new registration number: WAM Z 1712].

Locality: Cottesloe [31°59'S, 115°45'E], Western Australia, date and collector unknown.

Paratype number WAM 46-32 (1; dry) [new registration number: WAM Z 1713].

Locality: Trigg Island, North Beach [31°52'S, 115°45'E], Western Australia, February 1932, L. Solomon.

Remarks

A.M. Clark (1956) reported this species as a synonym of *Nepanthia thoughtoni* (Livingstone, 1934). Clark (1938) did not designate any paratypes but these two specimens are labelled paratypes in H.L. Clark's handwriting. The colour of both specimens is given as red on the original labels.

Genus *Patiriella* Verrill, 1913***Patiriella parvovipara* Keough and Dartnall, 1978**

Patiriella parvovipara Keough and Dartnall, 1978: 407–416, figures 1–7.

Material Examined

Paratype number WAM 540-77 (1; wet) [new

registration number: WAM Z 1720].

Locality: Smooth Pool near Point Westall [32°55'S 134°04'E], South Australia, 19 September 1975, H.A. Searle.

Family Asterodiscididae Rowe, 1977a**Genus *Asterodiscides* A.M. Clark, 1974*****Asterodiscides culcitulus* Rowe, 1977a**

Asterodiscides culcitulus Rowe, 1977a: 193–197, figure 1.

Material Examined

Holotype number WAM 1063-74 (1; dry) [new registration number: WAM Z 1722].

Locality: Station DM 1/70/104 (29°29'S, 114°12'E), WSW of Dongara, Western Australia, dredged at 60 fathoms [110 m] depth, sponge and bryozoa, 8 December 1970, B.R. Wilson *et al.* on H.M.A.S. *Diamantina*.

Paratypes number WAM 1116-74 (9; wet) [new registration number: WAM Z 1723];

Locality: Station DM 1/70/107 (30°29'S, 114°40'E), SW of Jurien Bay, Western Australia, dredged at 80 fathoms [146 m] depth, sponge and bryozoa, 9 December 1970, B.R. Wilson *et al.* on H.M.A.S. *Diamantina*.

Remarks

Rowe (1977a) indicates eleven paratypes but only nine now remain in the collection.

***Asterodiscides macroplax* Rowe, 1985**

Asterodiscides macroplax Rowe, 1985: 536–540, figure 1, plate 2D–F, plate 3A–D.

Material Examined

Holotype number WAM 186-78 (1; dry) [new registration number: WAM Z 1726].

Locality: W side of Goss Passage [28°29'S, 113°46'E], Wallabi Group, Houtman Abrolhos Islands, Western Australia, 110–120 feet [33–36 m] depth, sand and rubble, 17 April 1978, L. Marsh and S. Slack-Smith.

Paratype number WAM 188-78 (1; dry) [new registration number: WAM Z 1727].

Locality: E side of Goss Passage [28°29'S, 113°46'E], Wallabi Group, Houtman Abrolhos Islands, Western Australia, 30–36 m depth, sand, 6 April 1978, C. Bryce.

Paratype number WAM 48-81 (1; dry) [new registration number: WAM Z 1728].

Locality: Hummock Island [28°48'S, 114°02'E], Zeewyck Channel, Houtman Abrolhos Islands, Western Australia, dredged at 20–22 fathoms [37–40 m] depth, 10 to 22 November 1980, D. Heald.

Paratype number WAM 405-80 (1; dry) [new registration number: WAM Z 1729].

Locality: Station SO 1/79/09 (20°17'S, 116°01'E to 20°18'S, 116°00'E), ENE Montebello Islands, Western Australia, otter trawl at 60 m depth, 2 December 1979, L. Marsh and S. Slack-Smith on R.V. *Soela*.

Paratypes number WAM 59-80 (2; dry) [new registration number: WAM Z 1730].

Locality: station SO 1/79/23 (19°54'S, 116°02'E to 19°55'S, 116°00'E), NE of Montebello Islands, Western Australia, trawled at 76-78 m depth with many large sponges, 3 December 1979, L. Marsh and S. Slack-Smith on R.V. *Soela*.

Remarks

The locality of WAM 48-81 is given incorrectly as Hommock Island and the final longitude of the trawl in which WAM 405-80 was collected is given incorrectly as 166°00'E, instead of 116°00'E, in Rowe (1985).

Asterodiscides pinguiculus Rowe, 1977a

Asterodiscides pinguiculus Rowe, 1977a: 204-206, figure 4H-J.

Material Examined

Holotype number WAM 1079-74 (1; dry) [new registration number: WAM Z 1731].

Locality: NE of Bernier Island [24°52'S, 113°08'E], Shark Bay, Western Australia, dredged at 13-15 fathoms [24-27 m] depth, 25 June 1971, D. Heald.

Asterodiscides soelae Rowe, 1985

Asterodiscides soelae Rowe, 1985: 547-550, figure 1, plate 4A-F, 5A.

Material Examined

Holotype number WAM 191-78 (1; dry) [new registration number: WAM Z 1732].

Locality: W side of Goss Passage and about 100 m S of Long Island [28°29'S, 113°46'E], Wallabi Group, Houtman Abrolhos, Western Australia, 110-120 feet [33-36 m] depth, sand and rubble, 17 April 1978, L. Marsh and S. Slack-Smith.

Paratype number WAM 190-78 (1; dry) [new registration number: WAM Z 1733].

Locality: W side of Goss Passage off Long Island [28°29'S, 113°46'E], Wallabi Group, Houtman Abrolhos, Western Australia, 120 feet [36 m] depth, sand and rubble, 15 April 1978, D.M. Devaney and C. Bryce.

Paratype number WAM 382-80 (1; dry) [new registration number: WAM Z 1734].

Locality: Station SO1/79/22 (19°54'S, 116°02' to 19°55'S, 116°00'E), E NE of Montebello Islands, Western Australia, otter trawl at 76-78 m depth with sponges, 3 December 1979, L. Marsh and S. Slack-Smith on R.V. *Soela*.

Family Goniasteridae Forbes, 1841

Genus *Pentagonaster* Gray, 1840

Pentagonaster stibarus H.L. Clark, 1914
(junior synonym of *Pentagonaster dubeni* Gray, 1840)

Pentagonaster stibarus H.L. Clark, 1914: 136-138, plate 17.

Material Examined

Holotype number WAM 4916 (1; dry) [new registration number: WAM Z 1743].

Paratype number WAM 4916 (1; dry) [new registration number: WAM Z 1744].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, 40-100 fathoms [73-183 m] depth, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

H.L. Clark (1914) designated the larger of these two specimens, both at that time with the same registration number, as the holotype. This species was synonymised with *Pentagonaster dubeni* Gray, 1840 by H.L. Clark (1946).

Genus *Stellaster* Gray, 1840

Stellaster megaloprepes H.L. Clark, 1914
(junior synonym of *Stellaster princeps* Sladen, 1889)

Stellaster megaloprepes H.L. Clark, 1914: 141-143, plate 18.

Material Examined

Holotype number WAM 4030 (1; dry) [new registration number: WAM Z 1745].

Locality: Off Port Hedland [20°18'S, 118°35'E], Western Australia, date and collector unknown.

Remarks

This species was synonymised with *Stellaster princeps* Sladen, 1889 by H.L. Clark (1938). The tips of two of the arms of the specimen are damaged.

Family Ophidiasteridae Verrill, 1867

Genus *Andora* A.M. Clark, 1967

Subgenus *Andora* (*Dorana*) Rowe, 1977b

Andora (*Dorana*) *wilsoni* Rowe, 1977b

Andora (*Dorana*) *wilsoni* Rowe, 1977b: 239-240, figure 2.

Material Examined

Holotype number WAM 1054-74 (1; dry) [new registration number: WAM Z 1746].

Locality: Doc Can Island [5°52'N, 119°57'E], Sulu Archipelago, Philippines, dredged 10 fathoms [18.3 m] depth, rocky lithothamnion bottom, 20 February 1964, B.R. Wilson.

Remarks

The collection date is given as February on the specimen label, but printed in error as November in Rowe (1977b). The tip of one arm of the specimen has broken off.

Genus *Bunaster* Döderlein, 1896

Bunaster variegatus H.L. Clark, 1938

Bunaster variegatus H.L. Clark, 1938: 134–136, plate 22, figure 1.

Material Examined

Paratypes number WAM 18-31 to 22-31 (5; dry) [new registration number: WAM Z 1747].

Locality: Bathurst Point [32°00'S, 115°33'E], Rottnest Island, off Fremantle, Western Australia, 5 January 1931, L. Glauert.

Remarks

The catalogue indicates five specimens but eight were present in one lot marked paratypes in H.L. Clark's handwriting. Young specimens were included in the lot but H.L. Clark did not consider these juveniles to be paratypes (Marsh, 1991). This material has now been separated into large (paratypes) and small (non paratype) material. The latter specimens have the number WAM Z1748.

Genus *Ferdina* Gray, 1840

Ferdina sadhensis Marsh and Campbell, 1991

Ferdina sadhensis Marsh and Campbell, 1991: 214–218, figures 1–3.

Material Examined

Paratype number WAM 427-90 (1; dry) [new registration number: WAM Z 1752].

Locality: Hoones Bay, E of Marbat, [Mirbat 16°58'N, 54°43'E], Dhofar, Sultanate of Oman, 5 m depth, 8 April 1988, M. Morrison.

Genus *Heteronardoa* Hayashi, 1973

Heteronardoa diamantinae Rowe, 1976

Heteronardoa diamantinae Rowe, 1976: 94–100, figures 10–15.

Material Examined

Holotype number WAM 1762-74 (1; dry) [new registration number: WAM Z 1755].

Locality: Station DM 1/64/17 off Point Cloates,

Western Australia, (22°59.7'S, 113°25.5'E), 70 fathoms [128 m] depth, beam trawl, large sponges sheltering crabs, prawns, starfish, and urchins, 31 January 1964, B.R. Wilson *et al.* on H.M.A.S. *Diamantina*.

Genus *Linckia* Nardo, 1834

Linckia tyloplax H.L. Clark, 1914

(currently *Hacelia tyloplax* (H.L. Clark, 1914))

Linckia tyloplax H.L. Clark, 1914: 147, plate 20.

Material Examined

Holotype number WAM 4931 (1; dry) [new registration number: WAM Z 1753].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, 80–120 fathoms [146–219] m depth, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

This species was reassigned to the genus *Hacelia* Gray, 1840 by Marsh (1976) without comment, and later confirmed by Rowe and Gates (1995). H.L. Clark (1914) notes that there were two specimens with the WAM no. 4931 and the larger of these was the holotype. According to the dimensions given by Clark, the remaining WAM specimen is the holotype, and additionally is labelled as such in Clark's handwriting. The second specimen to which he referred is in the MCZ Dry Collection (MCZ#2215) and labelled cotype (syntype) (F.J. Collier, personal communication), but should be regarded as a paratype (ICZN 1985 Recommendation 73D).

Genus *Paraferdina* James, 1973

Paraferdina sohariae Marsh and Price, 1991

Paraferdina sohariae Marsh and Price, 1991: 66–69, figures 4–7.

Material Examined

Holotype number WAM 78-90 (1; wet) [new registration number: WAM Z 1756].

Paratype number WAM 79-90, (1; wet) [new registration number: WAM Z 1757].

Locality: Station A/1 Deumba Gala, Galle [6°01'N, 80°13'E], Sri Lanka, on rock, 12–15 m, 25 January 1981, A.R.G. Price *et al.* on the *Sindbad* Voyage.

Family Oreasteridae Fisher, 1911

Genus *Anthenea* Gray, 1840

Anthenea elegans H.L. Clark, 1938

Anthenea elegans H.L. Clark, 1938: 126–127, plate 18, figure 4.

Material Examined

Paratype number WAM Z 1758 (1; dry).

Locality: Broome [17°58'S, 122°14'E], Western Australia, 5–8 fathoms [9–15 m], June 1932, H.L. Clark *et al.*

Remarks

The label states paratype in H.L. Clark's handwriting but this specimen had not been registered before 1998.

***Anthenea obesa* H.L. Clark, 1938**

Anthenea obesa H.L. Clark, 1938: 127–128, plate 19, figure 1.

Material Examined

Holotype number WAM 4920 (1; dry) [new registration number: WAM Z 1760].

Locality: Off Geraldton [28°46'S, 114°37'E], Western Australia, dredged at 29 fathoms [53 m] depth, date and collector unknown on F.I.S. *Endeavour*.

Genus *Culcitaster* H.L. Clark, 1914

***Culcitaster anamesus* H.L. Clark, 1914 (junior synonym of *Halityle regularis* Fisher, 1913)**

Culcitaster anamesus H.L. Clark, 1914: 145–146, plate 19.

Material Examined

Holotype number WAM 13-62 (1; dry) [new registration number: WAM Z 1761].

Locality: Western Australia? date and collector unknown.

Remarks

H.L. Clark (1914) states that there was no information with this specimen but it was thought to have been collected on the coast of Western Australia. He does not give the WAM number in the publication. *Culcitaster* was synonymised with *Halityle* by Fisher (1919) and the species synonymised with *Halityle regularis* Fisher, 1913 by Doderlein (1935). Baker and Marsh (1976) review the species.

Genus *Goniodiscaster* H.L. Clark, 1909

***Goniodiscaster acanthodes* H.L. Clark, 1938**

Goniodiscaster acanthodes H.L. Clark, 1938: 84–87, plate 5, figure 2.

Material Examined

Paratype number WAM 68-39 (1; dry) [new registration number: WAM Z 1759].

Locality: Broome [17°58'S, 122°14'E], Western Australia, dredged at 7–8 fathoms [13–15] m depth on sand, June 1932, H.L. Clark.

Remarks

H.L. Clark (1938) did not designate a paratype but the original label is marked paratype.

Genus *Nectria* Gray, 1840

***Nectria saoria* Shepherd, 1967**

Nectria saoria Shepherd, 1967: 475–478, figures 1, 2.

Material Examined

Paratype number WAM 8-64 (1; dry) [new registration number: WAM Z 1762].

Locality: Hamelin Bay [34°12'S, 115°01'E], near Cape Leeuwin, Western Australia, on jetty piles, 30 December 1961, B.R. Wilson and S. Slack-Smith.

***Nectria wilsoni* Shepherd and Hodgkin, 1965**

Nectria wilsoni Shepherd and Hodgkin, 1965: 119–121, figure 1.

Material Examined

Holotype number WAM 3-65 (1; dry) [new registration number: WAM Z 1763].

Locality: Reef off Sorrento Beach [31°50'S, 115°45'E], near Perth, Western Australia, 2 fathoms [3.7 m] depth, 27 January 1963, B.R. Wilson.

Paratype number WAM 18-59 (1; dry) [new registration number: WAM Z 1764].

Locality: Eagle Bay [33°33'S, 115°04'E], Cape Naturaliste, Western Australia, 30 feet [9 m] depth, on rocky reef, 27 December 1958, B.R. Wilson.

Paratype number WAM 19-59 (1; dry) [new registration number: WAM Z 1765].

Locality: Dunsborough, [33°36'S, 115°06'E], Western Australia, one mile off shore, 9 m depth, 25 December 1958, B.R. Wilson and L. Marsh.

Paratype number WAM 2-62 (1; dry) [new registration number: WAM Z 1766].

Locality: Hamelin Bay [34°12'S, 115°01'E], near Cape Leeuwin, Western Australia, on jetty piles, 30 December 1961, B.R. Wilson and S. Slack-Smith.

Paratype number WAM 3-62 (1; dry) [new registration number: WAM Z 1767].

Locality: Off Beagle Island, Western Australia, (29°50'S, 114°52'E), March 1961, Poole brothers on R.V. *Bluefin*.

Paratype number WAM 1-65 (1; dry) [new registration number: WAM Z 1768].

Locality: Dunsborough, [33°36'S, 115°06'E], Western Australia, 55 feet [17 m] on limestone reef, 15 April 1963, B.R. Wilson.

Paratype number WAM 2-65 (1; dry) [new registration number: WAM Z 1769].

Locality: Reef off Sorrento Beach [31°50'S, 115°45'E], near Perth, Western Australia, on *Posidonia*, B.R. Wilson.

Paratype number WAM 4-65 (1; dry) [new registration number: WAM Z 1770].

Locality: Reef off Sorrento Beach [31°50'S, 115°45'E], near Perth, Western Australia, 21 December 1963, B.R. Wilson.

Paratype number WAM 5-65 (1; dry) [new registration number: WAM Z 1771].

Locality: Reef off Sorrento Beach [31°50'S, 115°45'E], near Perth, Western Australia, 18 feet [5.5 m] depth, on *Posidonia* near limestone reef, 23 November 1963, B.R. Wilson.

Remarks

WAM 18-59 was dark red in colour, WAM 19-59 was orange and WAM 3-62 was bright red with mauve markings. Shepherd and Hodgkin (1965) refer to some of the material, WAM 2-65 and 4-65 as being collected from Sorrento reef near Fremantle, and WAM 5-65 and the holotype WAM 3-65 from Sorrento Beach. All these specimens were collected from the same locality, reef off Sorrento Beach north of Perth.

Order SPINULOSIDA Perrier, 1884

Family Echinasteridae Verrill, 1867

Genus *Echinaster* Müller and Troschel, 1840

Echinaster arcystatus H.L. Clark, 1914

Echinaster arcystatus H.L. Clark, 1914: 148-150, plate 21.

Material Examined

Holotype number WAM 4918 (1; dry) [new registration number: WAM Z 1741].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Echinaster varicolor H.L. Clark, 1938

Echinaster varicolor H.L. Clark, 1938: 184-186, plate 11, figure 1.

Material Examined

Paratype number WAM 125-39 (1; dry) [new registration number: WAM Z 1742].

Locality: Vicinity of Broome [17°58'S, 122°14'E], Western Australia, 7-8 fathoms [13-15 m] depth, June 1932, H.L. Clark *et al.*

Remarks

Although Clark (1938) did not designate any paratypes the original label is marked paratype in

Clark's handwriting; some of the label is worn and cannot be deciphered.

Order FORCIPULATIDA Perrier, 1884

Family Asteriidae Gray, 1840

Genus *Smilasterias* Sladen, 1889

Smilasterias multipara O'Loughlin and O'Hara, 1990

Smilasterias multipara O'Loughlin and O'Hara, 1990: 311-315, figures 2, 3, plate 1A-B.

Material Examined

Paratypes number WAM 428-86 (5; wet) [new registration number: WAM Z 1721].

Locality: E of Mushroom Reef, Flinders [38°29'S 145°02'E], Victoria, rocky intertidal ocean platform, 8 February 1986, M. O'Loughlin.

Class OPHIUROIDEA Gray, 1840

Order PHRYNOPHIURIDA Matsumoto, 1915

Family Asteroschematidae Verrill, 1899

Genus *Ophiocreas* Lyman, 1869

Ophiocreas melambaphes H.L. Clark, 1914 (junior synonym of *Astrobrachion adhaerens* (Studer, 1884))

Ophiocreas melambaphes H.L. Clark, 1914: 155.

Material Examined

Holotype number WAM 4925 (1; wet) [new registration number: WAM Z 1952].

Locality: Off Jurien Bay [30°18'S, 115°00'E], Western Australia, 80-100 fathoms [146-183 m] depth, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

Baker (1980) reported this species as a synonym of *Astrobrachion adhaerens* (Studer, 1884). Although H.L. Clark (1938) indicates there are two specimens with the number WAM 4925, only the holotype is in the collection. The paratype is in the MCZ collections, MCZ#3669 (Baker, 1980).

Ophiocreas rhabdotum H.L. Clark, 1914 (junior synonym of *Astrobrachion adhaerens* (Studer, 1884))

Ophiocreas rhabdotum H.L. Clark, 1914: 156.

Material Examined

Holotype number WAM 4926 (1; wet) [new registration number: WAM Z 1953].

Locality: Off Jurien Bay [30°18'S, 115°00'E],

Western Australia, 80–100 fathoms [146–183 m] depth, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

Baker (1980) reported this species as a synonym of *Astrobrachion adhaerens* (Studer, 1884). Although H.L. Clark (1938) indicates there are two specimens with the number WAM 4926, only the holotype is in the collection. The paratype is in the MCZ collections, MCZ#3668 (Baker, 1980).

Family Euryalidae Gray, 1840

Genus *Euryale* Oken, 1815

Euryale euopla H.L. Clark, 1938

(junior synonym of *Euryale aspera* Lamarck, 1816)

Euryale euopla H.L. Clark, 1938: 203–204, plate 23, figure 1.

Material Examined

Holotype number WAM 9683 (1; dry) [new registration number: WAM Z 1954].

Locality: Bald Island [34°55'S, 118°27'E], E of Albany, Western Australia, collected by the Chief Inspector of Fisheries.

Remarks

Baker (1980) reported this species as a synonym of *Euryale aspera* Lamarck, 1816. Some of the arms of the specimen are damaged.

Family Gorgonocephalidae Ljungman, 1867

Genus *Asteroporpa* Oersted and Lütken, 1856

Subgenus *Asteroporpa* (*Astromoana*) Baker, 1980

Asteroporpa (*Astromoana*) *indicus* Baker, 1980

Asteroporpa (*Astromoana*) *indicus* Baker, 1980: 38, 40, figures 10, 31.

Material Examined

Holotype number WAM 737-75 (1; dry) [new registration number: WAM Z 1955].

Locality: CSIRO station DM6/63/182, W of Point Cloates (23°05'S, 113°23'E), Western Australia, beam trawl at 77 fathoms [141 m] depth, 7 October 1963, collector unknown on H.M.A.S. *Diamantina*.

Genus *Astroconus* Döderlein, 1911

Astroconus occidentalis H.L. Clark, 1938

(junior synonym of *Conocladus australis* (Verrill, 1876))

Astroconus occidentalis H.L. Clark, 1938: 205–206, plate 23, figure 2.

Material Examined

Holotype number WAM 116-37 (1; dry) [new registration number: WAM Z 1956].

Locality: North Beach [31°52'S, 115°45'E], near Perth, Western Australia, 1937, collector unknown.

Remarks

Baker (1980) reported this species as a synonym of *Conocladus australis* (Verrill, 1876). Rowe and Gates (1995) give the locality as North Beach, Fremantle but this beach is closer to Perth than Fremantle.

Genus *Conocladus* H.L. Clark, 1909

Conocladus microconus H.L. Clark, 1914 (currently *Astrosierra microconus* (H.L. Clark, 1914))

Conocladus microconus H.L. Clark, 1914: 156–158, plate 25.

Material Examined

Holotype number WAM 4921 (1; wet) [new registration number: WAM Z 1957].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, 80–120 fathoms [146–219 m] depth, 10 June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

H.L. Clark (1914) notes there are two specimens with the number WAM 4921, the larger of which is the holotype. Only one specimen remains in the collection, the other is in the MCZ Dry Collection (MCZ#3670) and is labelled paratype. Baker (1980) transferred this species to the genus *Astrosierra* Baker, 1980.

Family Ophiomyxidae Ljungman, 1866

Genus *Astrogymnotes* H.L. Clark, 1914

Astrogymnotes catasticta H.L. Clark, 1914

Astrogymnotes catasticta H.L. Clark, 1914: 154–155, plate 22.

Material Examined

Holotype number WAM 4924 (1; wet) [new registration number: WAM Z 1972].

Paratype number WAM 4924 (5; wet) [new registration number: WAM Z 1973].

Locality: Off Jurien Bay [30°18'S, 115°00'E], Western Australia, 80–100 fathoms [146–183 m] depth, 10 June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

H.L. Clark (1914) noted the type series

consisted of ten specimens with the WAM number 4924. Rowe and Gates (1995) reported that the WAM has ten syntypes. The holotype is labelled as such on the original label in H.L. Clark's handwriting and a total of six specimens are held in the WAM; the holotype and five paratypes. Three paratypes are in the MCZ Wet Collection (MCZ#3683) and two are in the Dry Collection (MCZ#3667) (F. J. Collier, personal communication) bringing the total number in the type series to 11. We have no explanation regarding the additional specimen in the type series.

Order OPHIURIDA Müller and Troschel, 1840

Family Amphiuridae Ljungman, 1867

Genus *Amphioplus* Verrill, 1899

Subgenus *Amphioplus* (*Amphioplus*) Verrill, 1899

***Amphioplus stenaspis* H.L. Clark, 1938**

Amphioplus stenaspis H.L. Clark, 1938: 254–256, figures 18–19.

Material Examined

Paratype number WAM 198-39 (1; dry) [new registration number: WAM Z 1946].

Locality: 3¹/₂ mile reef, Port Darwin [12°27'S, 130°48'E], Northern Territory, on rock, a little below low water mark [0–1 m depth], June 24 1929, H.L. Clark, CAH Expedition.

Remarks

This specimen is one of eight paratypes collected from the same rock fragment. A.M. Clark (1970) placed this species in the subgenus *Amphioplus* (*Amphioplus*) Verrill, 1899. Rowe and Gates (1995) do not mention that a paratype of this species is in the WAM.

Genus *Amphiura* Forbes, 1843

Subgenus *Amphiura* (*Amphiura*) Forbes, 1843

***Amphiura bidentata* H.L. Clark, 1938**

Amphiura bidentata H.L. Clark, 1938: 218–220, figure 13.

Material Examined

Paratype number WAM 190-39 (1; dry) [new registration number: WAM Z 1947].

Locality: Broome [17°58'S, 122°14'E], Western Australia, June 1932, H.L. Clark, CAH Expedition.

Remarks

A.M. Clark (1970) placed this species in the subgenus *Amphiura* (*Amphiura*) Forbes, 1843. Rowe and Gates (1995) do not mention that a paratype of

this species is in the WAM. The specimen is missing some arms.

***Amphiura bountyia* Devaney, 1974**

Amphiura bountyia Devaney, 1974: 127–131, figures 6–7.

Material Examined

Paratype number WAM 147-72 (1; dry) [new registration number: WAM Z 1948].

Locality: Station PIT VI, haul 5, Pitcairn Island, South Pacific, (25°02'S, 130°06'W to 25°04'S, 130°07'W), on coral, rocks and rubble, dredged at 45–55 fathoms [82–101 m] depth, 19 October 1967, D.M. Devaney *et al.* on *Pele*.

Remarks

Some arms are missing from this specimen.

***Amphiura phrixa* H.L. Clark, 1938**

(junior synonym of *Amphiura* (*Amphiura*) *catephes* H.L. Clark, 1938)

Amphiura phrixa H.L. Clark, 1938: 232–233.

Material Examined

Paratype number WAM 188-39 (1; dry) [new registration number: WAM Z 1949].

Locality: Roebuck Bay, Broome [18°04'S, 122°19'E], Western Australia, June 1932, H.L. Clark, CAH Expedition.

Remarks

Baker (1979) synonymised this species with *Amphiura* (*Amphiura*) *catephes* H.L. Clark, 1938. Rowe and Gates (1995) do not mention that a paratype of *A. phrixa* is held in the WAM.

Genus *Ophionephthys* Lütken, 1869

***Ophionephthys tenuis* H.L. Clark, 1938
(currently *Amphiura* (*Ophiopeltis*) *tenuis*
(H.L. Clark, 1938))**

Ophionephthys tenuis H.L. Clark, 1938: 241–243.

Material Examined

Paratypes number WAM 193-39 (2; dry) [new registration number: WAM Z 1950].

Locality: Broome [17°58'S, 122°14'E], Western Australia, mud flats near jetty, September 1929, CAH Expedition.

Remarks

This species was transferred to *Amphiura* (*Ophiopeltis*) *tenuis* (H.L. Clark, 1938) by A.M. Clark (1970). Rowe and Gates (1995) do not mention that

paratype material of this species is in the WAM. Both specimens have some damaged arms.

Family Ophiacanthidae Perrier, 1891

Genus *Ophiacantha* Müller and Troschel, 1842

***Ophiacantha clavigera* Koehler, 1907**

Ophiacantha clavigera Koehler, 1907: 247.

Material Examined

Paralectotype number WAM 4416 (1; wet) [new registration number: WAM Z 1958].

Locality: Station 56, Koombana Bay [33°18'S, 115°39'E], SW of Bunbury, Western Australia, 14.5–18 m depth, 28 June 1905, W. Michaelsen and R. Hartmeyer, Hamburg SW Australian Expedition.

Remarks

Baker and Devaney (1981) noted that three museums (MNB, ZMH and WAM) have specimens labelled holotype, or type, from station 51 (Cockburn Sound) and station 56 (Koombana Bay). They selected Cockburn Sound as the type locality and designated ZMH E2016 from station 51 as lectotype. The remaining specimens in the type series were designated paralectotypes.

***Ophiacantha shepherdii* Baker and Devaney, 1981**

Ophiacantha shepherdii Baker and Devaney, 1981: 163–167, figures 37, 38, 69–74.

Material Examined

Paratypes number WAM 19-81 (2; wet) [new registration number: WAM Z 1959].

Locality: Oedipus Point, West Island [32°31'S, 133°15'E], South Australia, 15 m depth, S.A. Shepherd.

Remarks

Rowe and Gates (1995) did not record that paratypes are held in the WAM. These specimens are presently missing from the collection.

Family Ophiactidae Matsumoto, 1915

Genus *Ophiactis* Lutken, 1856

***Ophiactis acosmeta* H.L. Clark, 1938**

(junior synonym of *Ophiactis macrolepidota* Marktanner-Turneretscher, 1887)

Ophiactis acosmeta H.L. Clark, 1938: 262–264.

Material Examined

Paratype number WAM 216-39 (1; dry) [new registration number: WAM Z 1960].

Locality: Broome [17°58'S, 122°14'E], Western Australia, 5–8 fathoms [9–15 m] depth, June 1932, H.L. Clark, CAH Expedition.

Remarks

Rowe and Gates (1995) reported this species as a synonym of *Ophiactis macrolepidota* Marktanner-Turneretscher, 1887. They did not mention that paratype material of *Ophiactis acosmeta* is held in the WAM. Only one specimen now exists with some arms broken. A second specimen recorded with the number 217-39 is not in the collection. A number of type specimens are in the MCZ, the holotype (MCZ#5045) and 11 paratypes (MCZ#5046; 8 specimens; MCZ#5040; 3 specimens).

***Ophiactis fuscolineata* H.L. Clark, 1938**

Ophiactis fuscolineata H.L. Clark, 1938: 266–267.

Material Examined

Paratypes number WAM 218-39 (1; dry) [new registration number: WAM Z 1962]; WAM 219-39 (1; dry) [new registration number: WAM Z 1963]; WAM 220-39 (1; dry) [new registration number: WAM Z 1964].

Locality: East Point [12°25'S, 130°49'E], Darwin, Northern Territory, June and July 1929, H.L. Clark and A.A. Livingstone, CAH Expedition.

Remarks

Rowe and Gates (1995) did not report that three paratypes of this species are held in the WAM. One specimen has a few arms detached.

***Ophiactis laevis* H.L. Clark, 1938**

(junior synonym of *Ophiactis tricolor* H.L. Clark 1938)

Ophiactis laevis H.L. Clark, 1938: 268–270.

Material Examined

Paratypes number WAM 221-39 (1; dry) [new registration number: WAM Z 1965]; WAM 222-39 (1; dry) [new registration number: WAM Z 1966].

Locality: Koombana Bay, Bunbury [33°18'S, 115°39'E], Western Australia, 5–8 fathoms [9–15 m] depth, 26 October 1929, H.L. Clark.

Remarks

Baker and Devaney (1981) reported this species as a synonym of *Ophiactis tricolor* H.L. Clark, 1938. Rowe and Gates (1995) did not report that paratypes of this species are held in the WAM. The specimens are damaged; one has most of the arms detached.

Family Ophiocomidae Ljungman, 1867

Genus *Ophiocoma* Agassiz, 1836

***Ophiocoma occidentalis* H.L. Clark, 1938**

Ophiocoma occidentalis H.L. Clark, 1938: 334–337, plate 25, figure 1.

Material Examined

Paratypes number WAM 270-39 (1; dry) [new registration number: WAM Z 1967]; WAM 271-39 (1; dry) [new registration number: WAM Z 1968].

Locality: Cape Peron [32°16'S, 115°41'E], Western Australia, October 1929, H.L. Clark and E.W. Bennett.

Remarks

H.L. Clark (1938) states the locality as Point Peron in error. Rowe and Gates (1995) did not report that these paratypes are held in the WAM. Some arms of these specimens are broken at the tips.

Genus *Ophiomastix* Müller and Troschel, 1842

Ophiomastix stenozonula Devaney, 1974

Ophiomastix stenozonula Devaney, 1974: 164–171, figures 15–20.

Material Examined

Paratype number WAM 149-72 (1; dry) [new registration number: WAM Z 1969].

Locality: Passe de Teavaroa, Papara district, [approx. 17°44'S, 149°35'W] Tahiti, South Pacific, from coral *Pocillopora meandrina*, 70–90 feet [21–27 m] depth, 4 September 1967, D.M. Devaney.

Remarks

Three of the arms of this specimen are damaged.

Family Ophiidermatidae Ljungman, 1867

Genus *Ophiarachnella* Ljungman, 1872

Ophiarachnella ramsayi (Bell, 1888)

Ophiarachnella ramsayi variety *pulchra* H.L. Clark, 1938

Ophiarachnella ramsayi variety *pulchra* H.L. Clark, 1938: 347–349, plate 14, figure 1.

Material Examined

Holotype number WAM 15058 (1; dry) [new registration number: WAM Z 1970].

Locality: Rottnest Island [32°01'S, 115°30'E], Western Australia, January 1929, Mr. Horbury.

Remarks

This specimen is the holotype of the variety. Rowe and Gates (1995) do not mention the variety *pulchra*.

Genus *Ophiopeza* Peters, 1851

Ophiopeza kingi Devaney, 1974

Ophiopeza kingi Devaney, 1974: 180–184, figures 23–25.

Material Examined

Paratypes number WAM 148-72 (2; dry) [new registration number: WAM Z1971].

Locality: Station PIT. VII, haul 4, Pitcairn Island, South Pacific (25°03'30"S, 130°04'E), dredged on coral rubble at 30–40 fathoms [55–73 m] depth, 20 October 1967, D.M. Devaney *et al.* on *Pele*.

Family Ophionereididae Ljungman, 1867

Genus *Ophionereis* Lütken, 1859

Ophionereis stigma H.L. Clark 1938 (junior synonym of *Ophionereis dubia* (Müller and Troschel, 1842))

Ophionereis stigma H.L. Clark 1938: 325–327.

Material Examined

Paratype number WAM 262-39 (1; dry) [new registration number: WAM Z 1974].

Locality: Broome [17°58'S, 122°14'E], Western Australia, August and September, 1929, CAH Expedition.

Remarks

H.L. Clark (1938) did not designate paratypes but the specimen is labelled paratype on the original label in H.L. Clark's handwriting. A.M. Clark (1953) reported this species as a synonym of *Ophionereis dubia* (Müller and Troschel, 1842). Rowe and Gates (1995) did not record that one paratype of this species is held in the WAM. They record the type locality as Cape Leveque which is north of Broome. The arms and disc have separated.

Family Ophiotrichidae Ljungman, 1866

Genus *Lissophiothrix* H.L. Clark, 1938

Lissophiothrix delicata H.L. Clark, 1938

Lissophiothrix delicata H.L. Clark, 1938: 276–278.

Material Examined

Paratype number WAM 239-39 (1; dry) [new registration number: WAM Z 1975].

Locality: Broome [17°58'S, 122°14'E], Western Australia, 5–8 fathoms [9–15 m] depth, June 1932, CAH Expedition.

Remarks

Rowe and Gates (1995) did not record that one paratype of this species is held in the WAM. Two arms are detached from the specimen.

Genus *Macrophiothrix* H.L. Clark, 1938

***Macrophiothrix scotia* H.L. Clark, 1938**
(junior synonym of *Macrophiothrix megapoma*
H.L. Clark, 1938)

Macrophiothrix scotia H.L. Clark, 1938: 300–302, plate 24, figure 2.

Material Examined

Paratype number WAM 243-39 (1; dry) [new registration number: WAM Z 1976].

Locality: Entrance Point [18°01'S, 122°13'E], Broome, Western Australia, August and September 1929, H.L. Clark.

Remarks

Hoggett (1991) reported this species as a synonym of *Macrophiothrix megapoma* H.L. Clark, 1938. Rowe and Gates (1995) did not record that a paratype of *Macrophiothrix scotia* is held in the WAM.

***Macrophiothrix spinifera* H.L. Clark, 1938**
(junior synonym of *Macrophiothrix megapoma*
H.L. Clark, 1938)

Macrophiothrix spinifera H.L. Clark, 1938: 302–304, plate 24 figure 3.

Material Examined

Paratype number WAM 244-39 (1; dry) [new registration number: WAM Z 1977].

Locality: Broome [17°58'S, 122°14'E], Western Australia, August and September 1929, H.L. Clark, CAH Expedition.

Remarks

Hoggett (1991) reported this species as a synonym of *Macrophiothrix megapoma* H.L. Clark, 1938. Rowe and Gates (1995) did not record that a paratype of *Macrophiothrix spinifera* is held in the WAM. Some of the tips of the arms of the specimen are damaged.

Genus *Ophiothrix* Müller and Troschel, 1840

Subgenus *Ophiothrix* (*Ophiothrix*) Müller and Troschel, 1840

***Ophiothrix stelligera* form *atra* H.L. Clark, 1938**
(junior synonym of *Ophiothrix* (*Ophiothrix*)
ciliaris (Lamarck, 1816))

Ophiothrix stelligera form *atra* H.L. Clark, 1938: 274.

Material Examined

Paratype number WAM 237-39 (1; dry) [new registration number: WAM Z 1978].

Locality: Broome [17°58'S, 122°14'E], Western Australia, June 1932, H.L. Clark.

Remarks

Rowe and Gates (1995) reported *Ophiothrix stelligera* as a synonym of *Ophiothrix* (*Ophiothrix*) *ciliaris* (Lamarck, 1816). They did not mention the form *atra* described by H.L. Clark (1938). This material is the paratype of the form *atra*.

Ophiothrix stelligera* form *atrolineata
H.L. Clark, 1938

(junior synonym of *Ophiothrix* (*Ophiothrix*)
ciliaris (Lamarck, 1816))

Ophiothrix stelligera form *atrolineata* H.L. Clark, 1938: 274.

Material Examined

Paratype number WAM 10476 (1; dry) [new registration number: WAM Z 1979].

Locality: Cottesloe [31°59'S, 115°45'E], Western Australia, from sponge, 7 July 1923, collector unknown.

Paratype number WAM 238-39 (1; dry) [new registration number: WAM Z 1980].

Locality: Broome [17°58'S, 122°14'E], Western Australia, June 1932, H.L. Clark.

Remarks

Rowe and Gates (1995) reported *Ophiothrix stelligera* as a synonym of *Ophiothrix* (*Ophiothrix*) *ciliaris* (Lamarck, 1816). They did not mention the form *atrolineata* described by H.L. Clark (1938). This material is the paratype of the form *atrolineata*.

***Ophiothrix hartmeyeri* Koehler, 1907**
(junior synonym of *Ophiothrix* (*Ophiothrix*)
caespitosa Lyman, 1879)

Ophiothrix hartmeyeri Koehler, 1907: 241–254, figures 1–10.

Material Examined

Paratype number WAM 4209 (1; wet) [new registration number: WAM Z 1981].

Locality: Station 26, Sunday Island, Shark Bay [26°07'S, 113°14'E], Western Australia, 5.5 m depth, 17 June 1905, W. Michaelsen and R. Hartmeyer, Hamburg SW Australian Expedition.

Remarks

H.L. Clark (1946) reported this species as a synonym of *Ophiothrix* (*Ophiothrix*) *caespitosa* Lyman, 1879. Rowe and Gates (1995) did not record this paratype in the WAM.

Subgenus *Ophiothrix* (*Placophiothrix*)
H.L. Clark, 1938

Ophiothrix* (*Placophiothrix*) *westwardi
Devaney, 1974

(junior synonym of *Macrophiothrix propinqua*
(Lyman, 1861))

Ophiothrix (Placophiothrix) westwardi Devaney, 1974:
143–149, figures 8–14.

Material Examined

Paratype number WAM 150-72 (1; dry) [new registration number: WAM Z 1982].

Locality: Station NH IV, E side Taiohae Bay, Nuku Hiva, Marquesas Islands, S Pacific, (8°57'S, 140°05'W), rocks and coral heads, 5–15 feet [1–5 m] depth, 16 September 1967, D.M. Devaney on *Pele*.

Paratypes number WAM 151-72 (2; dry) [new registration number: WAM Z 1983].

Locality: Station FH III, S side Hanavave Baie, Fatu Hiva, Marquesas Islands, S. Pacific, (10°27'S, 138°39'30"W), sublittoral reef with coral and volcanic rocks, 10–60 feet, [3–18 m] depth, 26 September 1967, D.M. Devaney on *Pele*.

Paratype number WAM 152-72 (1; dry) [new registration number: WAM Z 1984].

Locality: Station THI, haul 1, Tahuata Island, Marquesas Islands, S Pacific, (10°00'S, 139°10'W), dredged on coarse yellow sand, 45–46 fathoms, [82–84 m] depth, 28 September 1967, D.M. Devaney on *Pele*.

Paratype number WAM 153-72 (1; wet) [new registration number: WAM Z 1985].

Locality: Station UP IVa, Ua Pou, S side Hikeu Bay, Marquesas Islands, S Pacific, (9°26'S, 140°04'W), sublittoral rocky bottom, under boulders and in coral, 15–30 feet, [4–9 m] depth, 23 September 1967, D.M. Devaney and T. Richert on *Pele*.

Remarks

Hoggett (1991) recorded this species as a synonym of *Macrophiothrix propinqua* (Lyman, 1861). Rowe and Gates (1995) did not record these paratypes in the WAM. Some of the specimens are missing some arms.

Family Ophiuridae Lyman, 1865

Genus *Ophiolepis* Müller and Troschel, 1840

Ophiolepis plateia Ziesenhenne, 1940

Ophiolepis plateia Ziesenhenne, 1940: 41, plate 8, figures 4–6.

Material Examined

Paratypes number WAM 59-73 (2; dry) [new registration number: WAM Z 1986].

Locality: Station 483-35, Tenacatita Bay, Mexico, (19°18'N, 104°46'W) 6 fathoms, [11 m] depth, 15 February 1935, F.C. Ziesenhenne on *Valero*.

Remarks

The tips of some arms are damaged.

Ophiolepis unicolor H.L. Clark, 1938

Ophiolepis unicolor H.L. Clark, 1938: 364–365, plate 25, figure 2.

Material Examined

Paratype number WAM 285-39 (1; dry) [new registration number: WAM Z 1987].

Locality: Broome [17°58'S, 122°14'E], Western Australia, 1932, H.L. Clark, CAH Expedition.

Remarks

Although no paratype was designated by Clark (1938) the original label is marked paratype. Rowe and Gates (1995) do not mention that a paratype of this species is held in the WAM.

Class ECHINOIDEA Leske, 1778

Order CIDAROIDA Claus, 1880

Family Cidaridae Gray, 1825

Genus *Phyllacanthus* Brandt, 1835

Phyllacanthus magnificus H.L. Clark, 1914

Phyllacanthus magnificus H.L. Clark, 1914: 158–160, plate 26.

Material Examined

Holotype number WAM 4935 (1; dry) [new registration number: WAM Z 1715].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, trawled, date and collector unknown on F.I.S. *Endeavour*.

Remarks

H.L. Clark (1914) described the holotype as "one of the largest and most perfectly preserved cidarids I have ever seen". Unfortunately the specimen has deteriorated and now consists of disarticulated plates and spines. Originally there were two specimens with this number in the WAM but a specimen labelled cotype (syntype) is in the MCZ Dry Collection (MCZ#3900) (F.J. Collier, personal communication), and should be regarded as a paratype (ICZN 1985 Recommendation 73D).

Order DIADEMATOIDA Duncan, 1889

Family Diadematidae Gray, 1855

Genus *Centrostephanus* Peters, 1854

Centrostephanus tenuispinus H.L. Clark, 1914

Centrostephanus tenuispinus H.L. Clark, 1914: 162–163, plate 26.

Material Examined

Holotype number WAM 4936 (1; dry) [new registration number: WAM Z 1878].

Paratypes number WAM 4936 (1; dry) [new registration number: WAM Z 1879]; WAM 4936 (1; dry) [new registration number: WAM Z 1715].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

H.L. Clark (1914) records the presence of two specimens with the number WAM 4936, one of which, recorded as such on the original label, is the holotype. A total of three specimens with the number 4936 are held in the collection and two are labelled cotype by H.L. Clark, but should be regarded as paratypes (ICZN 1985 Recommendation 73D). Rowe and Gates (1995) do not mention that paratype material is held in the WAM in addition to the holotype, and query that a paratype specimen is held in the MCZ. The MCZ does hold an additional specimen (MCZ#3905) as a dry paratype collected from between Fremantle and Geraldton.

Order TEMNOPLEUROIDA Mortensen, 1942

Family Temnopleuridae A. Agassiz, 1872

Genus *Pseudechinus* Mortensen, 1903

Pseudechinus flemingi Fell, 1958

Pseudechinus flemingi Fell, 1958: 36, plate 3A,C, plate 5a.

Material Examined

Paratype number WAM 1751-75 (1; dry) [new registration number: WAM Z 1888].

Locality: Station 41, Chatham Island Rise [42°50'–44°00'S, 174°00'–178°00'E], New Zealand, 260 fathoms [475 m] depth, January 1954, Chatham Island Expedition.

Remarks

This specimen was presented to the WAM by A.N. Baker of the National Museum of New Zealand. The specimen is a juvenile.

Order CLYPEASTEROIDA A. Agassiz, 1872

Family Clypeasteridae L. Agassiz, 1835

Genus *Clypeaster* Lamarck, 1801

Subgenus *Clypeaster* (*Coronanthus*) Lampert, 1913

Clypeaster telurus H.L. Clark, 1914

Clypeaster telurus H.L. Clark, 1914: 166–167, plate 23.

Material Examined

Holotype number WAM 4937 (1; dry) [new registration number: WAM Z 1877].

Locality: Between Fremantle [32°03'S, 115°45'E] and Geraldton [28°46'S, 114°37'E], Western Australia, June 1912, W.B. Alexander on F.I.S. *Endeavour*.

Remarks

Rowe and Gates (1995) included this species in the subgenus *Clypeaster* (*Coronanthus*) Lampert, 1913.

Family Fibulariidae Gray, 1855

Genus *Echinocyamus* Phelsum, 1774

Echinocyamus planissimus H.L. Clark, 1938

Echinocyamus planissimus H.L. Clark, 1938: 422–423, plate 27, figures 5–8.

Material Examined

Paratype number WAM 174-39 (1; dry) [new registration number: WAM Z 1880].

Locality: Broome [17°58'S, 122°14'E], Western Australia, September 1929, H.L. Clark, CAH Expedition.

Remarks

Although H.L. Clark (1938) did not designate paratypes the original label is marked paratype. Rowe and Gates (1995) do not mention that paratype material of this species is in the WAM.

Family Laganidae A. Agassiz, 1873

Genus *Peronella* Gray, 1855

Peronella aphnostina H.L. Clark, 1914 (junior synonym of *Peronella lesueuri* (Valenciennes, 1841))

Peronella aphnostina H.L. Clark, 1914: 167–168, plate 24.

Material Examined

Holotype number WAM 3936 (1; dry) [new registration number: WAM Z 1881].

Locality: Carnac Island [32°07'S, 115°40'E], near Fremantle, Western Australia.

Remarks

Mortensen (1918) reported this species as a synonym of *Peronella lesueuri* (Valenciennes, 1841). The synonymy of *P. aphnostina* with *P. lesueuri* is not recorded in Rowe and Gates (1995). This specimen has been missing from the collection for a number of years.

Order SPATANGOIDA Claus, 1876

Family Brissidae Gray, 1855

Genus *Cyclaster* Cotteau, 1856***Cyclaster regalis* Baker, 1969**

Cyclaster regalis Baker, 1969: 266–270, figures 1–18, plate 1.

Material Examined

Paratype number WAM 1754-75 (1; dry) [new registration number: WAM Z1889].

Locality: off Coromandel Peninsula, between Mayor and Cuvier Islands (37°08'S, 176°18'E), New Zealand, 210–480 m depth, 1 to 9 January 1969, R.D. Cooper.

Remarks

This specimen was presented to the WAM by A.N. Baker of the National Museum of New Zealand.

Genus *Rhynobrissus* A. Agassiz, 1872***Rhynobrissus tumulus* McNamara, 1982**

Rhynobrissus tumulus McNamara, 1982: 351–359, figures 1–5.

Material Examined

Holotype number WAM 1047-81 (1; dry) [new registration number: WAM Z 1871].

Paratypes number WAM 1048-81 (1; dry) [new registration number: WAM Z 1872]; WAM 1049-81 (1; dry) [new registration number: WAM Z 1873]; WAM 1050-81 (1; dry) [new registration number: WAM Z 1874]; WAM 1051-81 (11; dry) [new registration number: WAM Z 1875].

Locality: Beach east of Cape Dupuy, (20°40'S, 115°26'E), N coast of Barrow Island, Western Australia, beach drift, 27 September 1981, K.J. McNamara, W.H. Butler, G.W. Kendrick.

Remarks

A small piece has broken off WAM 1050-81. The paratype WAM 1048-81 is presently missing from the collection.

Family Pericosmidae Lambert, 1905**Genus *Pericosmus* L. Agassiz, 1847*****Pericosmus porphyrocardius* McNamara, 1984**

Pericosmus porphyrocardius McNamara, 1984: 89–95, figures 1–3.

Material Examined

Holotype number WAM 729-83 (1; dry) [new registration number: WAM Z 1882].

Paratypes number WAM 730-83 (6; dry) [new registration number: WAM Z 1883]; WAM 731-83 (1; dry) [new registration number: WAM Z 1884];

WAM 732-83 (1; dry) [new registration number: WAM Z 1885].

Locality: Station SO 2/82/17A, 140 nautical miles NNW of Port Hedland, (18°01'S, 118°17'E to 18°04'S, 118°12'E), Western Australia, trawled from foram-rich mud at 410–420 m depth, 3 April 1982, L.M. Marsh on R.V. *Soela*.

Paratype number WAM 733-83 (1; dry) [new registration number: WAM Z 1886].

Locality: Station SO 2/82/38, 122 nautical miles NNW of Port Hedland, (18°22'S, 117°56'E to 18°23'S, 117°54'E), Western Australia, Engel trawled for 30 minutes from mud at 316–309 m depth, 11 April 1982, L.M. Marsh on R.V. *Soela*.

Paratypes number WAM 734-83 (4; dry) [new registration number: WAM Z 1887].

Locality: Station SO 4A/82/8D, 150 nautical miles NNW of Port Hedland, (17°58'S, 118°25'E), Western Australia, trawled from mud at 376 m depth, 1 August 1982, J. Fromont on R.V. *Soela*.

Remarks

McNamara (1984) reported that there were six specimens with the number WAM 730-83 but only five remain. The specimens WAM 731-83, 732-83 and 733-83 are all slightly damaged.

Class HOLOTHUROIDEA de Blainvillè, 1834**Order DENDROCHIROTIDA Brandt, 1835****Family Cucumariidae Ludwig, 1894****Genus *Actinocucumis* Ludwig, 1875*****Actinocucumis longipedes* H.L. Clark, 1938**

(junior synonym of *Actinocucumis typica* Ludwig, 1875)

Actinocucumis longipedes H.L. Clark, 1938: 480–481, figure 45.

Material Examined

Paratype number WAM 4-64 (1; wet) [new registration number: WAM Z 1892].

Locality: Broome [17°58'S, 122°14'E], Western Australia, 5–7 fathoms [9–13 m] depth, 1929, H.L. Clark.

Remarks

Heding and Panning (1954) reported this species as a synonym of *Actinocucumis typica* Ludwig, 1875. Rowe and Gates (1995) do not mention that paratype material of *A. longipedes* is held in the WAM. They record the type locality as False Cape Bossut, WA.

Genus *Colochirus* Troschel, 1846***Colochirus axiologus* H.L. Clark, 1914**

(junior synonym of *Pseudocolochirus violaceus* (Théel, 1886))

Colochirus axiologus H.L. Clark, 1914: 171–173, plate 25.

Material Examined

Holotype number WAM 4033 (1; wet) [new registration number: WAM Z 1893].

Locality: Port Hedland [20°18'S, 118°35'E], Western Australia, B.E. Bardwell.

Remarks

H.L. Clark (1914) reported the paratype number as 4032, but this number is not an echinoderm in the WAM catalogue. The MCZ has a specimen labelled syntype (MCZ#940) (F.J. Collier, personal communication), so we suggest the number 4032 for a specimen of this species was an error. The MCZ material should be regarded as a paratype (ICZN 1985 Recommendation 73D). Rowe and Gates (1995) report that the holotype and paratype of *Colochirus axiologus* are both held in the WAM. Cherbonnier (1988) reported this species as a synonym of *Pseudocolochirus violaceus* (Théel, 1886).

Genus *Leptopentacta* H.L. Clark, 1938

Leptopentacta grisea H.L. Clark, 1938

Leptopentacta grisea H.L. Clark, 1938: 453–455, figure 37.

Material Examined

Paratype number WAM 2-64 (1; wet) [new registration number: WAM Z 1895].

Locality: Broome [17°58'S, 122°14'E], Western Australia, mudflat near jetty, August 1929, H.L. Clark.

Remarks

Rowe and Gates (1995) do not mention that paratype material of this species is in the WAM.

Genus *Loisettea* Rowe and Pawson, 1985

Loisettea amphictena Rowe and Pawson, 1985

Loisettea amphictena Rowe and Pawson, 1985: 672–677, figures 1–3.

Material Examined

Paratype number WAM 54-63 (1; wet) [new registration number: WAM Z 1896].

Locality: 36 nautical miles SW of Adele Island [15°53'S, 122°46'E], Western Australia, dredged at 40 fathoms [73 m] depth, 17 October 1962, R.W. George on *Dorothea*.

Paratype number WAM 70-63, (1; wet) [new registration number: WAM Z 1951]; WAM 96-63 (1; wet) [new registration number: WAM Z 1897].

Locality: 3 to 4 nautical miles E of Delambre Island [20°26'S, 117°04'E], Dampier Archipelago, Western Australia, dredged at 10 fathoms [18 m] depth, rocky, 5 June 1960, B.R. Wilson on *Davena*.

Paratype number WAM 330-71 (1; wet) [new registration number: WAM Z 1898].

Locality: Off Carnarvon [24°53'S, 113°40'E], Western Australia, July to September 1967, W. and W. Poole on *Bluefin*.

Paratype number WAM 332-71 (1; wet) [new registration number: WAM Z 1899].

Locality: Blocks 2–6, Shark Bay [24°49'S, 113°33'E], Western Australia, August 1965, F.R.V. *Peron*.

Paratype number WAM 676-82 (1; wet) [new registration number: WAM Z 1900].

Locality: Station SO 2/82/54A, 38 nautical miles N of Port Walcott, Western Australia (19°59'S, 117°16'E), dredged on silty sand at 52–50 m depth, L.M. Marsh on R.V. *Soela*.

Paratype number WAM 677-82 (1; wet) [new registration number: WAM Z 1901].

Locality: Station SO 2/82/55, 36 nautical miles N of Port Walcott, Western Australia (20°01'S, 117°08'E), trawled on silty sand at 50 m depth, L.M. Marsh on R.V. *Soela*.

Remarks

Rowe and Gates (1995) do not mention the paratypes WAM 330-71, 332-71, 676-82 and 677-82.

Family Phylloporidae Oestergren, 1907

Genus *Thyone* Oken, 1815

Thyone grisea H.L. Clark, 1938

Thyone grisea H.L. Clark, 1938: 467–468, figure 40.

Material Examined

Paratype number WAM Z 1907 (1; wet).

Locality: False Cape Bossut S to 80 Mile Beach [18°35'S, 121°44'E], Western Australia, 8 September 1929, H.L. Clark.

Remarks

This specimen was not registered until 1998. Two labels are with this specimen. The label written by H.L. Clark's assistant designates the material as paratype. A later label (the writing on which we do not recognise) notes the material as probably metatype. We select the designation given by the earliest author.

Thyone minuta H.L. Clark, 1938

(currently *Stolus minutus* (H.L. Clark, 1938), possibly a junior synonym of *Stolus conjungens* (Semper, 1868))

Thyone minuta H.L. Clark, 1938: 470–471, figure 42.

Material Examined

Paratype number WAM 1-64 (6; wet) [new registration number: WAM Z 1908].

Locality: Pearl Shoal, Broome [18°00'S, 122°09'E], Western Australia, 5-7 fathoms [9-13 m] depth, June 1932, H.L. Clark.

Remarks

Rowe in Rowe and Gates (1995) transferred this species to the genus *Stolus* Selenka, 1867, and suggested that this species may prove to be synonymous with *S. conjungens* (Semper, 1868) but this decision awaits more material. Rowe and Gates (1995) did not mention that paratype material of *T. minuta* is held in the WAM.

Order ASPIDOCHIROTIDA Brandt, 1835**Family Holothuriidae Ludwig, 1894****Genus *Holothuria* Linnaeus, 1767**

Holothuria macroperona H.L. Clark, 1938
(possibly a junior synonym of *Holothuria*
(*Thymiosycia*) *hartmeyeri* Erwe, 1913)

Holothuria macroperona H.L. Clark, 1938: 535-538, figure 57.

Material Examined

Paratypes number WAM 16469 (1; wet) [new registration number: WAM Z 1902]; WAM 16470 (1; wet) [new registration number: WAM Z 1903]; WAM 16471 (1; wet) [new registration number: WAM Z 1904]; WAM 16472 (1; wet) [new registration number: WAM Z 1905]; WAM 16473 (1; wet) [new registration number: WAM Z 1906]; WAM Z 1961 (1; wet).

Locality: Bathurst Point [32°00'S, 115°33'E], Rottnest Island, Western Australia, December 1929, L. Glauert.

Remarks

The original label has five catalogue numbers but there are six specimens. The specimens have been separated and given six new registration numbers. H.L. Clark (1938) reports the collection month as October, not December. Marsh and Pawson (1993) recognise *Holothuria macroperona* as a species distinct from *H. (Thymiosycia) hartmeyeri* Erwe, 1913. However Rowe and Gates (1995) reported *H. macroperona* as a junior synonym of *H. (Thymiosycia) hartmeyeri*. They do not mention that paratype material of *H. macroperona* is in the WAM. Study of a growth series is needed to resolve the question of whether these species are the same or not.

Order MOLPADIIDA Haeckel, 1896**Family Caudinidae Heding, 1931****Genus *Caudina* Stimpson, 1853**

Caudina tetrapora H.L. Clark, 1914
(currently *Paracaudina tetrapora*
(H.L. Clark, 1914))

Caudina tetrapora H.L. Clark, 1914: 170, figure 1.

Material Examined

Holotype number WAM 5035 (1; wet) [new registration number: WAM Z 1890].

Locality: Cottesloe Beach [32°00'S, 115°45'E], Western Australia, 6 July 1912, W.B. Alexander.

Remarks

H.L. Clark (1914) reported the paratype number as 229, but this number is not an echinoderm in the WAM catalogue. The MCZ has a specimen labelled syntype (MCZ#933) (F.J. Collier, personal communication), but this should be regarded as a paratype (ICZN 1985 Recommendation 73D). We assume that the number 229 was given in error for a specimen of this species. Rowe and Gates (1995) report that the holotype and probable paratype are both held in the WAM, however a single specimen, labelled holotype on the original label is in the collection.

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