

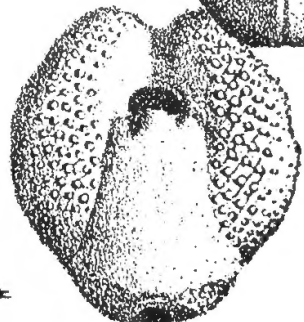
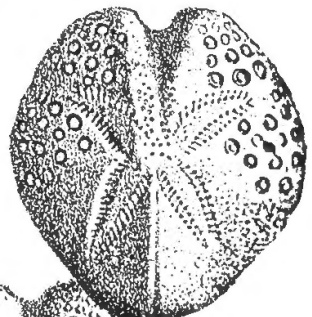
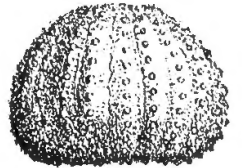
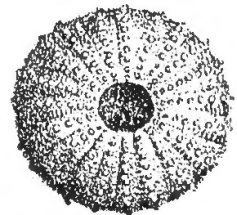
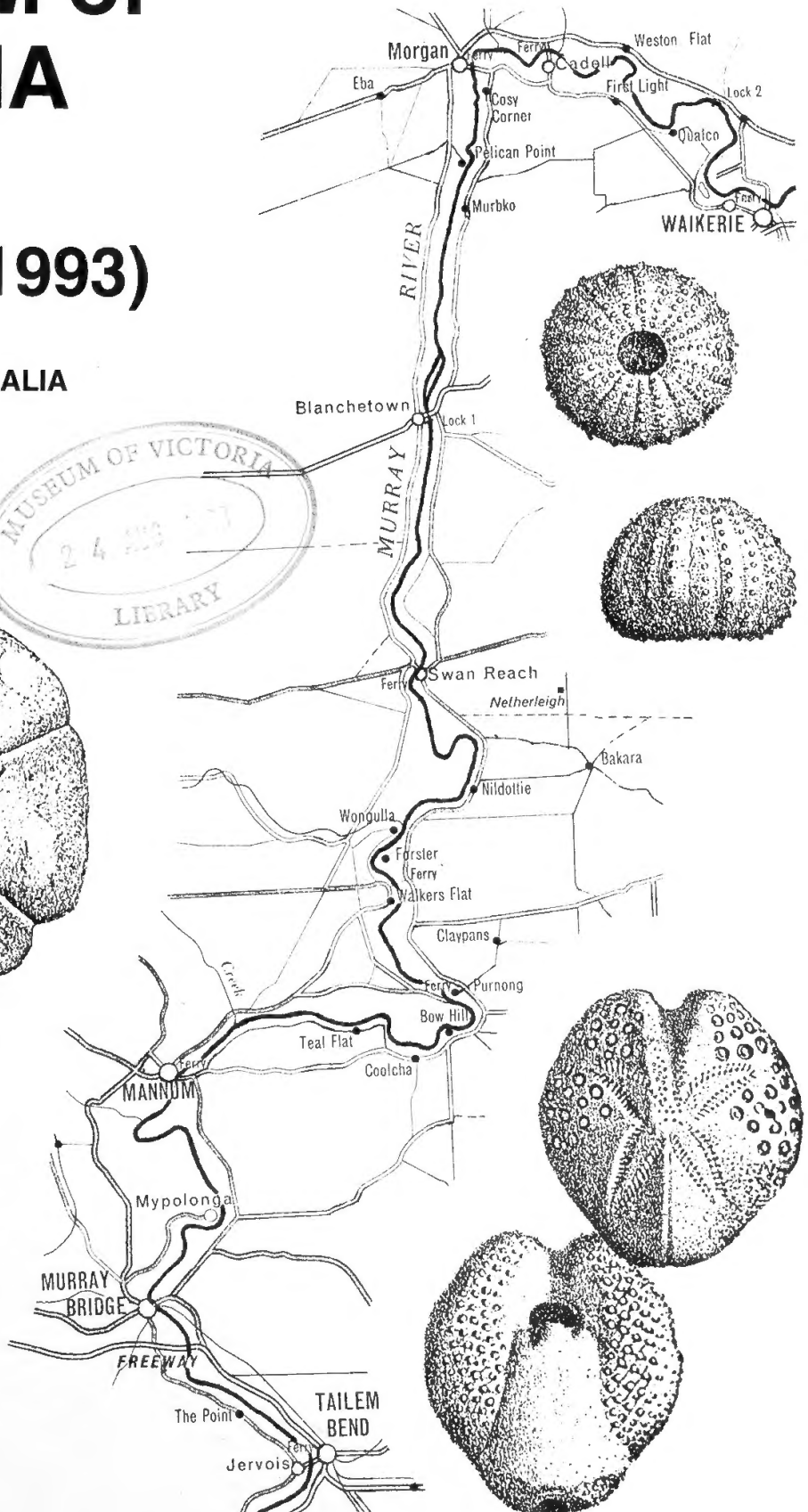
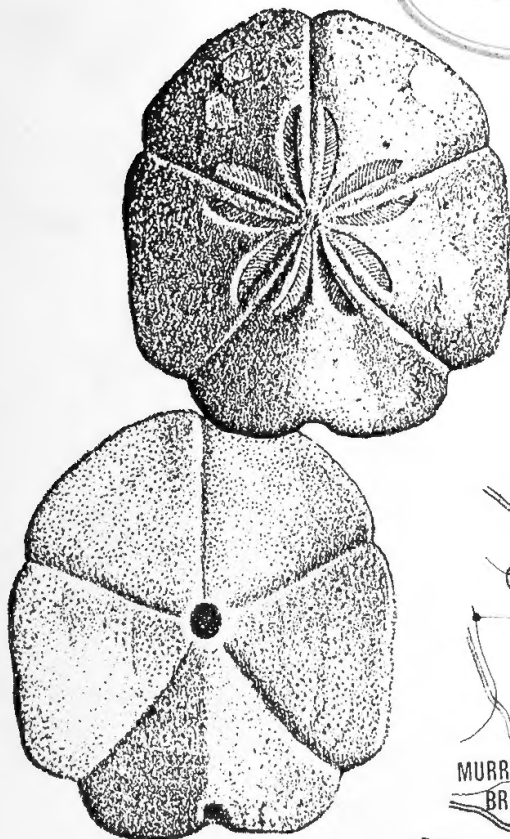
OCCASIONAL PAPERS

from the

MUSEUM of VICTORIA

Vol. 6 (1993)

MELBOURNE AUSTRALIA



MUSEUM OF VICTORIA



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OCCASIONAL PAPERS from the MUSEUM of VICTORIA

Vol. 6 (1993)

MELBOURNE AUSTRALIA



Director Graham C. Morris
Director (Natural Sciences) David Smith
Editor Gary C. B. Poore

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Front cover : Map of the Murray River from Waikerie to Tailem Bend, South Australia upon which are superimposed drawings, from Laube (1869), of the first three echinoids discovered in Australia during the voyage of exploration down the Murray River by Captain Charles Sturt during the years 1830 and 1831. The echinoids are : left, *Monostychia australis* Laube, 1869 [*Scutella* sp. Sturt, 1833]; top right, *Ortholophus woodsi* (Laube, 1869) [? *Echinus* sp. Sturt, 1833]; and bottom right, *Lovenia forbesii* (Tenison Woods, 1864) [*Spatangus Hoffmanni* Sturt (non Goldfuss), 1833].

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Occasional Papers from the Museum of Victoria

The Museum of Victoria was formed in 1983 by the merger of the National Museum of Victoria (established in 1854) and the Science Museum of Victoria (established in 1870). Among the Museum's objectives are scholarship and education in the fields of natural history, science and technology, and history of human society. The Museum of Victoria publishes two scientific serials to further these objectives, *Memoirs of the Museum of Victoria* (until 1983 *Memoirs of the National Museum of Victoria*) and *Occasional Papers from the Museum of Victoria*.

The *Memoirs* publishes papers on original research in the natural sciences pertinent to Victoria and/or the Museum's collections. All contributions are assessed by independent referees before publication.

The *Occasional Papers* are research documents of sufficient importance to be preserved but which are not appropriate for primary scientific publication. Papers are factual rather than interpretative studies, may be of special local interest, or may be longer than a normal scientific paper. Contributions will be refereed if appropriate.

Two copies of the manuscript with accompanying plates and figures should be submitted to the Scientific

Editor, Museum of Victoria, Swanston Street, Melbourne, Victoria 3000. Authors should consult a recent volume of the *Occasional Papers* to acquaint themselves with the format.

Manuscripts must be typed on A4 paper, double-spaced, on one side of the paper and with ample margins. Final manuscripts on floppy discs are encouraged. Tables, captions to text figures and plates must be attached to the manuscript as final pages. Underlining in the text should be restricted to generic and specific names. Measurements must be in the metric system (SI units).

References should be listed alphabetically at the end of the manuscript. Journal citations must be in full. References to books must give the year of publication, edition, name of publisher and city of publication. Titles of books and names of journals should be underlined.

Photographs must have clear definition and may be submitted as either glossy or flat prints at the actual size for reproduction. Line drawings for text figures should be in black ink on white card or drawing film. Maximum full page size is 177 mm wide by 220 mm, single column width is 86 mm. Clear lettering must be inserted. Original drawings up to twice final size are acceptable.

Catalogue of Recent Cnidaria type specimens in the Museum of Victoria

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Abstract. Stranks, T. N. (1993). Catalogue of Recent Cnidaria type specimens in the Museum of Victoria. *Occasional Papers from the Museum of Victoria* 6: 1–26.

Type specimens of 329 nominal species of Recent Cnidaria are held in the Museum of Victoria. Type designations, registration numbers, complete citations and localities are recorded for each species.

Introduction

Collections of Cnidaria are held in the Department of Invertebrate Zoology and Department of Invertebrate Palaeontology at the Museum of Victoria (formerly National Museum of Victoria) (NMV). The present paper lists primary type material of Recent Cnidaria, representing 329 nominal species, from the Department of Invertebrate Zoology collection. Preliminary details of type specimens of fossil Cnidaria have been given previously (Anon.[K.N. Bell], 1981), and a more comprehensive listing is being prepared by the Department of Invertebrate Palaeontology.

In the early and middle part of this century the Museum acquired the important hydroid collections of William Mountier Bale and Lt-Col. Richard E. Trebilcock, and the scleractinian collection of John Dennant. These workers also obtained through exchange or donation type material of taxa described by G.J. Allman, G. Busk, M. Coughtrey, J.E. Gray, F.W. Hilgendorf, F.W. Hutton, R. von Lendenfeld and J.E. Tenison-Woods.

Hydroids collected during the Royal Society of Victoria's Port Phillip Survey (c. 1886–1895) by J. Bracebridge Wilson were described in various publications by W.M. Bale and Sir W. Baldwin Spencer. Spencer's type material was acquired by the Museum in a donation from the University of Melbourne, Department of Zoology (MUZD) in May 1968.

Possible type specimens of several taxa established by G.H. Kirchenpauer were included as part of the O.W. Sonder Herbarium collection, purchased by the National Herbarium of Victoria, Melbourne. This material was in turn donated by the National Herbarium to the Museum.

From the late nineteenth century to the present, other workers deposited type material directly with the Department, or described new taxa from the Departmental collection. These authors include G.C. Bartlett, M. Blackburn, C.E. Cutress, J.E. Tenison-Woods, H. Utinomi, J. Verseveldt and J.E. Watson.

The present catalogue is intended as an aid to cnidarian systematists. It does not include any critical revision of species, or their current taxonomic status.

History

Rapid development of the Museum of Victoria's Recent Cnidaria holdings came with the acquisition of the Bale and Trebilcock hydroid collections. Bale and Trebilcock were two of the leading contemporary workers on the systematics of Australian hydroids, and both held major collections of Australian as well as overseas comparative material.

Smith and Watson (1969) detailed aspects of William Mountier

Bale's career as a hydroid researcher, and listed species described by him. Bale (1851–1940) described 126 new species in 13 publications. His collection of more than 1100 microslides was obtained by the Museum in a series of acquisitions in 1923, 1937, 1968 and 1969. An important component of the hydroid collection was the comparative material acquired by Bale. Material solicited for donation from the British Museum (Natural History) (BMNH) included several type specimens described by G.J. Allman from the HMS *Challenger* collection, others described by G. Busk from the HMS *Rattlesnake* collection, and another described by J.E. Gray from the HMS *Endeavour* collection. Bale also received other donations including type material described by M. Coughtrey and F.W. Hutton from the Otago Museum (Dunedin), and material described by R. von Lendenfeld from the Australian Museum (Sydney).

Lt-Col. Richard E. Trebilcock (1880–1976), a contemporary of Bale, worked as a solicitor in Geelong and later in Kerang, Victoria, and was a member of the Geelong Field Naturalists' Club. Trebilcock, either solely or in joint authorship with J.F. Mulder, described 43 new hydroid taxa in seven publications. From a series of donations in 1964, 1969, 1974 and 1975, the Museum acquired Trebilcock's collection of over 1400 microslides. The collection included comparative material of type specimens described by G.J. Allman from the HMS *Challenger* collection. After serving in France with the Australian Imperial Forces during World War I, Trebilcock worked for a period during 1919 at the British Museum (National History), London. He studied hydroid material collected and described from the *Challenger* expedition, and was allowed by A.K. Totton and R. Kirkpatrick of the BMNH to prepare microslide mounts and retain representative slides from many of Allman's (1883; 1888) type colonies (see details in Departmental archival correspondence). An unpublished and incomplete manuscript (c. 1921) titled "Notes on a few *Challenger* and other hydroids in the British Museum (Natural History)" was included in a donation of archival material from the Trebilcock collection. Also included in the collection was comparative material of type specimens described by Bale from the FIS *Endeavour* collections, including microslides prepared by Bale and donated to Trebilcock, as well as material from the type colonies (in spirit) in the Australian Museum, Sydney, sent on exchange to Trebilcock in 1915 by E.A. Briggs and mounted on microslides by Trebilcock himself.

The Bale and Trebilcock holdings also include, apart from the microslide collections, archival material comprising each author's own collection registers, published and unpublished manuscripts (text and figures) and extensive correspondence.

An important recent acquisition for the Museum was a small collection of possible types and other material of G.H.

Kirchenpauer (1808–1887). Kirchenpauer was a Hamburg Senator and later Burgermeister, and member of the Hamburg Museums-Kommission (see Panning, 1956). He had research interests with hydroids, bryozoans and algae from the Herbarium O.W. Sonder (1812–1881) (Hamburg). Some of Kirchenpauer's study material was among and attached to marine algae collected in various localities (particularly in southern Australia) by Baron F. von Mueller, Government Botanist of Victoria and founder of the National Herbarium of Victoria, and sent to the phycologist Sonder for study and identification. The collection returned to Melbourne in 1883 with the National Herbarium's purchase of the Sonder Herbarium (Ducker, 1990). In turn, the zoological component of the collection was donated in 1967 and 1982 by the National Herbarium to the Museum (see Departmental archival correspondence). There were approximately 30 lots of dried hydroid specimens in paper envelopes or pressed on paper with Kirchenpauer's identifications and personal labels. Work is in progress to confirm the provenance of many other lots from the Sonder Herbarium collection, apparently also labelled in Kirchenpauer's hand.

The Department's collection of Kirchenpauer material is significant considering that most of Kirchenpauer's type specimens were believed to have been held at the Zoologisches Museum in Hamburg, and subsequently to have been destroyed or lost during the Second World War. The status of several of Kirchenpauer's species, particularly those previously considered *nomina dubia* (for examples see Millard, 1975) and those with brief original descriptions, may now be reassessed. A catalogue of possible type and other material of Kirchenpauer in the Department collection is planned.

The Dennant collection was purchased by the Museum in 1911. In 1969 the Recent Scleractinia in the collection were transferred from the Department of Invertebrate Palaeontology to the Department of Invertebrate Zoology. John Dennant (1839–1907) worked as a school inspector and as a geologist in western Victoria, and was a member of the Royal Society of Victoria (Anon., 1907a, b). Dennant pursued a range of research interests including scleractinian taxonomy, describing 16 new species of recent corals in two publications. His collection of recent corals comprised approximately 140 lots of dry specimens, mostly dredged in Gulf St Vincent and Spencer Gulf, South Australia, by J.C. Verco from about 1890 to 1906 (Verco, 1935), or off Sydney, New South Wales, by C. Hedley and W.F. Petterd. Dennant's collection also included a type specimen described by J.E. Tenison-Woods.

Format

Information on types is presented in the following format:

Species, genus, author, year of publication: pagination, figure and plate numbers.

Type category: NMV registration number (number of specimens and preservation), previous registration numbers.

Locality; sampling gear; date collected; collector; station number.

Remarks.

Species remain in the genera proposed in the original descriptions. Genera are placed into families following the primary sources Hyman : (1940), Wells (1956) and Dunn (1982). Where a species is described in a genus not included in the above publications, it remains in the family to which it was assigned by its author. Species are arranged alphabetically within each family.

All original publications are listed in the Bibliography.

The list includes only primary type material (holotypes, paratypes, syntypes and previously designated lectotypes and neotypes). Type definitions are according to the International Code of Zoological Nomenclature (ICZN, 1985).

It should be remembered when consulting this listing that Cnidaria are sometimes composed from aggregations of single polyps organised into colonies (e.g. hydroid forms). Therefore

type designations often refer not to individual zooids, but instead to discrete colonies of polyps. This factor can complicate the isolation of type material considering that a particular type series might consist of a number of elements (e.g. a colony preserved dry or in formalin or ethanol, with a number of smaller pieces of the colony mounted on microslides) (see ICZN, 1985: Article 72(c)(ii)).

The above problem can be illustrated by an example from the Bale Collection. From the one or more hydroid colonies used as the basis for the description of the new species *Halicornaria furcata*, Bale appears to have prepared at least two microslides for his personal collection, and retained at least part of a dry colony in a paper envelope. At the same or at a later time at least two extra microslides seem to have been prepared from the same material and distributed as voucher specimens to R.E. Trebilcock and C.M. Maplestone. The microslides reappeared together in the Museum's collection through the acquisitions of the Bale Collection (which included a part of the Maplestone Collection) and the Trebilcock Collection. All available specimens have been examined and considered for type material.

Another illustration of the same problem was the practice of Bale and Trebilcock, for example, of contacting institutions or individuals to request reference material of particular hydroid species, and being forwarded parts of the type colonies (sometimes labelled as "schizotypes"). At one stage Trebilcock visited the BMNH to research the HMS *Challenger* hydroid collection and was allowed to retain a series of microslides, with portions of type colonies of species described by Allman (1883; 1888). This material is now held in the Museum collection, and much of it is deemed to be type or possible type material.

The fact that early naturalists and museum workers had a practice of obtaining parts of hydroid type colonies as vouchers has made tracking all type material difficult. It is reasonable to assume that there are microslides of parts of type colonies listed here that are still outstanding in other individual or institutional collections. It has not been feasible to trace this material.

For numerous taxa, the absence of designated types was a problem (particularly for many of Bale's and Trebilcock's species that were expected to be found in the Museum collection). Where no clearly labelled type specimens were found, the author's original description was consulted in a search for possible types that considered a particular specimen's provenance, labelling, collection locality and date. In many cases a series of specimens was potentially the basis for a particular new species description, and such specimens have been identified as possible types by inference. The provisions of the ICZN were followed when identifying type or possible type material. Where an original description was based on a unique individual or colony and no labelled holotype was located, possible holotype material has been identified when available. Where it is unclear how many individuals or colonies were examined, or where more than one individual or colony was studied for an original description (and no holotype was designated), and no labelled syntypes were located, possible syntype material has been identified when available. New lectotype designations have not been made, but the identification of possible type material in the present paper would facilitate this process.

In the case of the Bale Collection, very few of the microslides or dry specimens in envelopes bear type notations. However, some microslides not explicitly labelled as types bear catalogue numbers corresponding to entries in Bale's personal register, and a number of these entries carry "type" or "co-type" annotations. These register entries have been invaluable in determining probable members of the type series, but unfortunately Bale did not make such annotations in the register for all of his species (see Smith and Watson, 1969).

New varieties of species designated by alphabetical letters (e.g. *Plumularia setaceoides* var. (a) Mulder and Trebilcock, 1911) are not included in the present list. Species names in manuscript are also omitted.

The present registration numbers (with "F" prefix) in the

Department of Invertebrate Zoology are given. Previous museum registration numbers are also listed. Specimens are either mounted on microslides, preserved in 5% formalin or 70% ethanol (EtOH), or preserved dry in paper envelopes or pressed on paper.

Type localities are as published in the original description, but may include extra information from the specimen labels. Where station numbers were given (e.g. HMS *Challenger* dredging stations), supplementary collection details are included. Higher geographic categories (e.g. ocean, country, state) are included for a consistent format. Where a locality place name is no longer in use, the current place name is provided (e.g. Port Denison is now known as Bowen, Queensland). All non-metric measurements have been given metric equivalents.

In the Bale Collection most microslides are labelled with a date, originally thought to be the date of collection. It now appears instead that the labelling represents the date the slide was mounted. Several microslides bear catalogue numbers that correspond in Bale's register to slides that Bale intended to form the type series, yet the date inscribed on these slides post-dates the publication date of the species. These are presumably slides of material from the type colony that Bale mounted, labelled and dated later, specifically intending them to be members of the type series. They are considered in the present list as probable type specimens.

The Bale, Trebilcock and Dennant collections were acquired by the Museum in instalments over periods of many years, and there was the reasonable possibility of misplacement or loss of specimens. Type or possible type materials of 16 taxa are currently considered missing and these are listed in Appendix 1.

Class Hydrozoa
Order Hydroida
Suborder Anthomedusae

BOUGAINVILLIIDAE

- australis*, *Bimeria* Blackburn, 1937: 177, text figs 10–12.
Holotype: F57875 (1 microslide), previous no. 70660.
Victoria, Western Port, Phillip Island, Cowes; on *Pennaria wilsoni*; Nov 1935.

CLAVIDAE

- operculata*, *Merona* Watson, 1978: 309, text figs 3a–c.
Holotype: F42807 (1 microslide), previous no. G2807.
Victoria, Western Port, Crawfish Rock; on *Didemnum patulum*; 12 m; 30 Jul 1967; J.E. Watson.

CORYNIDAE

- minima*, *Sarsia* Lendenfeld, 1884d: 584, pl. 21, figs 34, 35.
Syntype: F59279 (1 microslide).
New South Wales, Port Jackson; laminarian zone, on buoys and submerged ropes; on *Obelia geniculata*; R. von Lendenfeld.
Remarks: *ex* Bale Coll.

EUDENDRIIDAE

- aylingae*, *Eudendrium* Watson, 1985: 208, text figs 75–79.
Holotype: F50529 (formalin).
Queensland, Great Detached Reef; 11°58'S, 143°58'E; SCUBA; 22 May 1979; A.L. Ayling.
- balei*, *Eudendrium* Watson, 1985: 205, text figs 68–74.
Holotype: F50521 (formalin).
Victoria, Western Port, Crawfish Rock; 38°20'S, 145°15'E; 10 m; SCUBA; 2 Nov 1971.
Paratype: F50522 (formalin).
Victoria, Western Port, Crawfish Rock; 10 m; SCUBA; 13 Sep 1968; J.E. Watson.
Paratype: F50530 (formalin).
Victoria, Western Port, Crawfish Rock; SCUBA; 10 Oct 1981;

J.E. Watson.

Paratype: F50523 (formalin).

Victoria, near Seaspray; 38°30'S, 147°10'E; on reef; 15 m; SCUBA; 27 Oct 1981; J.E. Watson.

Paratype: F50720 (EtOH).

Bass Strait, Victoria, 28 km SSW of Marlo; 37°59.0'S, 148°27.0'E; muddy sand and fine shell; 51 m; trawled; 30 Jul 1983; NMV Bass Strait Survey; FV *Silver Gull*; M.F. Gomon and R.S. Wilson; Stn BSS 207.

corrugatum, *Eudendrium* Watson, 1985: 191, text figs 24–28.

Holotype: F50506 (formalin).

Queensland, North Stradbroke Island, NW of Point Lookout, Middle Reef; 27°20'S, 153°35'E; on reef; 100 ft [31 m]; SCUBA; 17 Jun 1981; R.C. Willan.

merulum, *Eudendrium* Watson, 1985: 200, text figs 53–58.

Holotype: F50514 (EtOH).

Paratypes: F50515 (EtOH); F50516 (EtOH); F50517 (EtOH).
Bass Strait, Victoria, 0.5 km S of Clonmel Island; 38°45'S, 146°43'E; from wreck of steamer *Blackbird*; 6 m; SCUBA; 16 Mar 1983; J.E. Watson.

minutum, *Eudendrium* Watson, 1985: 183, text figs 1–4.

Holotype: F50520 (EtOH).

Victoria, Port Phillip Heads; 38°18'S, 144°40'E; channel wall, on dead stem of *Mopsea encrinula*; 12 m; SCUBA; 13 Dec 1982; J.E. Watson.

nambuccense, *Eudendrium* Watson, 1985: 185, text figs 9–16.

Holotype: F50508 (formalin).

New South Wales, Nambucca Heads; 30°40'S, 153°00'E; on *Trichomya hirsuta*; 3 m; SCUBA; 5 Jan 1972; J.E. Watson.

pusillum, *Eudendrium* Lendenfeld, 1884a: 352.

Syntype: F59298 (1 microslide).

New South Wales, Port Jackson; on ascidians and other submerged bodies just below low water mark; R. von Lendenfeld.
Remarks: *ex* Bale Coll.

HALOCORDYLIDAE

australis, *Halocordyle* Bale, 1894: 94.

Holotype (probable): F58747 (1 microslide).

Victoria, Port Phillip Bay, "Limeburners Channel in Capel Sound from near the White Buoy off the Sisters to about half-a-mile beyond Canterbury Jetty"; 6–10 fm [11–18 m]; dredged; Jan 1889; J.B. Wilson; Stn 10.

Remarks: *ex* Bale Coll. Also labelled "JBW 762," probably referring to a systematic listing.

HYDRACTINIIDAE

arenosa, *Sacculina* Bale, 1919: 333.

Syntypes (probable): F58728 (6 microslides).

Remarks: *ex* Bale Coll. Two of the slides are listed in Bale's Register, nos. 3 and 4, as "co-types." Another slide is labelled "JBW 744," probably referring to a systematic listing.

Syntype (probable): F58729 (1 microslide).

Remarks: *ex* Trebilcock Coll. Listed in Trebilcock's Register, no. 300, as "type." Also labelled "JBW 744," probably referring to a systematic listing.

Victoria, Port Phillip Bay; J.B. Wilson.

betkensis, *Stylactis* Watson, 1978: 312, text figs 5a–h.

Holotype: F42808 (2 microslides), previous no. G2808; F42809 (formalin), previous no. G2809.

Paratype: F42810 (formalin), previous no. G2810.

Victoria, Mallacoota, Betka River; in estuarine section, just subtidal in *Zostera muelleri* beds; on *Parcanassa burchardi*; 18 Feb 1973; R.J. Plant.

scandens, *Saaba* Trebilcock, 1928: 2, pl. 1, figs 1, 1a.

Syntypes (probable).

New Zealand, Island Bay.

Remarks: type specimens not found (see Appendix 1).

PENNARIIDAE

adamsia, *Pennaria* Lendenfeld, 1884d: 595, pl. 25, figs 45–48, pl. 26, fig. 49.

Syntype: F59281 (1 microslide).

New South Wales, Port Jackson; on bottom of yacht; Mar 1884; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

australis, *Pennaria* Bale, 1884: 45.

Syntype (probable): F58790 (1 microslide).

New South Wales, Clark Island; W.A. Haswell.

Remarks: *ex* Bale Coll.

rosea, *Pennaria* Lendenfeld, 1884d: 594, pl. 24, figs 40–42.

Syntype: F59280 (1 microslide).

New South Wales, Port Jackson; laminarian zone; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

TUBULARIIDAE

coccinea, *Ralpharia* Watson, 1984: 9, text figs 10–18.

Holotype: F42602 (part EtOH, part formalin), previous no. G2602.

Victoria, Western Port, Crawfish Rock; from reef; on *Parerythropodium membranaceum*; 3 m; 12 Sep 1982; J.E. Watson.

cryptus, *Hybocodon* Watson, 1984: 7, text figs 1–9.

Holotype: F42601 (part EtOH, part formalin), previous no. G2601.

Victoria, Port Phillip Bay, 3 km off Portsea; on reef; 15 m; 14 Jul 1982; J.E. Watson.

exsonia, *Tubularia* Watson, 1978: 303, text figs 1a, b.

Holotype: F42800 (2 microslides), previous no. G2800; F42801 (formalin), previous no. G2801.

Victoria, eastern Bass Strait, Marlin Oil Platform; on sponge; 75 m; 2 Sep 1975; Natural Systems Research Pty. Ltd.

gracilis, *Tubularia* Lendenfeld, 1884d: 597, pl. 27, figs 51, 52.

Syntype: F59283 (1 microslide).

New South Wales, Port Jackson; laminarian zone; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

magnifica, *Ralpharia* Watson, 1980: 54, text figs 1–24.

Holotype: F43224 (formalin), previous no. G3244.

Paratypes: F43225 (formalin), previous no. G3225;

F43226 (formalin), previous no. G3226.

Victoria, Western Port, Tortoise Head, on *Parerythropodium membranaceum*; 2 m; 3 Jan 1979; J.E. Watson.

parkeri, *Calycella* Hilgendorf, 1898: 205, pl. 17, figs 3, 3a–d, pl. 18.

Syntype: F59297 (1 microslide).

New Zealand, Dunedin Harbour; on wharf piles; F.W. Hilgendorf.

Remarks: *ex* Bale Coll.

ralphii, *Tubularia* Bale, 1884: 42.

Neotype: F43227 (formalin), previous no. G3227.

Victoria, Hobsons Bay, Yarra River entrance beacon; on *Mytilus edulis* and *Styela clava*; 1–2 m; 3 Apr 1977; J.E. Watson.

Remarks: neotype designated by Watson (1980: 60).

spongicola, *Tubularia* Lendenfeld, 1884d: 597, pl. 26, fig. 50.

Syntype: F59282 (1 microslide).

New South Wales, Port Jackson; on horny sponges; 10 m; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

ZANCLEIDAE

marlina, *Rosalinda* Watson, 1978: 307, text figs 2e–j.

Holotype: F42804 (1 microslide), previous no. G2804; F42805 (formalin), previous no. G2805.

Victoria, eastern Bass Strait, Marlin Oil Platform; on ascidian; 36 m; Jun 1974; Natural Systems Research Pty. Ltd.

Paratype: F42806 (1 microslide), previous no. G2806.

Victoria, eastern Bass Strait, Marlin Oil Platform; on *Balanus trigonus*; 10 m; 2 Sep 1974; Natural Systems Research Pty. Ltd.

Suborder Leptomedusae

CAMPANULARIIDAE

ambiplica, *Campanularia* Mulder and Trebilcock, 1914a: 11, pl. 2, figs 3, 4.

Syntype: F57981 (1 microslide).

Victoria, Thompsons Creek [near Torquay] [as “Bream Creek”]; on *Ballia callitricha*.

Remarks: *ex* Trebilcock Coll.

angulata, *Orthopyxis* Bale, 1914c: 82, pl. 11, fig. 4, pl. 12, fig. 4.

Syntypes (probable): F59343 (2 microslides).

Victoria, Port Phillip Bay; J.B. Wilson.

Remarks: *ex* Bale Coll. The slides are listed in Bale’s Register, nos. 8 and 9, as “co-types.”

angulosa, *Obelia* Bale, 1888: 752, pl. 12, fig. 3.

Syntypes (probable): F58756 (2 microslides).

New South Wales, Parramatta River.

Remarks: *ex* Bale Coll. The slides are listed in Bale’s Register, nos. 17 and 18, as “co-types.”

australis, *Obelia* Lendenfeld, 1884d: 604.

Syntype: F59284 (1 microslide).

New Zealand, Sumner [near Lyttelton]; laminarian zone; R. von Lendenfeld.

Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 16, as “type.”

bilabiata, *Campanularia* Coughtrey, 1875: 291, pl. 20, figs 46–49.

Syntype (possible): F59295 (1 microslide).

New Zealand, Timaru; on algae; 1–3 fm [2–5 m]; M. Coughtrey.

Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum.

campanularia, *Eucopeella* Lendenfeld, 1883: 497, pls 27–32.

Syntype: F59400 (1 microslide).

Australia, south coast [as “Südrande des australischen Kontinents”]; on laminarians below the low water mark; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

costata, *Campanularia* Bale, 1884: 56, pl. 1, fig. 3.

Syntype (probable): F58793 (1 microslide).

Northern Territory, Port Darwin; on *Idia pristis*; T.D. Smeaton.

Remarks: *ex* Bale Coll.

coughtreyi, *Obelia* Bale, 1924: 230, text fig. 2.

Syntypes (probable): F58217 (2 microslides).

New Zealand, Taylors Mistake [near Sumner]; C. Chilton.

Remarks: *ex* Bale Coll. One of the slides is listed in Bale’s Register, no. 21, as “co-type.”

delicata, *Orthopyxis* Trebilcock, 1928: 3, pl. 2, figs 1, 1a–f.

Syntype: F57888 (1 microslide).

New Zealand, Dunedin, St Clair; on algae and polyzoa; 3 May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

formosa, *Orthopyxis* Trebilcock, 1928: 2, pl. 1, figs 2, 2a–e.

- Syntype*: F57887 (1 microslide).
New Zealand, Auckland Harbour entrance; on floating seaweed; Apr–May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll.
- marginata*, *Campanularia*** Bale, 1884: 54, pl. 1, fig. 2.
Syntype (probable): F58791 (1 microslide).
Victoria, Queenscliff.
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 27, as "from type specimen."
Syntype (probable): F58792 (1 microslide).
Victoria, Portland; C.M. Maplestone.
Remarks: *ex* Bale Coll.
- nodosa*, *Obelia*** Bale, 1924: 230, text fig. 1.
Syntypes (probable): F58216 (3 microslides).
New Zealand, Auckland, Waitakerei; C. Chilton.
Remarks: *ex* Bale Coll. One of the slides is listed in Bale's Register, no. 22, as "co-type."
- pearsonensis*, *Clytia*** Watson, 1973: 159, text fig. 2.
Holotype: F41914 (1 microslide), previous no. G1914.
South Australia, Pearson Island; rough watered side of island; on *Thecocarpus divaricatus cystifera*; 22 m; SCUBA; 7 Jan 1969; J.E. Watson; Stn A.
Paratype: F41915 (1 microslide), previous no. G1915.
South Australia, Pearson Island; rough watered side of island; on bryozoa; 34 m; SCUBA; 7 Jan 1969; J.E. Watson; Stn A.
- platycarpa*, *Orthopyxis*** Bale, 1914c: 79, pl. 11, fig. 3, pl. 12, fig. 3.
Syntype (probable): F58737 (1 microslide).
Victoria, "in or near Port Phillip [Bay]."
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 7, as "co-type."
- pulchratheca*, *Campanularia*** Mulder and Trebilcock, 1914a: 11, pl. 2, figs 1, 2.
Syntypes: F57982 (2 microslides).
Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].
Remarks: *ex* Trebilcock Coll.
- pumila*, *Campanularia*** Bale, 1914a: 4, pl. 1, figs 6–8.
Syntype (probable).
Great Australian Bight; on *Synthecium subventricosum*; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
Remarks: type specimen not found (see Appendix 1).
- retroflexa*, *Campanularia*** Allman, 1888: 21, pl. 11, figs 1, 1a.
Holotype (possible): F60327 (2 microslides).
Pacific Ocean, Hawaii, Honolulu; 20–40 fm [37–73 m]; dredged; Jul–Dec 1875; HMS *Challenger*.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered a possible holotype by inference.
- rufa*, *Campanularia*** Bale, 1884: 54, pl. 1, fig. 1.
Holotype (probable): F52216 (1 microslide).
Queensland, Holbourne Islands [as "Holborn Island"]; 20 fm [37 m]; W.A. Haswell.
Remarks: *ex* Bale Coll.
- serrulata*, *Campanularia*** Bale, 1888: 757, pl. 12, fig. 4.
Syntype (probable): F58758 (1 microslide).
New South Wales, Port Jackson; on *Tubularia* sp.
Remarks: *ex* Bale Coll.
- spinulosa*, *Campanularia*** Bale, 1888: 756, pl. 12, figs 5–7.
Syntype (probable): F58757 (1 microslide).
New South Wales, Port Jackson; on *Tubularia* sp.
Remarks: *ex* Bale Coll. This species is listed in the plate legend and on the slide label as *C. bispinosa*, probably an earlier manuscript name.
- stolonifera*, *Clytia*** Blackburn, 1938: 325, text figs 9, 10.
Holotype: F57880 (1 microslide), previous no. 70666.
South Australia, Spencer Gulf, Reevesby Island; on *Posidonia* sp.; 4 fm [7 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.
- tridentata*, *Campanularia*** Bale, 1894: 98, pl. 3, fig. 3.
Syntype (probable): F58748 (1 microslide).
Victoria, Port Phillip Bay; "bounded on the E, by a line from the W Quarantine boundary flagstaff to the Popes Eye Buoy. On the N, line from Popes Eye Buoy to Point Lonsdale. On the W, line from Point Nepean to the channel marks on the shore in Lonsdale Bight"; 8–21 fm [15–38 m]; dredged; Jan 1888; J.B. Wilson; Stn 1.
Remarks: *ex* Bale Coll. Also labelled "JBW 761," probably referring to a systematic listing.
- undulata*, *Eucopeella*** Mulder and Trebilcock, 1914a: 10, pl. 2, figs 5, 5a, 6, 7.
Syntype: F57974 (1 microslide).
Victoria, Barwon Heads.
Syntype: F59346 (EtOH).
Victoria, Barwon Heads; on *Oymodocea zosterifolia*; 17 Feb 1913, R.E. Trebilcock.
Syntypes: F57973 (2 microslides).
Victoria, Torquay; Jan 1914.
Remarks: *ex* Trebilcock Coll.
- wilsoni*, *Orthopyxis*** Bale, 1914c: 78, pl. 11, fig. 5, pl. 12, fig. 5.
Syntype (probable): F59342 (1 microslide).
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 5, as "co-type."
Syntypes (probable): F58736 (2 microslides).
Remarks: *ex* Trebilcock Coll. Also labelled "JBW 743a," probably referring to a systematic listing.
Victoria, Port Phillip Bay; J.B. Wilson.

CAMPANULINIDAE

- humilis*, *Campanulina*** Bale, 1924: 235, text fig. 5.
Holotype (probable).
"Hull of *Terra Nova*"; D.G. Lillie.
Remarks: type specimen not found (see Appendix 1).

CLATHROZONIDAE

- wilsoni*, *Clathrozoön*** Spencer, 1891: 123, pls 17–20.
Syntypes (probable): F58416 (1 microslide); F58417 (1 microslide).
Victoria, Bass Strait, within 5 miles [8 km] of Port Phillip Heads; 20–22 fm [37–40 m]; dredged; J.B. Wilson.
Remarks: the slides are labelled (apparently in Spencer's hand) "*Clathrozoön* l.s." and "*Clathrozoön* t.s." respectively, and probably comprise part of the material that the species description was based on. No spirit or dry type colonies of *C. wilsoni* have been located in the collections. A specimen in EtOH (F60367) purported to be the paratype of *C. wilsoni* (part of which was donated to and examined by Hirohito (1971)) is not the type specimen; it was collected in 1893 (not 1873) at Port Phillip, Victoria by J.B. Wilson, and identified by W.B. Spencer.
Syntype (possible): F58414 (1 microslide).
Victoria, near Port Phillip Heads; J.B. Wilson.
Remarks: *ex* Bale Coll. Also labelled "JBW 748," probably referring to a systematic listing. Considered a possible syntype by inference.
Syntype (possible): F58415 (1 microslide).
Victoria, near Port Phillip Heads; J.B. Wilson.
Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 281, as "from Bale." Also labelled "JBW 748," probably referring to a systematic listing. Considered a possible syntype by inference.

GRAMMARIDAE

insignis, *Grammaria* Allman, 1888: 49, pl. 23, figs 3, 3a, b.

Syntype: F58211 (1 microslide).

Indian Ocean, off Marion Island; 46°43.0'S, 38°04.5'E; volcanic sand; 50–75 fm [92–137 m]; dredged; 27 Dec 1873; HMS *Challenger*; Stn 145.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 212, as "from type."

stentor, *Grammaria* Allman, 1888: 48, pl. 23, figs 1, 1a.

Syntype: F59311 (1 microslide).

Indian Ocean, Kerguelen Island, Royal Sound; 49°28.0'S, 70°13.0'E; volcanic mud; 28–60 fm [51–110 m]; dredged; 20 Jan 1874; HMS *Challenger*; Stn 149D.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 213, as "from type."

HALECIIDAE

australis, *Ophiodes* Bale, 1919: 336, pl. 16, fig. 1.

Syntype (probable): F58731 (1 microslide).

Victoria, Port Phillip Heads; J.B. Wilson.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 42, as "co-type."

Syntypes (probable): F58732 (2 microslides).

Victoria, Port Phillip Heads; 1885; J.B. Wilson.

Remarks: *ex* Bale Coll. One of the slides is listed in Bale's Register, no. 43, as "co-type."

Syntype (probable): F58733 (1 microslide).

Victoria, Port Phillip Heads, "Limeburners Channel in Capel Sound from near the White Buoy off the Sisters to about half-a-mile beyond Canterbury Jetty"; 6–10 fm [11–18 m]; dredged; Jan 1888; J.B. Wilson; Stn 10.

Remarks: *ex* Bale Coll. Also labelled "JBW 760," probably referring to a systematic listing.

Syntype (probable): F58730 (1 microslide).

New South Wales, Port Jackson, Green Point.

Remarks: *ex* Bale Coll.

blackburni, *Ophiodissa* Watson, 1973: 166, text figs 10–12.

Holotype: F41927 (1 microslide), previous no. G1927; F42092 (formalin), previous no. G2092.

South Australia, Pearson Island; sheltered side of island; on *Herdmania momus*; 27 m; SCUBA; 9 Jan 1969; J.E. Watson.

Paratype: F41928 (1 microslide), previous no. G1928;

F42093 (formalin), previous no. G2093.

South Australia, Pearson Island; sheltered side of island; on vertical face, bryozoa; 24–27 m; SCUBA; 9 Jan 1969; J.E. Watson; Stn D.

Paratype: F41929 (1 microslide), previous no. G1929.

South Australia, Pearson Island; sheltered side of island; on *Synthecium* sp.; 24 m; SCUBA; 9 Jan 1969; J.E. Watson; Stn D.

bruniensis, *Halecium* Watson, 1975: 161, text figs 7–15.

Holotype: F42494 (1 microslide), previous no. G2494;

F42495 (formalin), previous no. G2495.

Tasmania, Penguin Island [E of Bruny Island]; on sponge and bryozoa in crevice; 10–22 m; SCUBA; 11 Feb 1972; J.E. Watson.

buchananae, *Halecium* Blackburn, 1937: 174, text figs 4, 5.

Holotype: F57873 (1 microslide), previous no. 70658.

Paratype: F57874 (1 microslide), previous no. 70659.

Victoria, Western Port, Balnarring; washed up on algae; 14 Jun 1936.

corrugatissimum, *Halecium* Trebilcock, 1928: 7, pl. 3, figs 1, 1a–f.

Syntype: F57890 (1 microslide).

New Zealand, Dunedin, St Clair; May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

diadala, *Scoresbia* Watson, 1969: 112, text figs 1–7, pl. 1.

Holotype: F41490 (1 microslide), previous no. G1490.

Paratypes: F41491 (1 microslide), previous no. G1491;

F41492 (1 microslide), previous no. G1492;

F41493 (1 microslide), previous no. G1493;

F41494 (1 microslide), previous no. G1494.

South Australia, Gulf St Vincent, 3 km off Semaphore; on *Zonaria crenata*; 7 m; 28 Dec 1968; J.E. Watson.

Paratypes: F41495 (1 microslide), previous no. G1495;

F41496 (1 microslide), previous no. G1496.

South Australia, Encounter Bay, West Island; on *Zonaria crenata*; 25 m; 29 Aug 1968; J.E. Watson.

dichotomum, *Halecium* Allman, 1888: 13, pl. 6.

Syntype: F58205 (1 microslide).

South Africa, Cape of Good Hope, Simons Bay; 10–20 fm [18–37 m]; Oct–Dec 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 138, and labelled "from type."

dichotomus, *Diplocyathus* Allman, 1888: 17, pl. 8.

Syntypes: F58206 (2 microslides).

Torres Strait, Queensland, Cape York, off Somerset; 8–12 fm [15–22 m]; dredged; Aug–Sep 1874; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 137 and 137a, and labelled "from type." Trebilcock reclassified the slides as *Ophiodissa dichotoma*.

expansum, *Halecium* Trebilcock, 1928: 7, pl. 3, figs 2, 2a–c, pl. 4, figs 2, 2a, b.

Syntype: F57891 (1 microslide).

New Zealand, Dunedin, St Clair; on algae in rock pools; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

flexile, *Halecium* Allman, 1888: 11, pl. 5, figs 2, 2a.

Syntype: F58204 (1 microslide).

Indian Ocean, off Marion Island; 46°43.0'S, 38°04.5'E; volcanic sand; 50 fm [92 m]; dredged; 27 Dec 1873; HMS *Challenger*; Stn 145.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 139, and labelled "from type."

gracile, *Halecium* Bale, 1888: 759, pl. 14, figs 1–3.

Syntypes (probable): F58760 (2 microslides).

New South Wales, Port Stephens; on *Aglaophenia* sp.

Remarks: *ex* Bale Coll. The slides are listed in Bale's Register, nos. 40 and 41, as "co-types."

lenticulare, *Halecium* Trebilcock, 1928: 6, pl. 3, figs 3, 3a–d, pl. 4, figs 1, 1a, b.

Holotype: F57889 (1 microslide).

Holotype (possible): F57938 (EtOH).

New Zealand, Bluff; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock. F57938 may be the remainder of the holotype colony, and is included here as possible type material.

Paratypes (possible): F57942 (2 microslides).

New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. These slides may be part of the material examined for the original description, and are listed here as possible paratypes.

luteum, *Halecium* Watson, 1975: 163, text figs 16–18.

Holotype: F42496 (1 microslide), previous no. G2496;

F42497 (formalin), previous no. G2497.

Paratype: F42498 (1 microslide), previous no. G2498.

Tasmania, Penguin Island [E of Bruny Island]; on sponge and rock in cavern; 15 m; SCUBA; 20 Feb 1972; J.E. Watson.

parvulum, *Halecium* Bale, 1888: 760, pl. 14, figs 4, 5.

Syntype (probable): F58761 (1 microslide).

New South Wales, Bondi Bay; on sponge.

Remarks: *ex* Bale Coll.

robustum*, *Halecium Allman, 1888: 10, pl. 4.

Syntypes: F58202 (2 microslides).

Indian Ocean, Kerguelen Island, off Cumberland Bay; 48°43'S, 69°15'E; volcanic mud; 105 fm [192 m]; dredged; 29 Jan 1874; HMS *Challenger*; Stn 149J.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 141 and 141a, and labelled "from type." Trebilcock reidentified and labelled the slides as *Opiodissa arborea*.

telesopicum*, *Halecium Allman, 1888: 10, pl. 5, figs 1, 1a.

Syntype: F58203 (1 microslide).

New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 30–35 fm [55–64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 140, and labelled "from type."

LAFOEIDAE

angulata*, *Cryptolaria Bale, 1914b: 166, pl. 35, fig. 1.

Syntypes (probable): F58335 (6 microslides).

Great Australian Bight; 100 fm [183 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two of the slides are listed in Bale's Register, nos. 30 and 31, as "co-types." Another slide is listed in Trebilcock's Register, no. 292, as "type."

annulata*, *Reticularia Watson, 1973: 164, text figs 5, 6.

Holotype: F41923 (1 microslide), previous no. G1923; F42091 (formalin), previous no. G2091.

South Australia, Pearson Island, sheltered side of island; on small calcareous bryozoa; 17 m; SCUBA; 9 Jan 1969; S.A. Shepherd; Stn D.

crassicaulis*, *Cryptolaria Allman, 1888: 41, pl. 19, figs 3, 3a.

Syntypes: F58209 (2 microslides).

Atlantic Ocean, off Ascension Island; 7°54.33'N, 14°28.33'W; volcanic sand; 420 fm [769 m]; dredged; 3 Apr 1876; HMS *Challenger*; Stn 344.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, no. 210, as "part of type."

cyathifera*, *Lictorella Allman, 1888: 36, pl. 11, figs 3, 3a.

Syntype: F58207 (1 microslide).

Pacific Ocean, off New Hebrides; 16°45'S, 168°07'E; volcanic sand; 63–130 fm [115–238 m]; 18 Aug 1874; HMS *Challenger*; Stn 177.

Remarks: *ex* Trebilcock Coll., *ex* BMNH.

gracilis*, *Cryptolaria Allman, 1888: 42, pl. 20, figs 2, 2a.

Syntypes: F58210 (2 microslides).

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 211 and 211a, as "from type."

Syntypes: F59310 (2 microslides).

Remarks: *ex* Bale Coll., *ex* BMNH. The slides are labelled as "schizotypes."

Pacific Ocean, near New Zealand; 37°34'S, 179°22'E; blue mud; 700 fm [1281 m]; trawled; 10 Jul 1874; HMS *Challenger*; Stn 169.

pectinata*, *Perisiphonia Allman, 1888: 45, pl. 21, figs 2, 2a, b.

Syntype (possible): F60329 (1 microslide).

Pacific Ocean, off New Zealand; 37°34'S, 179°22'E; blue mud; 700 fm [1281 m]; trawled; 10 Jul 1874; HMS *Challenger*; Stn 169.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 214. Trebilcock reclassified and labelled the slide as *Zygophylax pectinata*. Considered a possible syntype by inference.

pulchella*, *Cryptolaria Allman, 1888: 40, pl. 19, figs 2, 2a.

Syntypes: F58208 (3 microslides).

Pacific Ocean, Hawaii, Honolulu; 20–40 fm [37–73 m]; dredged; Jul–Dec 1875; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 209, 209a, b, as "part of type."

quadriseriata*, *Perisiphonia Trebilcock, 1928: 4, pl. 2, figs 2, 2a–d.

Holotype (possible): F52217 (2 microslides).

New Zealand, Wellington, Island Bay; washed ashore; 24 Apr 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. The slides are not labelled as types, but are considered as possibly part of the holotype by inference.

scandens*, *Lafoea Bale, 1888: 758, pl. 13, figs 16–19.

Syntypes (probable): F58759 (2 microslides).

New South Wales, Port Stephens; mostly on *Sertularella divaricata subdichotoma*.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 36, as "co-type."

LINEOLARIIDAE

flexuosa*, *Lineolaria Bale, 1884: 62, pl. 1, figs 7–9.

Syntypes (probable): F58794 (1 microslide);

F58795 (1 microslide);

F60229 (dry).

Victoria, Port Phillip Bay, Williamstown; on algae.

Remarks: *ex* Bale Coll.

inarmata*, *Lineolaria Blackburn, 1938: 321, text figs 4–8.

Holotype: F57878 (1 microslide), previous no. 70664.

Paratype: F57879 (1 microslide), previous no. 70665.

South Australia, Spencer Gulf, Reevesby Island; on *Posidinia* sp.; 2–2.5 fm [4–5 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.

LOVENELLIDAE

briggsi*, *Lovenella Mulder and Trebilcock, 1915: 57, pl. 9, figs 3, 3a–f.

Syntypes (possible): F57997 (4 microslides).

Victoria, Corio Bay.

Syntypes (possible): F57998 (3 microslides).

Victoria, Torquay; 18 Feb 1915.

Remarks: *ex* Trebilcock Coll. The slides are not labelled as types, but are considered possible syntypes by inference.

PLUMULARIIDAE

abietina*, *Plumularia Allman, 1883: 21, pl. 3.

Holotype (possible): F60247 (1 microslide).

Indian Ocean, off Prince Edward Island; 150 fm [275 m]; dredged; Dec 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered possibly part of the holotype by inference.

acanthocarpa*, *Aglaophenia Allman, 1876: 274, pl. 21, figs 1–4.

Holotype (possible): F59304 (1 microslide).

Remarks: *ex* Bale Coll., *ex* BMNH 99.7.1.6201. The slide is listed in Bale's Register, no. 265, as "schizotype."

Paratypes: F59305 (2 microslides).

Remarks: *ex* Bale Coll., *ex* BMNH. One slide is listed in Bale's Register, no. 266, as "from paratype."

New Zealand.

aglaopheniaformis*, *Plumularia Mulder and Trebilcock, 1909: 32, pl. 1, fig. 7.

Syntype: F57967 (1 microslide).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll.

aglaophenoides*, *Plumularia Bale, 1884: 126, pl. 10, fig. 6.

- Holotype* (probable): F58824 (1 microslide); F58825 (dry).
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 174, as "co-type."
Holotype (probable): F59063 (1 microslide).
Remarks: *ex* Bale Coll., *ex* Maplestone Coll.
New South Wales, Broughton Islands; 25 fm [46 m]; W.A. Haswell.
- alata*, *Plumularia*** Bale, 1888: 782, pl. 19, figs 6–10.
Syntypes (probable): F58775 (2 microslides).
?New Zealand or Victoria; on red frondose alga; Dr Ralph.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 199, as "co-type." Exact locality of syntypes unknown.
- alternatella*, *Plumularia*** Mulder and Trebilcock, 1911: 121, pl. 3, figs 1, 1a, 2.
Syntypes: F57991 (2 microslides).
Victoria, Spring Creek [near Barwon Heads].
Remarks: *ex* Trebilcock Coll.
- armata*, *Aglaophenia*** Bale, 1914b: 175, pl. 38, figs 3, 4.
Syntypes (probable): F58340 (6 microslides).
Queensland, off Port Curtis, Capricorn Group, NE of North Reef; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 307 and 308, as "co-types." Another two slides are listed in Trebilcock's Register, nos. 174 and 174a.
- armata*, *Plumularia*** Allman, 1883: 22, pl. 4, figs 3, 4.
Holotype (possible): F60321 (1 microslide).
New South Wales, off Port Jackson; 36°59'S, 150°20'E; red clay; 30–35 fm [55–64 m]; dredged; 4 Apr 1874; HMS *Challenger*; Stn 163A.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered possibly part of the holotype by inference.
- ascidioides*, *Aglaophenia*** Bale, 1882: 32, pl. 13, figs 5, 5a, b.
Syntypes (probable): F58901 (1 microslide);
F58902 (1 microslide);
F59029 (dry).
Remarks: *ex* Bale Coll. The two slides are listed in Bale's Register (nos. 234 and 235) as "co-types" and are labelled as *Halicornaria ascidioides*.
Syntypes (probable): F59065 (1 microslide).
Remarks: *ex* Bale Coll., *ex* Maplestone Coll.
Victoria, Queenscliff; W.M. Bale.
- asymmetrica*, *Plumularia*** Bale, 1914a: 29, pl. 4, figs 2, 3.
Syntypes (probable): F58655 (4 microslides);
F58656 (3 microslides).
Remarks: *ex* Bale Coll. Two of the slides are listed in Bale's Register, nos. 196 and 197, as "co-types."
Syntype (probable): F58657 (1 microslide).
Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).
Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
- aura*, *Halicornaria*** Watson, 1973: 197, text figs 74–76.
Holotype: F42088 (1 microslide), previous no. G2088;
F42107 (formalin), previous no. G2107.
South Australia, Pearson Island, rough watered side of island; epilithic on rock walls; 33 m; SCUBA; 7 Jan 1969; J.E. Watson.
Paratypes: F42089 (1 microslide), previous no. G2089;
F42108 (formalin), previous no. G2108.
South Australia, Pearson Island, rough-watered side of island; epilithic; 33 m; SCUBA; 10 Jan 1969; J.E. Watson.
Paratypes: F42090 (1 microslide), previous no. G2090;
F42109 (formalin), previous no. G2109.
South Australia, Pearson Island, rough watered side of island; epilithic on rock walls; 27–30 m; SCUBA; 7 Jan 1969; J.E. Watson.
- aurita*, *Plumularia*** Bale, 1888: 784, pl. 19, figs 15–19.
Syntype (probable): F58776 (1 microslide).
New South Wales, Botany.
Remarks: *ex* Bale Coll.
- australiensis*, *Plumularia*** Watson, 1973: 193, text figs 68–71.
Holotype: F42067 (1 microslide), previous no. G2067;
F42106 (formalin), previous no. G2106.
Paratypes: F42068 (1 microslide), previous no. G2068;
F42069 (1 microslide), previous no. G2069;
F42070 (1 microslide), previous no. G2070;
F42071 (1 microslide), previous no. G2071.
South Australia, Pearson Island, rough watered side of island; on sponge; 20–25 m; SCUBA; 12 Jan 1969; J.E. Watson.
- australis*, *Plumularia obliqua*** Kirchenpauer, 1876: 49, pl. 6, fig. 10.
Syntype (possible): F58239 (dry).
Victoria, Port Phillip Bay [as "Port Philip (Australien)"]; on *Zostera* sp.; c.1865.
Remarks: *ex* Herbarium O.W. Sonder Coll. Labelled as *Monopyxis australis*, an earlier manuscript name. Considered a possible syntype by inference.
- avicularis*, *Halicornopsis*** Bale, 1882: 26, pl. 13, figs 3, 3a, b.
Syntypes (probable): F59340 (1 microslide);
F58896 (1 microslide);
F58897 (1 microslide).
Victoria, Griffiths Point; J.R.Y. Goldstein.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 156, as "co-type."
- baileyi*, *Halicornaria*** Bale, 1884: 177, pl. 13, fig. 4, pl. 16, fig. 2.
Holotype (probable): F58837 (1 microslide);
F59341 (1 microslide);
F58838 (dry).
Victoria, Port Phillip Bay, Schnapper Point; J.F. Bailey.
Remarks: *ex* Bale Coll. The two slides are listed in Bale's Register, nos. 243 and 244, as "co-types." The register also details a *Halicornaria humilis* epizoon on the specimen.
- bakeri*, *Aglaophenia*** Bale, 1919: 353, pl. 17, figs 7, 8.
Syntypes (probable): F58734 (5 microslides).
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 301 and 302, as "co-types."
Syntype (probable): F58735 (1 microslide).
Remarks: *ex* Trebilcock Coll.
Victoria, Western Port; F.H. Baker.
- balei*, *Plumularia*** Bartlett, 1907b: 65, unnumbered pl. fig.
Syntypes: F57885 (1 microslide), previous no. 62764;
F57968 (1 microslide).
Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].
- banksii*, *Plumularia*** Gray, 1843: 294.
Syntype: F59300 (1 microslide).
New Zealand, Dusky Bay; Oct 1769–Apr 1770; HMS *Endeavour*; J. Banks.
Remarks: *ex* Bale Coll., *ex* Banks Coll., BMNH 94.5.4.1. The slide is labelled as "schizotype," under the name *Hemicarpus banksii*.
- billardi*, *Aglaophenia*** Bale, 1914a: 33, pl. 3, fig. 3, pl. 6, fig. 3.
Syntypes (probable): F58658 (10 microslides);
F58659 (6 microslides).
Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 283 and 284, as "co-types." Another two slides are listed in Trebilcock's Register, nos. 184 and 185.
- birostrata*, *Halicornaria*** Bale, 1914a: 49, pl. 4, fig. 5, pl. 7, fig. 6.
Syntypes (probable): F58671 (4 microslides);
F58672 (1 microslide).

- Great Australian Bight; on *Aglaophenia megalocarpa*; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 232 and 233, as "co-types." Another slide is listed in Trebilcock's Register, no. 172.
- biseptata**, *Kirchenpaueria* Blackburn, 1938: 318, text fig. 3.
Holotype: F57877 (1 microslide), previous no. 70662.
South Australia, Spencer Gulf, Reevesby Island; on *Posidonia* and *Cymodocea*; 5 fm [9 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.
Paratype: F57881 (1 microslide), previous no. 70663.
South Australia, Spencer Gulf, Hareby Island; on *Posidonia* and *Cymodocea*; Jan 1937; McCoy Society for Field Investigation and Research Expedition.
- brevicaulis**, *Aglaophenia* Kirchenpauer, 1872: 41, pl. 1, fig. 20, pl. 5, fig. 19.
Syntype (possible): F58236 (dry).
New South Wales, Ballina [as "Ballina, Australien"].
Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.
- briggsii**, *Aglaophenia divaricata* Bale, 1926: 22, text fig. 5.
Syntype (probable): F58727 (1 microslide).
New South Wales, Port Jackson.
Remarks: *ex* Bale Coll.
- buskii**, *Plumularia* Bale, 1884: 125, pl. 10, fig. 3, pl. 19, figs 34, 35.
Syntypes (probable): F58822 (1 microslide); F58823 (1 microslide).
Victoria, Griffiths Point; J.R.Y. Goldstein.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 167, as "co-type."
- calamus**, *Aglaophenia* Allman, 1883: 39, pl. 12, figs 5–8.
Syntype (possible): F60325 (1 microslide).
Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 143. Trebilcock reidentified and labelled the slide as *A. pluma*. Considered a possible syntype by inference.
- caliculata**, *Plumularia* Bale, 1888: 780, pl. 20, figs 9–11.
Syntype (probable): F58774 (1 microslide).
New South Wales, Port Jackson.
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 182, as "co-type."
Syntypes (probable): F58772 (2 microslides).
New South Wales, Bondi Bay.
Remarks: *ex* Bale Coll.
Syntype (probable): F58773 (1 microslide).
New South Wales, Bondi Bay.
Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 277, as "part of type."
- calycifera**, *Aglaophenia* Bale, 1914b: 178, pl. 37, figs 3, 4.
Syntypes (probable): F58401 (6 microslides).
Great Australian Bight; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 309 and 310, as "co-types." Another slide is listed in Trebilcock's Register, no. 171. Exact locality of these specimens unknown.
Syntypes (probable): F58402 (3 microslides).
Great Australian Bight; 130°40'E; 160 fm [293 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).
- campanuliformis**, *Plumularia* Mulder and Trebilcock, 1909: 31, pl. 1, figs 6, 9, 10.
Syntype: F57966 (1 microslide).
Victoria, Barwon Heads.
- Remarks: *ex* Trebilcock Coll.
- carinata**, *Aglaophenia* Bale, 1894: 105, pl. 6, figs 1–3.
Syntypes (probable): F58750 (2 microslides); F59337 (1 microslide).
Western Australia, Rottnest Island; A.H. Courderôt.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 297 and 298, as "co-types."
- carinifera**, *Aglaophenia* Bale, 1914b: 181, pl. 38, figs 1, 2.
Syntypes (probable): F58406 (6 microslides).
Great Australian Bight; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 278 and 279, as "co-types." Exact locality of these specimens unknown.
Syntypes (probable): F58407 (3 microslides).
Great Australian Bight; 80–120 fm [146–220 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).
Syntype (probable): F59345 (EtOH).
Great Australian Bight; 120 fm [220 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).
- chiltoni**, *Thecocarpus* Bale, 1924: 261, text fig. 16.
Syntypes (probable): F58221 (4 microslides).
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 305 and 306.
Syntype (probable): F60225 (1 microslide).
Remarks: *ex* Trebilcock Coll.
New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.
- ciliata**, *Nemertesia* Bale, 1914b: 170, pl. 36, fig. 1.
Syntype (probable): F58338 (1 microslide).
Tasmania, Oyster Bay; 60 fm [110 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll.
- compressa**, *Plumularia* Bale, 1882: 43, pl. 15, figs 5, 5a.
Syntypes (probable): F59055 (1 microslide); F59056 (1 microslide); F59057 (dry).
South Australia, ?Robe; T.B. Smeaton.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 203, as "co-type."
- cornuta**, *Plumularia* Bale, 1884: 132, pl. 11, figs 1, 2.
Syntypes (probable): F58830 (1 microslide); F58831 (dry).
Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.
Remarks: *ex* Bale Coll.
Syntype (probable): F59060 (1 microslide).
Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.
Remarks: *ex* Bale Coll., *ex* Mapleston Coll. The slide is listed in Bale's Register, no. 208, as "co-type."
Syntypes (probable): F58832 (1 microslide); F58833 (dry).
Queensland, Bowen [as "Pt. Denison"]; W.A. Haswell.
Remarks: *ex* Bale Coll.
Syntypes (probable): F58834 (2 microslides); F58835 (dry).
Queensland, Holbourne Island [as "Holborn Id."]; 20 fm [37 m]; W.A. Haswell.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 207, as "co-type."
- corrugata**, *Plumularia setaceoides* Mulder and Trebilcock, 1911: 118, pl. 2, fig. 8.
Syntypes: F57972 (1 microslide); F57986 (1 microslide).
Victoria, Torquay.
Remarks: *ex* Trebilcock Coll. The epithet *corrugata* was raised to specific rank by Mulder and Trebilcock (1914b: 43). The name *P. corrugata* was subsequently found to be preoccupied,

- and the taxon was given the new name *P. corrugatissima* (see Mulder and Trebilcock, 1915: 53).
- crateriformis, *Plumularia setaceoides*** Mulder and Trebilcock, 1911: 118, pl. 3, figs 8, 8a.
Syntypes: F57987 (1 microslide);
 F57988 (1 microslide);
 F57989 (1 microslide).
 Victoria, Thompsons Creek [near Barwon Heads and Torquay] [as "Bream Creek"].
 Remarks: *ex* Trebilcock Coll.
- crateroides, *Plumularia*** Mulder and Trebilcock, 1911: 123, pl. 3, figs 5, 5a.
Syntype: F57993 (1 microslide).
 Victoria, Queenscliff.
 Remarks: *ex* Trebilcock Coll.
- cruciata, *Nemertesia ciliata*** Bale, 1915: 300.
Syntypes (probable): F58332 (3 microslides).
 Tasmania, off South Cape; 75 fm [137 m]; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 154.
- cylindrica, *Antennularia*** Bale, 1884: 146, pl. 10, fig. 7.
Holotype (probable): F58836 (2 microslides).
 Queensland, Port Curtis; 5–7 fm [9–13 m]; W.A. Haswell.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 152, as "co-type."
- cystifera, *Aglaophenia divaricata*** Bale, 1915: 314.
Syntype (probable): F58334 (1 microslide).
 South Australia; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 261, as "co-type."
- dannevigi, *Aglaophenia*** Bale, 1914a: 41, pl. 3, fig. 4, pl. 6, fig. 4.
Syntypes (probable): F58663 (6 microslides);
 F58664 (3 microslides);
 F58665 (6 microslides).
 Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. Four slides are listed in Bale's Register, nos. 274, 275, 276 and 277, as "co-types." Another slide is listed in Trebilcock's Register, no. 167.
- decumbens, *Aglaophenia*** Bale, 1914a: 48, pl. 4, fig. 4, pl. 6, fig. 6.
Syntypes (probable): F58669 (1 microslide);
 F58785 (1 microslide).
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 264, as "co-type."
Syntype (probable): F58670 (1 microslide).
 Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).
 Bass Strait; 1909–1914; FIS *Endeavour*.
- delicatula, *Plumularia*** Busk, 1852: 396.
Syntype (possible): F57958 (1 microslide).
 Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 290, as "co-type."
- delicatula, *Plumularia*** Bale, 1882: 40, pl. 15, figs 2, 2a.
Syntype (probable): F59050 (1 microslide).
 Victoria, Griffiths Point; J.R.Y. Goldstein.
 Remarks: *ex* Bale Coll. Bale (1926: 21) found the name *P. delicatula* preoccupied, and gave the taxon the new name *P. wilsoni*.
- dubia, *Plumularia campanulaformis*** Mulder and Trebilcock, 1911: 115, pl. 2, fig. 6.
Syntype: F57983 (1 microslide).
 Victoria, Torquay.
 Remarks: *ex* Trebilcock Coll.
- dubiaformis, *Plumularia*** Mulder and Trebilcock, 1911: 119, pl. 2, fig. 7.
Syntypes (probable).
 Victoria; Queenscliff, Bream Creek and Torquay.
 Remarks: type specimens not found (see Appendix 1).
- effusa, *Acanthella*** Allman, 1883: 27, pl. 6.
Syntype (possible): F60323 (1 microslide).
 Torres Strait, Queensland, off Cape York; dredged; Aug–Sep 1874; HMS *Challenger*.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 142. Trebilcock reidentified and labelled the slide as *Plumularia scabra*. Considered a possible syntype by inference.
- effusa, *Plumularia*** Busk, 1852: 400.
Syntype: F59329 (1 microslide).
 Torres Strait, Prince of Wales Channel; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 198, as "type."
- epibracteolosa, *Plumularia*** Watson, 1973: 189, text figs 56–60.
Holotype: F42046 (1 microslide), previous no. G2046;
 F42101 (formalin), previous no. G2101.
Paratypes: F42047 (1 microslide), previous no. G2047;
 F42048 (1 microslide), previous no. G2048;
 F42049 (1 microslide), previous no. G2049;
 F42050 (1 microslide), previous no. G2050;
 F42051 (1 microslide), previous no. G2051;
 F42052 (1 microslide), previous no. G2052.
 South Australia, Pearson Island, rough watered side of island; on *Sargassum bracteolosum*; 45 m; SCUBA; 9 Jan 1969; S.A. Shepherd.
- everta, *Plumularia*** Mulder and Trebilcock, 1909: 31, pl. 1, fig. 5.
Syntypes: F57965 (2 microslides).
 Victoria, Torquay.
 Remarks: *ex* Trebilcock Coll.
- excavata, *Plumularia*** Mulder and Trebilcock, 1911: 116, pl. 2, figs 3, 3a.
Syntypes: F57985 (3 microslides).
 Victoria, Spring Creek [near Torquay]; G.H. Roebuck.
 Remarks: *ex* Trebilcock Coll.
- flabellum, *Plumularia*** Allman, 1883: 19, pl. 1, figs 1–4.
Syntype (possible): F60245 (1 microslide).
 Indian Ocean, off Marion Island; 50–75 fm [92–137 m]; dredged; 26 Dec 1873; HMS *Challenger*.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. Trebilcock reclassified and labelled the slide as *P. insignis flabellum*. Considered a possible syntype by inference.
- flexuosa, *Plumularia*** Bale, 1894: 115, pl. 5, figs 6–10.
Syntypes (probable): F58754 (1 microslide);
 F58755 (3 microslides).
 Victoria, mouth of Snowy River; P.H. MacGillivray.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 205 and 206, as "co-types."
- furcata, *Halicornaria*** Bale, 1884: 178, pl. 13, fig. 3, pl. 16, fig. 5.
Syntypes (probable): F58839 (2 microslides);
 F58841 (dry).
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 245, as "co-type."
Syntype (possible): F58840 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.
Syntype (possible): F59059 (1 microslide).
 Remarks: *ex* Trebilcock Coll.

- New South Wales, off Port Stephens, Broughton Islands; 25 fm [46 m]; W.A. Haswell.
- geelongensis, *Plumularia campanula*** Mulder and Trebilcock, 1916: 76, pl. 11, figs 2, 2a–c.
Syntype (probable).
 Victoria, Corio Bay.
 Remarks: type specimen not found (see Appendix 1).
- goldsteini, *Plumularia*** Bale, 1882: 41, pl. 15, figs 7, 7a.
Syntype (probable): F59051 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll.
- gracilis, *Plumularia*** Lendenfeld, 1884c: 476, pl. 14, fig. 17, pl. 17, figs 28, 29.
Syntype: F59276 (1 microslide).
 Torres Strait; dredged; W. Macleay.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 189) as "from Lendenfeld's type," and labelled as *P. ram-sayi*.
- haswellii, *Halicornaria*** Bale, 1884: 180, pl. 13, fig. 5, pl. 16, fig. 8.
Holotype (probable): F58842 (1 microslide);
 F58843 (1 microslide);
 F58844 (dry).
 Queensland, Port Curtis; 5 fm [9 m]; W.A. Haswell.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 241, as "co-type."
- heterocarpa, *Aglaophenia*** Bale, 1882: 31.
Holotype (probable): F59334 (1 microslide).
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 317) as "co-type," and labelled as *A. brevirostris*.
Holotype (probable): F58900 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.
 Pacific Ocean, Fiji; J.R.Y. Goldstein.
- heterogona, *Thecocalus*** Bale, 1924: 255, text fig. 13.
Syntypes (probable): F58220 (5 microslides).
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 172 and 173, as "co-types."
Syntype (probable): F59335 (1 microslide).
 Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 278, as "part of type."
 New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.
- humilis, *Halicornaria*** Bale, 1884: 182, pl. 13, fig. 8, pl. 16, fig. 6.
Syntypes (probable): F58845 (2 microslides).
 Victoria, Queenscliff.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 217, as "co-type."
Syntype (probable): F58846 (1 microslide).
 Victoria, Queenscliff; on *H. ascidioides*.
 Remarks: *ex* Bale Coll.
- huxleyi, *Plumularia*** Busk, 1852: 395.
Syntype (possible): F57957 (1 microslide).
 Queensland, off Cumberland Islands; fine grey mud; 27 fm [49 m]; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 303. Considered a possible syntype by inference.
- hyalina, *Plumularia*** Bale, 1882: 41, pl. 15, fig. 9.
Syntype (probable): F59052 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll.
- ilicistoma, *Aglaophenia*** Bale, 1882: 33, pl. 14, figs 4, 4a, b.
Syntypes (probable): F59030 (1 microslide);
 F59031 (1 microslide);
 F59032 (1 microslide);
 F59399 (1 microslide);
 F59033 (dry).
 Remarks: *ex* Bale Coll. Three slides are listed in Bale's Register, nos. 227, 228 and 229, as "co-types." The four slides are labelled *Halicornaria ilicistoma*.
Syntype (probable): F59066 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.
 Victoria, Queenscliff; W.M. Bale.
- inarmatus, *Thecocarpus formosus*** Trebilcock, 1928: 26, pl. 5, figs 6, 6a.
Syntypes (probable).
 New Zealand, Island Bay.
 Remarks: type specimens not found (see Appendix 1).
- indivisa, *Plumularia*** Bale, 1882: 39, pl. 15, figs 1, 1a, b.
Syntype (probable).
 Victoria, Port Phillip Bay, Williamstown.
 Remarks: type specimen not found (see Appendix 1).
- indivisa, *Sciurella*** Allman, 1883: 26, pl. 5.
Syntype: F59308 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* BMNH. The slide is listed in Bale's Register, no. 153, as "from *Challenger* type."
Syntype (possible): F60322 (1 microslide).
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 142. Trebilcock reclassified and labelled the slide as *Nemertesia indivisa*.
 Torres Strait, Queensland, Cape York, off Somerset Island; 5–10 fm [9–18 m]; dredged; Aug–Sep 1874; HMS *Challenger*.
- insignis, *Plumularia*** Allman, 1883: 21, pl. 2.
Holotype (possible): F60246 (1 microslide).
 Indian Ocean, off Marion Island; 46°41'S, 38°10'E; volcanic sand; 310 fm [567 m]; dredged; 27 Dec 1873; HMS *Challenger*; Stn 145A.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered a possible holotype by inference.
- intermedia, *Halicornaria*** Bale, 1914a: 53, pl. 5, fig. 2, pl. 7, figs 3, 4.
Syntypes (probable): F58674 (3 microslides);
 F58676 (1 microslide);
 F58675 (2 microslides).
 Tasmania, Oyster Bay; 20 fm [37 m]; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 246 and 247. In a tipped-in preface, Bale (1914a) found the name *H. intermedia* preoccupied, and gave the taxon the new name *H. furcata* var. *intermedia*.
- laxa, *Aglaophenia*** Allman, 1876: 275, pl. 21, figs 5–7.
Holotype (probable): F59306 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* BMNH 99.7.1.6197. The slide is listed in Bale's Register, no. 267, as "schizotype."
Paratypes: F59307 (3 microslides).
 Remarks: *ex* Bale Coll., *ex* BMNH. One slide is listed in Bale's Register, no. 268, as "from paratype."
 New Zealand; "growing over the surface of a litoral fucus."
- longicornis, *Plumularia*** Busk, 1852: 399.
Syntype (possible): F57960 (1 microslide).
 Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* BMNH. Considered a possible syntype by inference.
- lucerna, *Plumularia*** Mulder and Trebilcock, 1911: 122, pl. 3, fig. 4.
Syntype: F57992 (1 microslide).
 Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].
 Remarks: *ex* Trebilcock Coll.

- macrocarpa, *Aglaophenia*** Bale, 1888: 791, pl. 21, figs 3, 4.
Syntypes (probable): F58778 (2 microslides).
 New South Wales, off Port Jackson.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 286, as "co-type."
- mccoyi, *Aglaophenia*** Bale, 1882: 36, pl. 14, figs 2, 2a–c.
Syntypes (probable): F59040 (2 microslides);
 F59041 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 262 and 263, as "co-types." Under provisions of the ICZN (1985), the specific name should be emended to *maccoyi*.
- megalocarpa, *Aglaophenia*** Bale, 1914b: 45, pl. 4, fig. 1, pl. 6, fig. 5.
Syntypes (probable): F58666 (4 microslides);
 F58667 (2 microslides);
 F58668 (1 microslide).
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 311 and 312, as "co-types."
Syntype (probable): F60339 (1 microslide).
 Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).
 Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914;
 FIS *Endeavour*.
- meretricia, *Plumularia*** Watson, 1973: 191, text figs 61–64.
Holotype: F42053 (1 microslide), previous no. G2053;
 F42102 (formalin), previous no. G2102.
Paratypes: F42055 (1 microslide), previous no. G2055;
 F42056 (1 microslide), previous no. G2056;
 F42057 (1 microslide), previous no. G2057;
 F42058 (1 microslide), previous no. G2058;
 F42103 (formalin), previous no. G2103.
 South Australia, Pearson Island, rough watered side of island;
 on sponge on vertical walls; 27–33 m; SCUBA; 7 Jan 1969;
 J.E. Watson.
Paratype: F42054 (1 microslide), previous no. G2054.
 South Australia, Pearson Island, sheltered side of island; on
 sponge on vertical walls; 18 m; SCUBA; 8 Jan 1969; J.E.
 Watson.
Paratypes: F42059 (1 microslide), previous no. G2059;
 F42104 (formalin), previous no. G2104.
 South Australia, Pearson Island, rough watered side of island;
 on sponge; 27–30 m; SCUBA; 7 Jan 1969; J.E. Watson.
- microscopica, *Plumularia*** Mulder and Trebilcock, 1909: 30, pl. 1, fig. 4.
Holotype: F57964 (1 microslide).
 Victoria, Thompsons Creek [near Torquay] [as "Bream
 Creek"]; on *Sertularella divaricata*; G.C. Bartlett.
 Remarks: *ex* Trebilcock Coll.
- minutus, *Thecocalus*** Trebilcock, 1928: 25, pl. 7, figs 6, 6a.
Syntypes (possible): F57899 (2 microslides).
 New Zealand, Dunedin, St Clair; Apr–May 1923; R.E.
 Trebilcock.
 Remarks: *ex* Trebilcock Coll. Considered possible syntypes by
 inference.
- mirabilis, *Diplocheilus*** Allman, 1883: 49, pl. 8, figs 4–7.
Holotype: F59309 (1 microslide).
 Bass Strait, Tasmania, off Moncoeur Island; sand; 38–40 fm
 [70–73 m]; dredged; 2 Apr 1874; HMS *Challenger*; Stn 162.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in
 Trebilcock's Register, no. 228, as "type." Trebilcock reclassi-
 fied and labelled the slide as *Kirchenpaueria mirabilis*.
- mulderi, *Aglaophenia*** Bartlett, 1907b: 66, unnumbered pl. fig.
Holotype: F57886 (1 microslide), previous no. 62765.
 Victoria, Thompsons Creek [near Queenscliff] [as "Bream
 Creek"].
- multiseptata, *Cladocarpella*** Bale, 1915: 304, pl. 47, figs 1–5.
Syntype (probable): F58333 (1 microslide).
 Queensland, off Port Curtis, Capricorn Group, 38 miles [61 km]
 NE of North Reef; 74 fm [135 m]; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll.
- obesa, *Plumularia*** Blackburn, 1938: 315, text fig. 1.
Holotype: F57876 (1 microslide), previous no. 70661.
 South Australia, Spencer Gulf, Reevesby Island; on *Posidonia*;
 4–5 fm [7–9 m]; Dec 1936; McCoy Society for Field
 Investigation and Research Expedition.
- opima, *Plumularia setacea*** Bale, 1924: 254, text fig. 11c.
Syntype (probable): F60243 (1 microslide).
 New Zealand, Dunedin, Tomahawk Beach; 14 Sep 1911; C.B.
 Morris.
 Remarks: *ex* Bale Coll.
- opposita, *Plumularia*** Mulder and Trebilcock, 1911: 120, pl. 2,
 fig. 5.
Syntype: F57990 (1 microslide).
 Victoria, Torquay.
 Remarks: *ex* Trebilcock Coll.
- parvula, *Aglaophenia*** Bale, 1882: 35, pl. 14, figs 3, 3a, b.
Syntypes (probable): F53249 (1 microslide);
 F53313 (1 microslide);
 F59037 (1 microslide);
 F59038 (1 microslide);
 F59039 (dry).
 Victoria, Queenscliff; W.M. Bale, J.R.Y. Goldstein.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register,
 nos. 291 and 292, as "co-types."
- phoenicea, *Plumularia*** Busk, 1852: 398.
Syntype (possible): F57959 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is
 listed in Bale's Register, no. 251, and labelled "from Mr Busk."
Syntypes (possible): F59328 (2 microslides).
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The two slides
 are labelled as *Lytocarpus phoeniceus*.
 Torres Strait, Prince of Wales Channel; 9 fm [16 m];
 1846–1850; HMS *Rattlesnake*.
- phyllocarpa, *Aglaophenia*** Bale, 1888: 793, pl. 21, figs 9, 10.
Holotype (probable): F58779 (2 microslides).
 Queensland, Bowen [as "Port Denison"].
 Remarks: *ex* Bale Coll.
- pluma, *Heteroplion*** Allman, 1883: 32, pl. 8, figs 1–3.
Holotype (possible): F60324 (1 microslide).
 Bass Strait, Tasmania, off East Moncoeur Island; 39°10.5'S,
 146°37.0'E; sand and shells; 38–40 fm [70–73 m]; dredged; 2
 Apr 1874; HMS *Challenger*; Stn 162.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in
 Trebilcock's Register, no. 150. Trebilcock reidentified and
 labelled the slide as *Plumularia glutinosa*. Considered possibly
 part of the holotype by inference.
- plumosa, *Aglaophenia*** Bale, 1882: 37, pl. 14, figs 6, 6a, b.
Syntypes (probable): F59042 (1 microslide);
 F59043 (1 microslide);
 F59044 (1 microslide);
 F59045 (2 microslides);
 F59046 (dry).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register,
 nos. 271 and 272, as "co-types."
- procumbens, *Plumularia*** Spencer, 1891: 130, pls 21–23.
Syntype (possible): F58410 (EtOH).
 Remarks: *ex* University of Melbourne, Department of Zoology
 (MUZD 413). Considered a possible syntype by inference.
Syntypes (possible): F58411 (1 microslide);
 F58412 (2 microslides).
 Remarks: *ex* Bale Coll. The slides are labelled "JBW 771,"

- probably referring to a systematic listing. One slide is listed in Bale's Register, no. 190, as the "same material as Spencer's." Considered possible syntypes by inference.
Syntype (possible): F58413 (1 microslide).
 Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 302, as a "specimen received from Bale." Considered a possible syntype by inference.
 Victoria, Port Phillip Bay; J.B. Wilson.
- producta, Plumularia*** Bale, 1882: 39, pl. 15, fig. 3.
Syntype (probable): F59047 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 159) as "co-type," and labelled as *Kirchenpaueria producta*.
- prolifera, Aglaophenia*** Bale, 1882: 34, pl. 14, figs 5, 5a.
Syntypes (probable): F59034 (2 microslides);
 F59035 (1 microslide);
 F59036 (dry).
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 230, as "type." The slides are labelled *Halicornaria prolifera*.
Syntype (probable): F59064 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.
 Victoria, Queenscliff; W.M. Bale.
- pulchella, Plumularia*** Bale, 1882: 42, pl. 15, figs 6, 6a.
Syntype (probable): F59054 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll.
- racemiferus, Lytocarpus*** Allman, 1883: 41, pl. 13.
Syntypes: F58201 (2 microslides).
 Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; FIS *Challenger*.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 147 and 147a, as "from type."
- ramosa, Plumularia*** Busk, 1852: 398.
Syntype: F59327 (1 microslide).
 Tasmania, Banks Strait, Swan Island; "thrown on the beach"; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH 99.7.1.6241. The slide is labelled "schizotype."
- ramsayi, Plumularia*** Bale, 1884: 131, pl. 11, figs 3, 4.
Syntypes (probable): F58826 (1 microslide);
 F58827 (dry).
 Queensland, Bowen [as "Port Denison"]; 5 fm [9 m]; W.A. Haswell.
 Remarks: *ex* Bale Coll.
Syntype (probable): F58828 (1 microslide).
 Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 188, as "co-type."
Syntype (probable): F59062 (1 microslide).
 Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.
 Remarks: *ex* Trebilcock Coll., *ex* Maplestone Coll. The slide is listed in Trebilcock's Register, no. 177.
Syntype (probable): F58829 (1 microslide).
 Queensland, Albany Passage; 9 fm [16 m]; W.A. Haswell.
 Remarks: *ex* Bale Coll.
- rostrata, Halicornaria*** Bale, 1924: 264, text fig. 18.
Syntypes (probable): F58222 (4 microslides).
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 218 and 219, as "co-types."
Syntype (probable): F60226 (1 microslide).
 Remarks: *ex* Trebilcock Coll.
 New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.
- rotunda, Plumularia delicatula*** Mulder and Trebilcock, 1911: 116, pl. 2, fig. 2.
Syntype: F57984 (1 microslide).
 Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].
 Remarks: *ex* Trebilcock Coll.
- rubens, Aglaophenia*** Kirchenpauer, 1872: 48, pl. 8, fig. 30.
Syntype (possible): F58238 (dry).
 Queensland, Bowen [as "Port Denison (Queensland, Australien)"].
 Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.
- rubra, Plumularia*** Lendenfeld, 1884c: 476, pl. 13, figs 11, 12, pl. 14, fig. 15.
Syntype: F59296 (1 microslide).
 New South Wales, Port Jackson; "from sea-weeds of the Laminarian Zone"; R. von Lendenfeld.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 166) as "from Lendenfeld's type," and labelled as *P. campanula*.
- scandens, Halicornaria urceolifera*** Bale, 1914a: 51, pl. 5, fig. 4, pl. 7, fig. 5.
Syntypes (probable): F58673 (5 microslides).
 Great Australian Bight; on *Aglaophenia megalocarpa* and *A. billardi*; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 225 and 226, as "co-types."
- setaceaformis, Plumularia*** Mulder and Trebilcock, 1915: 52, pl. 9, figs 2, 2a, b.
Syntype: F57994 (1 microslide).
 "off Barren Island" [?Cape Barren Island, Tasmania]; on *P. buski*; 40 fm [73 m].
 Remarks: *ex* Trebilcock Coll.
- setaceoides, Plumularia*** Bale, 1882: 40, pl. 15, figs 4, 4a, b.
Syntypes (probable): F59048 (2 microslides);
 F59049 (dry).
 Victoria, Port Phillip Bay, Williamstown; W.M. Bale.
 Remarks: *ex* Bale Coll.
- sinuosa, Aglaophenia*** Bale, 1888: 790, pl. 21, figs 1, 2.
Syntypes (probable): F58777 (2 microslides).
 Queensland, Bowen [as "Port Denison"].
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 300, as "co-type."
- spectabilis, Lytocarpus*** Allman, 1883: 43, pl. 15.
Syntypes (possible): F60326 (3 microslides).
 Torres Strait, Flinders Passage; 10°30'S, 142°18'E; coral sand; 8 fm [15 m]; dredged; 8 Sep 1874; HMS *Challenger*; Stn 186.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 17, 17a, b. Trebilcock reidentified and labelled the slide as *L. phoeniceus*. Considered possible syntypes by inference.
- spinulosa, Plumularia*** Bale, 1882: 42, pl. 15, figs 8, 8a.
Syntype (probable): F59053 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll.
- squarrosa, Aglaophenia*** Kirchenpauer, 1872: 47, pl. 8, fig. 29.
Syntype (possible): F58237 (dry).
 Queensland, Bowen [as "Port Denison (Queensland, Australien)"].
 Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.
- superba, Aglaophenia*** Bale, 1882: 31, pl. 13, figs 4, 4a, b.
Syntypes (probable): F58898 (1 microslide);
 F58899 (1 microslide).
 Victoria, Griffiths Point; J.R.Y. Goldstein.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register,

- no. 237, as "co-type." The slides are labelled as *Halicornaria superba*.
- tasmanica**, *Aglaophenia* Bale, 1914a: 37, pl. 3, fig. 2, pl. 6, fig. 2.
Syntypes (probable): F58660 (13 microslides); F58662 (1 microslide).
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 280 and 281, as "co-types."
Syntypes (probable): F58661 (3 microslides).
 Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). Tasmania, Oyster Bay; 20 fm [37 m]; 1909–1914; FIS *Endeavour*.
- tenuissima**, *Aglaophenia* Bale, 1914b: 179, pl. 37, figs 1, 2.
Syntypes (probable): F58403 (10 microslides).
 Great Australian Bight; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 313 and 314, as "co-types." Exact locality of these specimens unknown.
Syntypes (probable): F58404 (2 microslides).
 Great Australian Bight; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). Exact locality of these specimens unknown.
- thompsoni**, *Aglaophenia* Bale, 1882: 33, pl. 14, figs 1, 1a.
Syntype (probable): F59333 (1 microslide).
 Victoria, Griffiths Point; J.R.Y. Goldstein.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 214) as "co-type," and labelled as *Halicornaria longirostris*.
- togata**, *Plumularia* Watson, 1973: 191, text figs 65–67.
Holotype: F42060 (1 microslide), previous no. G2060.
 South Australia, Pearson Island; rough watered side of island; on *Metagoniolithon charoides*; 33 m; SCUBA; 8 Jan 1969; S.A. Shepherd.
Paratypes: F42061 (1 microslide), previous no. G2061; F42062 (1 microslide), previous no. G2062; F42063 (1 microslide), previous no. G2063; F42064 (1 microslide), previous no. G2064; F42065 (1 microslide), previous no. G2065; F42066 (1 microslide), previous no. G2066; F42105 (formalin), previous no. G2105.
 South Australia, Pearson Island; sheltered side of island; on *Metagoniolithon charoides*; 30 m; SCUBA; 8 Jan 1969; S.A. Shepherd.
- torresia**, *Plumularia* Lendenfeld, 1884c: 477, pl. 13, figs 13, 14, pl. 14, fig. 16.
Syntype: F59277 (1 microslide).
 Torres Strait; dredged; W. Macleay.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 165) as "from Lendenfeld's type," and labelled as *P. campanula*.
- trebilcocki**, *Gattya* Watson, 1973: 186, text figs 48–52.
Holotype: F42029 (1 microslide), previous no. G2029; F42099 (formalin), previous no. G2099.
Paratypes: F42030 (1 microslide), previous no. G2030; F42032 (1 microslide), previous no. G2032; F42034 (1 microslide), previous no. G2034; F42035 (1 microslide), previous no. G2035.
 South Australia, Pearson Island; rough watered side of island; on *Caulerpa brownii*; 33 m; SCUBA; 10 Jan 1969; S.A. Shepherd.
Paratypes: F42031 (1 microslide), previous no. G2031; F42033 (1 microslide), previous no. G2033; F42100 (formalin), previous no. G2100.
 South Australia, Pearson Island, rough watered side of island; on sponge on algae; 13 m; SCUBA; 10 Jan 1969; S.A. Shepherd.
- tripartita**, *Plumularia* Lendenfeld, 1884c: 477, pl. 12, figs 8–10.
Syntype: F59278 (1 microslide).
 New Zealand, Timaru; R. von Lendenfeld.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 179) as "from Lendenfeld's type," and labelled as *P. setacea*.
- tubulifera**, *Halicornaria* Bale, 1914b: 187, pl. 36, fig. 3.
Syntypes (probable): F58408 (5 microslides).
 Great Australian Bight; 130°40'E; 160 fm [293 m]; 1909–1914; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 210 and 211, as "co-types." Another slide is listed in Trebilcock's Register, no. 170.
- tubulosa**, *Plumularia* Bale, 1894: 114, pl. 5, figs 2–5.
Syntypes (probable): F58752 (1 microslide); F58753 (2 microslides).
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 178, as "co-type." The slides are labelled "JBW 755," probably referring to a systematic listing.
Syntype (probable): F58751 (1 microslide).
 Remarks: *ex* Bale Coll. The slide is labelled "JBW 778a," probably referring to a systematic listing.
 Victoria, Port Phillip Bay; J.B. Wilson.
- turgida**, *Plumularia* Bale, 1888: 779, pl. 20, figs 12, 13.
Syntype (probable): F58770 (1 microslide).
 Remarks: *ex* Bale Coll.
Syntype (probable): F58771 (1 microslide).
 Remarks: *ex* Trebilcock Coll.
 New Zealand, Lyttelton; R. von Lendenfeld.
- wattsii**, *Plumularia* Bale, 1887: 95.
Syntypes (probable): F59338 (1 microslide); F58739 (2 microslides).
 Victoria, Port Phillip Bay, South Channel; H. Watts.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 181, as "co-type."
Syntype (possible): F58746 (1 microslide).
 Victoria, Port Phillip Bay; H. Watts.
 Remarks: *ex* Watts Coll. Considered a possible syntype by inference.
- whiteleggei**, *Aglaophenia* Bale, 1888: 794, pl. 21, fig. 8.
Holotype (probable): F58780 (1 microslide).
 Unknown locality.
 Remarks: *ex* Bale Coll.
- zygocladia**, *Plumularia* Bale, 1914b: 171, pl. 36, fig. 2.
Syntypes (probable): F58339 (3 microslides).
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 169, as "co-type."
Syntype (probable): F59336 (1 microslide).
 Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). The slide is listed in Trebilcock's Register, no. 296, as "type." Queensland, off Port Curtis, Capricorn Group, 38 miles [61 km] NE of North Reef Lighthouse; 74 fm [135 m]; 1909–1914; FIS *Endeavour*.

SERTULARIIDAE

- acanthostoma**, *Sertularia* Bale, 1882: 23, pl. 12, fig. 4.
Syntype (probable).
 ?South Australia, Robe; T.B. Smeaton.
 Remarks: type specimen not found (see Appendix 1).
- adcocki**, *Sertularia* Bartlett, 1907b: 63, unnumbered pl. fig.
Syntype: F57882 (1 microslide), previous no. 62760.
 Victoria, Thompsons Creek [near Queensciff] [as "Bream Creek"]; G.C. Bartlett.
- angulosa**, *Sertularella* Bale, 1894: 102, pl. 4, fig. 6.
Syntype (probable): F58749 (1 microslide).
 Unknown locality.

- Remarks: *ex* Bale Coll.
- annulata*, *Sertularia*** Allman, 1888: 52, pl. 24, figs 2, 2a.
Syntype (possible): F60331 (1 microslide).
 New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E;
 hard ground; 35 fm [64 m]; dredged; 3 Jun 1874; HMS
Challenger; Stn 163B.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in
 Trebilcock's Register, no. 219. Trebilcock reidentified and
 labelled the slide as *Sertularella gayi*. Considered a possible by
 inference.
- annulaventricosa*, *Sertularella*** Mulder and Trebilcock, 1915: 54,
 pl. 7, fig. 1, pl. 8, figs 4, 4a.
Syntypes: F57995 (2 microslides).
 Victoria, Queenscliff; Jan 1914.
 Remarks: *ex* Trebilcock Coll.
- australis*, *Dynamena*** Kirchenpauer, 1864: 11, pl. fig. 5.
Syntype (possible): F58233 (dry).
 Australia, Port Phillip Bay [as "Port Phillip (Australien)"]; on
Sargassum sp.; F. von Mueller.
 Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible
 syntype by inference.
- avia*, *Amphisbetia*** Watson, 1975: 169, text figs 26, 27.
Holotype: F42499 (1 microslide), previous no. G2499;
 F42500 (formalin), previous no. G2500.
Paratype: F42501 (1 microslide), previous no. G2501.
 Tasmania, Bruny Island, Adventure Bay; on *Carpoglossum*
confluens; 3 m; SCUBA; 16 Feb 1972; J.E. Watson.
Paratype: F42502 (1 microslide), previous no. G2502.
 Tasmania, Satellite Island [E coast of Bruny Island]; on
Carpoglossum confluens; 3 m; SCUBA; 17 Feb 1972; J.E.
 Watson.
- avriila*, *Sertularella*** Watson, 1973: 172, text figs 24, 25.
Holotype: F41964 (1 microslide), previous no. G1964;
 F42094 (formalin), previous no. G2094.
Paratypes: F41965 (1 microslide), previous no. G1965;
 F41966 (1 microslide), previous no. G1966;
 F41967 (1 microslide), previous no. G1967.
 South Australia, Pearson Island, sheltered side of island; on
Sargassum verruculosum; 13 m; SCUBA; 8 Jan 1969; S.A.
 Shepherd.
- bicornis*, *Sertularia*** Bale, 1882: 22, pl. 12, fig. 3.
Syntypes (probable): F58980 (2 microslides);
 F58886 (1 microslide).
 Victoria, Queenscliff; W.M. Bale.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register,
 no. 114, as "co-type."
- bidens*, *Sertularia*** Bale, 1884: 70, pl. 6, fig. 6, pl. 19, fig. 1.
Syntypes (probable): F58799 (1 microslide);
 F58800 (1 microslide); F58801 (1 microslide).
 Victoria, Queenscliff.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register,
 no. 136, as "co-type."
- cerastium*, *Thuiaria*** Allman, 1876: 271, pl. 18, figs 3, 4.
Holotype: F59303 (1 microslide).
 New Zealand, North Island [as "Northern Island"]; A. Sinclair.
 Remarks: *ex* Bale Coll., *ex* BMNH.
- crassiuscula*, *Sertularella*** Bale, 1924: 240, text fig. 8.
Syntype (probable): F58223 (1 microslide).
 New Zealand, Akaroa; C. Chilton.
 Remarks: *ex* Bale Coll.
Syntype (probable): F58786 (1 microslide).
 New Zealand.
 Remarks: *ex* Bale Coll., *ex* Hincks Coll., BMNH.
- crenata*, *Sertularia*** Bale, 1884: 86, pl. 4, fig. 2.
Holotype (probable): F58812 (1 microslide).
 Victoria, Port Phillip Bay, Schnapper Point; J.F. Bailey.
 Remarks: *ex* Bale Coll.
- cylindrica*, *Sertularella*** Bale, 1888: 765, pl. 16, fig. 7.
Holotype (probable).
 New South Wales, Port Jackson; on *S. divaricata subdi-*
chotoma.
 Remarks: type specimen not found (see Appendix 1).
- cylindritheca*, *Sertularia*** Allman, 1888: 59, pl. 29, figs 1, 1a.
Holotype (possible): F60334 (1 microslide).
 Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm
 [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in
 Trebilcock's Register, no. 216. Trebilcock reclassified and
 labelled the slide as *Sertularella cylindritheca*. Considered possibly
 part of the holotype by inference.
- dichotomum*, *Dictyocladium*** Allman, 1888: 77, pl. 36, figs 2, 2a.
Syntypes: F59322 (2 microslides).
 Remarks: *ex* Bale Coll., *ex* BMNH. One slide is listed in Bale's
 Register, no. 98, as "from type."
Syntypes: F58213 (2 microslides).
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed
 in Trebilcock's Register, no. 205 and 205a, as "from type."
 Trebilcock reclassified and labelled the slides as *Selaginopsis*
dichotoma.
 Bass Strait, Tasmania, off East Moncoeur Island; 39°10.5'S,
 146°37.0'E; sand and shells; 38 fm [70 m]; dredged; 2 Apr
 1874; HMS *Challenger*; Stn 162.
- distans*, *Hypopyxis*** Bale, 1914b: 167, pl. 35, figs 2–5.
Syntype (probable): F58336 (6 microslides).
 Great Australian Bight; 126°45.25'E, 190–320 fm [348–586
 m]; or, 130°40'E, 160 fm [293 m]; FIS *Endeavour*.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register,
 nos. 77 and 78, as "co-types." Exact locality of these specimens
 unknown.
- divaricata*, *Sertularia*** Busk, 1852: 388.
Syntype: F59325 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH 99.7.1.6205.
 The slide is labelled "schizotype."
Syntype (possible): F59326 (1 microslide).
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. Considered a
 possible syntype by inference.
 Bass Strait; on dead shells; 45 fm [82 m]; 1846–1850; HMS
Rattlesnake.
- divergens*, *Sertularia*** Busk, 1852: 392.
Syntype: F57955 (1 microslide).
 Tasmania, Banks Strait, Swan Island; on algae; 1846–1850;
 HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is
 listed in Bale's Register, no. 121, as "Busk's type."
- dolichocarpa*, *Thuiaria*** Allman, 1876: 270, pl. 19, figs 3, 4, 4a.
Holotype: F59302 (1 microslide).
 New Zealand, North Island [as "Northern Island"]; A. Sinclair.
 Remarks: *ex* Bale Coll. *ex* BMNH.
- dubia*, *Sertularella divaricata*** Bale, 1888: 761, pl. 16, figs 1, 2.
Syntype (probable): F58763 (1 microslide).
 New South Wales, Bondi Bay.
 Remarks: *ex* Bale Coll.
- edentula*, *Sertularella*** Bale, 1924: 237, text fig. 6.
Holotype: F58218 (5 microslides).
 New Zealand, 10 miles [16 km] NW of Cape Maria van
 Diemen; 50 fm [92 m]; C. Chilton.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register,
 nos. 75 and 76, as "co-types."
- epizoicus*, *Symplectoscyphus*** Watson, 1973: 177, text figs 31–33.
Holotype: F41985 (1 microslide), previous no. G1985;

- F42096 (formalin), previous no. G2096.
South Australia, Pearson Island, sheltered side of island; on *Thecocarpus divaricatus cystifera*; 18–27 m; SCUBA; 8 Jan 1969; J.E. Watson; Stn B.
Paratypes: F41986 (1 microslide), previous no. G1986; F41987 (1 microslide), previous no. G1987; F41988 (1 microslide), previous no. G1988.
South Australia, Pearson Island, rough watered side of island; on *Thecocarpus divaricatus cystifera*; 30 m; SCUBA; 7 Jan 1969; J.E. Watson; Stn A.
- exigua*, *Sertularia* Allman, 1888: 55, pl. 26, figs 2, 2a.
Syntype (possible): F60333 (1 microslide).
Atlantic Ocean, near the Azores; 38°38.0'N, 28°28.5'W; volcanic mud; 450 fm [824 m]; dredged; 2 Jul 1873; HMS *Challenger*; Stn 75.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 218. The plate figures were labelled as *S. laxa*, apparently an earlier manuscript name. Trebilcock reidentified and labelled the slide as *Sertularella gaudichaudi*. Considered a possible syntype by inference.
- farquhari*, *Thuiaria* Bale, 1924: 244, text fig. 10.
Syntypes: F58219 (2 microslides)
New Zealand, Lyttelton; 26 Apr 1903; C. Chilton.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 85, as "co-type."
- fasciculata*, *Dynamena* Kirchenpauer, 1864: 12, pl. fig. 7.
Syntypes (possible): F58227 (dry); F58228 (dry); F58229 (dry); F58230 (dry).
New Zealand [as "Neuseeland"]; B.E. Frieberg.
Remarks: *ex* Herbarium O.W. Sonder Coll. Considered possible syntypes by inference.
- fenestrata*, *Thuiaria* Bale, 1884: 116, pl. 7, fig. 7, pl. 9, fig. 14.
Syntypes (probable): F58817 (2 microslides).
Queensland, Albany Passage [?off Cape York, near Albany Island]; 9 fm [16 m]; W.A. Haswell.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 79, as "co-type."
Syntype (probable): F58818 (1 microslide).
Queensland, Port Curtis [near Gladstone]; 5–7 fm [9–13 m]; W.A. Haswell.
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 80, as "co-type."
- fertilis*, *Sertularia* Lendenfeld, 1884b: 406, pl. 7, figs 4, 5.
Syntype: F59299 (1 microslide).
New Zealand, Timaru; R. von Lendenfeld.
Remarks: *ex* Bale Coll.
- flabellum*, *Thecocladium* Allman, 1888: 81, pl. 38, figs 1–4.
Syntypes (possible): F60338 (2 microslides).
South Africa, Cape of Good Hope, Simons Bay; 10–20 fm [18–37 m]; Oct–Dec 1873; HMS *Challenger*.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 148 and 148a. Trebilcock reclassified and labelled the slides as *Sertularella flabellum*. Considered possible syntypes by inference.
- flucticulata*, *Sertularella robusta* Trebilcock, 1928: 18, pl. 6, figs 5, 5a.
Syntype (possible): F57896 (1 microslide).
New Zealand, Bluff; 5 May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.
- fusca*, *Sertularella* Trebilcock, 1928: 13, pl. 5, figs 2, 2a, b.
Syntype (possible): F57895 (1 microslide).
New Zealand, Dunedin, St Clair, below the swimming pool; on algae in rockpools; Apr–May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.
- fusiformis*, *Sertularia* Hutton, 1873: 257.
Syntypes: F59287 (2 microslides).
New Zealand, Lyall Bay; on algae; F.W. Hutton.
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale's Register, no. 148, as "from type."
- geminata*, *Sertularia* Bale, 1884: 78, pl. 5, figs 6, 7, pl. 19, fig. 15.
Syntype (probable): F58802 (1 microslide).
Victoria; Queenscliff, or Portland.
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 149, as "co-type." Exact locality of this specimen unknown.
Syntypes (probable): F58803 (1 microslide); F58804 (1 microslide).
Victoria, Queenscliff.
Remarks: *ex* Bale Coll.
- geniculata*, *Sertularia* Bale, 1888: 768, pl. 17, figs 6–11.
Syntype (probable): F58768 (1 microslide).
Unknown locality; on *Flustra* sp.
Remarks: *ex* Bale Coll.
- gracilis*, *Sertularia* Allman, 1888: 51, pl. 24, figs 1, 1a.
Syntype (possible): F60330 (1 microslide).
Chile [as "Patagonia"], off Port Famine; 53°37.5'S, 70°56.0'W; blue mud; 9 fm [16 m]; dredged; 13 Jan 1876; HMS *Challenger*; Stn 312.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 215. The plate figures are labelled as *S. filiformis*, apparently an earlier manuscript name. Trebilcock labelled the slide as *Sertularella filiformis*. Considered a possible syntype by inference.
- gracillima*, *Sertularia* Bale, 1926: 18, text fig. 3.
Holotype (probable): F58724 (1 microslide).
Unknown locality.
Remarks: *ex* Bale Coll. This slide is labelled "[FIS] Endeavour?"
- implexa*, *Sertularia* Allman, 1888: 54, pl. 26, figs 1, 1a.
Syntype (possible): F60332 (1 microslide).
Atlantic Ocean, between Cape Virjenes, Argentina [as "Cape Virgins"] and the Falkland Islands; 51°35'S, 65°39'W; sand; 70 fm [128 m]; trawled; 21 Jan 1876; HMS *Challenger*; Stn 314.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 217. Trebilcock reidentified and labelled the slide as *Sertularella polyzonias*. Considered a possible syntype by inference.
- inarmata*, *Sertularia trispinosa* Trebilcock, 1928: 22, pl. 5, fig. 4.
Holotype (possible): F59344 (1 microslide).
New Zealand, Island Bay; Apr–May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. Considered possibly part of the holotype by inference.
- indivisa*, *Sertularella* Bale, 1882: 24, pl. 12, figs 7, 7a.
Syntype (probable): F59068 (1 microslide).
Victoria, Port Phillip Bay, Williamstown.
Remarks: *ex* Bale Coll., *ex* Mapleston Coll. The slide is listed in Bale's Register, no. 44.
Syntype (probable): F58888 (1 microslide); F60228 (dry).
Victoria, Port Phillip Bay, Williamstown; W.M. Bale.
Remarks: *ex* Bale Coll.
Syntype (probable): F58889 (1 microslide).
Victoria, Port Phillip Bay, St Kilda.
Remarks: *ex* Bale Coll.
- integra*, *Sertularella* Allman, 1876: 262, pl. 13, figs 3, 4.
Syntype: F59301 (1 microslide).
New Zealand.
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is labelled "schizotype."

- integritheca, Sertularia** Allman, 1888: 60, pl. 29, figs 2, 2a.
Syntypes (possible): F60335 (2 microslides).
 Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 146, 146a. Trebilcock reidentified and labelled the slides as *Hincksella formosa*. Considered possible syntypes by inference.
- irregularis, Sertularella** Trebilcock, 1928: 13, pl. 5, figs 1, 1a, b.
Syntypes (possible): F57894 (2 microslides); F57939 (EtOH).
 New Zealand, Dunedin, St Clair; 3 May 1923; R.E. Trebilcock.
Syntypes (possible): F57941 (1 microslide); F57940 (EtOH).
 New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.
 Remarks: *ex* Trebilcock Coll. Considered possible syntypes by inference.
- laevis, Sertularella** Bale, 1882: 24, pl. 12, fig. 6.
Syntypes (probable): F58887 (2 microslides).
 Victoria, Port Phillip Bay, Williamstown; W.M. Bale.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 51, as "co-type."
- lata, Thuiaria** Bale, 1882: 26, pl. 13, fig. 2.
Syntype (probable): F58895 (1 microslide).
 Victoria, Griffiths Point; J.R.Y. Goldstein.
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 72, as "co-type."
- leiocarpa, Sertularia** Allman, 1888: 52, pl. 25, figs 1, 1a.
Syntype: F58212 (1 microslide).
 Atlantic Ocean, Tristan da Cunha, off Nightingale Island; 37°25.5'S, 12°28.5'W; 110 fm [201 m]; dredged; 17 Oct 1873; HMS *Challenger*; Stn 135C.
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 220, as "from type." Trebilcock reclassified and labelled the slide as *Sertularella leiocarpa*.
- loculosa, Sertularia** Busk, 1852: 393.
Syntype (possible): F57956 (1 microslide).
 Bass Strait; 47 fm [86 m]; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. Considered a possible syntype by inference.
- longithecra, Sertularella** Bale, 1888: 762, pl. 16, figs 5, 6.
Holotype (probable): F58764 (1 microslide).
 Queensland, Bowen [as "Port Denison"].
 Remarks: *ex* Bale Coll.
- macrogona, Sertularia** Bale, 1884: 80, pl. 5, fig. 2, pl. 19, fig. 11.
Syntypes (probable): F58805 (1 microslide); F58806 (1 microslide); F58807 (2 microslides); F58808 (2 microslides); F58810 (dry).
 Victoria, Queenscliff.
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 132 and 133, as "co-types."
Syntype (probable): F58809 (1 microslide).
 Victoria, Portland; C.M. Maplestone.
 Remarks: *ex* Bale Coll.
Syntype (possible): F59058 (1 microslide).
 Victoria, Queenscliff.
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll. Considered a possible syntype by inference.
- macrocarpa, Sertularella** Trebilcock, 1928: 11, pl. 1, figs 4, 4a–d.
Syntypes: F57892 (2 microslides).
 New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.
 Remarks: *ex* Trebilcock Coll.
- macrotheca, Sertularella** Bale, 1882: 25, pl. 13, fig. 1.
Syntype (probable); F58894 (1 microslide).
 Victoria, Griffiths Point; J.R.Y. Goldstein.
 Remarks: *ex* Bale Coll.
- maplestonei, Sertularia** Bale, 1884: 70, pl. 6, fig. 4, pl. 19, fig. 2.
Syntypes (probable): F58797 (1 microslide); F58798 (1 microslide).
 Victoria, Portland; C.M. Maplestone.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 137, as "co-type."
- mccallumi, Sertularella** Bartlett, 1907b: 62, unnumbered pl. fig.
Syntype: F57884 (1 microslide), previous no. 62763.
 Victoria, Queenscliff; G.C. Bartlett.
 Remarks: under provisions of the ICZN (1985), the specific name should be emended to *maccallumi*.
- microgona, Sertularella** Lendenfeld, 1884b: 416, pl. 7, figs 1–3.
Syntype: F59275 (1 microslide).
 Victoria, Port Phillip Bay; "on stones in the Laminarian Zone"; R. von Lendenfeld.
 Remarks: *ex* Bale Coll.
- minuta, Sertularia** Bale, 1882: 21, pl. 12, fig. 1.
Syntype (probable): F58978 (1 microslide).
 Victoria, Sorrento; on algae; J.B. Wilson.
 Remarks: *ex* Bale Coll.
- monilifera, Sertularia** Hutton, 1873: 257.
Syntype (possible): F59289 (1 microslide).
 New Zealand, Lyall Bay; F.W. Hutton.
 Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. Considered a possible syntype by inference.
- muelleri, Sertularia** Bale, 1913: 133, pl. 12, figs 1–5.
Syntypes (probable): F58738 (4 microslides).
 South Australia, Encounter Bay; F. von Mueller.
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 112, as "co-type."
- mutulata, Sertularia** Busk, 1852: 391.
Syntype (possible): F57954 (1 microslide).
 Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. Considered a possible syntype by inference.
- nana, Sertularia** Bale, 1926: 17, text fig. 2.
Holotype (probable): F58723 (1 microslide).
 Victoria, Port Phillip Bay; on *Sertularella peregrina*; J.B. Wilson.
 Remarks: *ex* Bale Coll.
- obliquanoda, Sertularia** Mulder and Trebilcock, 1914b: 41, pl. 5, figs 1, 1a–e.
Syntype: F57971 (1 microslide).
 Victoria, Torquay.
 Remarks: *ex* Trebilcock Coll.
- olseni, Amphisbetia** Watson, 1973: 179, text figs 34–37.
Holotype: F42001 (1 microslide), previous no. G2001.
 South Australia, Pearson Island, rough watered side of island; on sponge; 33 m; SCUBA; 10 Jan 1969; J.E. Watson.
Paratypes: F42002 (1 microslide), previous no. G2002; F42003 (1 microslide), previous no. G2003; F42004 (1 microslide), previous no. G2004; F42097 (formalin), previous no. G2097.
 South Australia, Pearson Island, rough watered side of island; on *Herdmania momus*; 33 m; SCUBA; 10 Jan 1969; J.E. Watson.
Paratypes: F42005 (1 microslide), previous no. G2005; F42098 (formalin), previous no. G2098.

- South Australia, Pearson Island, sheltered side of island; on brown algae; 17–23 m; SCUBA; 8 Jan 1969; S.A. Shepherd.
Paratype: F42006 (1 microslide), previous no. G2006.
South Australia, Pearson Island, rough watered side of island; on red algae; 33 m; SCUBA; 10 Jan 1969; S.A. Shepherd.
- pectinatus, Desmoscyphus*** Allman, 1888: 71, pl. 34, figs 1, 1a, b.
Syntype (possible): F60336 (1 microslide).
Atlantic Ocean, Brazil, off Salvador [as “Bahia”]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Trebilcock reidentified and labelled the slide as *Sertularia unguiculata*. Considered a possible syntype by inference.
- peregrina, Sertularella*** Bale, 1926: 19, text fig. 4.
Syntype (probable): F59332 (1 microslide).
Victoria, Port Phillip Bay, Williamstown.
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 57, as “co-type.” The material was originally identified by Bale (1884: 104) as *S. polyzonias* Linnaeus, and subsequently by Bale (1915: 280) as *S. gaudichaudi* (Lamouroux), before being established as a new taxon. The slide is still labelled *S. gaudichaudi*.
Syntype (probable): F58725 (1 microslide).
Victoria, Port Phillip Bay; J.B. Wilson.
Remarks: *ex* Bale Coll. Also labelled “JBW 741,” probably referring to a systematic listing.
Syntypes (probable): F58726 (5 microslides).
Victoria, Port Phillip Bay; J.B. Wilson.
Remarks: *ex* Bale Coll.
- procera, Sertularella*** Trebilcock, 1928: 11, pl. 1, figs 5, 5a–d.
Syntype: F57893 (1 microslide).
New Zealand, Bluff; 5 May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock’s Register, no. 286.
- pumiloides, Sertularia*** Bale, 1882: 21, pl. 12, fig. 2.
Syntype (probable): F58979 (1 microslide).
Victoria, Queenscliff; W.M. Bale.
Remarks: *ex* Bale Coll. The slide is labelled *S. minima* var. *pumiloides*.
Syntype (possible): F59067 (1 microslide).
Victoria, Queenscliff.
Remarks: *ex* Bale Coll., *ex* Maplestone Coll. The slide is listed in Bale’s Register, no. 333.
- pygmaea, Sertularella*** Bale, 1882: 25, pl. 12, fig. 9.
Syntype (probable): F58892 (1 microslide).
Victoria, Queenscliff; W.M. Bale.
Remarks: *ex* Bale Coll.
Syntype (probable): F58893 (1 microslide).
Victoria, Griffiths Point; J.R.Y. Goldstein.
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 61, as “co-type.”
- quadridens, Thuiaria*** Bale, 1884: 119, pl. 7, figs 5, 6.
Syntype (probable): F59061 (1 microslide).
Queensland, Port Curtis; 5 fm [9 m]; W.A. Haswell.
Remarks: *ex* Bale Coll., *ex* Maplestone Coll. The slide is listed in Bale’s Register, no. 71, as “co-type.”
Syntypes (probable): F58819 (2 microslides); F58820 (dry).
Queensland, Port Curtis; 5 fm [9 m]; W.A. Haswell.
Remarks: *ex* Bale Coll.
Syntype (probable): F58821 (1 microslide).
Queensland, Holbourne Island [as “Holborn Island”]; 20 fm [37 m]; W.A. Haswell.
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 70, as “co-type.”
- quasiplana, Sertularella robusta*** Trebilcock, 1928: 18, pl. 6, figs 4, 4a.
Syntype (possible): F60244 (1 microslide).
New Zealand, Island Bay; 24 Apr 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock’s Register, no. 307.
- ramulosa, Sertularia*** Coughtrey, 1875: 283, pl. 20, figs 12, 13.
Syntypes (probable): F59291 (2 microslides).
New Zealand, Dunedin, upper harbour; “festooned from rock to rock, or between branches of a dead floating tree.”
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale’s Register, no. 129, as “co-type.”
- recta, Sertularia*** Bale, 1882: 23, pl. 12, fig. 5.
Syntype (probable).
?South Australia, Brighton; T.B. Smeaton.
Remarks: type specimen not found (see Appendix 1).
- rectangularis, Diphasia*** Lendenfeld, 1884c: 914, pl. 41, figs 6–8.
Syntype: F59286 (1 microslide).
Torres Strait.
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 325, as “type.”
- rentoni, Sertularella*** Bartlett, 1907a: 43, 2 unnumbered pl. figs
Syntype: F57883 (1 microslide), previous no. 62762.
Victoria, Queenscliff.
- robustoides, Sertularella*** Mulder and Trebilcock, 1915: 56, pl. 9, fig. 1.
Syntypes: F57996 (3 microslides).
Victoria, Thompsons Creek [near Torquay] [as “Bream Creek”].
Remarks: *ex* Trebilcock Coll.
- rostratus, Symplectoscyphus*** Watson, 1973: 176, text figs 28–30.
Holotype: F41981 (1 microslide), previous no. G1981; F42095 (formalin), previous no. G2095.
Paratypes: F41982 (1 microslide), previous no. G1982; F41984 (1 microslide), previous no. G1984.
South Australia, Pearson Island, rough watered side of island; on *Sargassum verruculosum*; 27–30 m; SCUBA; 7 Jan 1969; S.A. Shepherd.
Paratype: F41983 (1 microslide), previous no. G1983.
South Australia, Pearson Island, rough watered side of island; on bryozoa; 33 m; SCUBA; 10 Jan 1969; S.A. Shepherd.
- simplex, Sertularia*** Hutton, 1873: 257.
Syntype (possible): F59288 (1 microslide).
New Zealand, Lyall Bay; F.W. Hutton.
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. Considered a possible syntype by inference.
- simplex, Sertularia*** Lendenfeld, 1884e: 913.
Syntype: F59285 (1 microslide).
New Zealand, Lyttelton.
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 144, as “type.”
- simplex, Thyroscyphus*** Allman, 1888: 25, pl. 13, figs 1, 2.
Syntype (possible): F60328 (1 microslide).
Torres Strait, Queensland, Cape York, off Somerset; 8–12 fm [15–22 m]; dredged; Aug–Sep 1874; HMS *Challenger*.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Trebilcock reclassified and labelled the slide as *Thyroscyphus torresii*. Considered a possible syntype by inference.
- sinuosa, Thuiaria*** Bale, 1888: 772, pl. 18, figs 9, 10.
Holotype (probable): F58769 (1 microslide).
Queensland, Port Molle.
Remarks: *ex* Bale Coll.
- solidula, Sertularella*** Bale, 1882: 24, pl. 12, fig. 8.
Syntypes (probable): F58890 (2 microslides); F58891 (dry).
Remarks: *ex* Bale Coll. One slide is listed in Bale’s Register, no. 46, as “co-type.”
Syntype (probable): F59234 (1 microslide).

- Remarks: *ex* Bale Coll., *ex* Maplestone Coll. The slide is listed in Bale's Register, no. 45.
Victoria, Port Phillip Bay, Williamstown; W.M. Bale.
- spiralis**, *Thuiaria* Trebilcock, 1928: 21, pl. 7, figs 3, 3a–e.
Syntype (possible): F57898 (1 microslide).
New Zealand, Bluff; 5 May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.
- subarticulata**, *Thuiaria* Coughtrey, 1875: 287, pl. 20, figs 32–34.
Syntypes (possible): F59294 (2 microslides).
New Zealand, Timaru; M. Coughtrey.
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale's Register, no. 84, as "co-type."
- subdichotoma**, *Sertularella divaricata* Bale, 1888: 761, pl. 16, figs 3, 4.
Syntypes (probable): F58762 (2 microslides).
New South Wales, Port Jackson.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 65, as "type."
- subpinnata**, *Sertularia* Hutton, 1873: 256.
Syntypes (probable): F59290 (2 microslides).
New Zealand, Lyall Bay; F.W. Hutton.
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale's Register, no. 60, as "co-type."
- tasmanica**, *Sertularella* Bale, 1915: 283, pl. 46, fig. 2.
Syntypes (probable): F58330 (2 microslides).
Tasmania, off South Cape; 75 fm [137 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 55, as "co-type."
- tenuis**, *Sertularia* Bale, 1884: 82, pl. 5, figs 4, 5, pl. 19, fig. 16.
Syntypes (probable): F58811 (2 microslides);
F60227 (dry).
Victoria, Port Phillip Bay, Williamstown.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 118, as "co-type."
- tenuissima**, *Thuiaria buski* Trebilcock, 1928: 20, pl. 7, fig. 2.
Syntype (possible): F57897 (1 microslide).
New Zealand, Island Bay; Apr–May 1923; R.E. Trebilcock.
Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.
- trispinosa**, *Sertularia* Coughtrey, 1875: 284, pl. 20, figs 14, 15.
Syntype (possible): F59292 (1 microslide).
New Zealand, Timaru.
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. Considered a possible syntype by inference.
- tuba**, *Sertularia* Bale, 1884: 87, pl. 4, fig. 11, pl. 19, fig. 17.
Syntypes (probable): F58813 (1 microslide);
F58814 (1 microslide);
F58815 (1 microslide);
F58816 (dry).
Victoria, Queenscliff.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 81, as "co-type."
- tubatheca**, *Sertularia minima* Mulder and Trebilcock, 1914b: 40, pl. 4, figs 1, 1a–d.
Syntypes: F57970 (3 microslides).
Victoria, Queenscliff.
Remarks: *ex* Trebilcock Coll.
- undulata**, *Sertularella* Bale, 1915: 284, pl. 46, fig. 1.
Holotype (probable): F58331 (1 microslide).
Tasmania, South Cape; on *S. tasmanica*; 75 fm [137 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll.
- unguiculata**, *Sertularia* Busk, 1852: 394.
Syntype (possible): F59330 (1 microslide).
Tasmania, Banks Strait, Swan Island; "thrown on the beach"; 1846–1850; HMS *Rattlesnake*.
Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 140. Considered a possible syntype by inference.
- unilateralis**, *Sertularia* Allman, 1888: 53, pl. 25, figs 2, 2a, b.
Syntype: F59312 (1 microslide).
Indian Ocean, Kerguelen Island, off Accessible Bay; 20 fm [37 m]; 9 Jan 1874; HMS *Challenger*; Stn 149.
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is listed as "schizotype."
- variabilis**, *Sertularella* Bale, 1888: 764, pl. 15, figs 5–9.
Syntype (probable): F58765 (4 microslides).
New South Wales, Bondi Bay.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 47 and 48, as "co-types."
Syntypes (probable): F58766 (3 microslides).
New South Wales, Bondi Bay.
Remarks: *ex* Trebilcock Coll. Two slides are listed in Trebilcock's Register, nos. 272 and 273, as "part of type."
Syntype (probable): F58767 (3 microslides).
New South Wales, Coogee.
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 329 and 330.

SYNTHECIIIDAE

- alternans**, *Synthecium* Allman, 1888: 80, pl. 37, figs 2, 2a.
Syntype: F59324 (1 microslide).
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is labelled as "type."
Syntype: F58215 (1 microslide).
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 207, as "from type." Trebilcock reclassified and labelled the slide as *Hincksella alternans*.
New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 30–35 fm [55–64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.
- campylocarpum**, *Synthecium* Allman, 1888: 78, pl. 37, figs 1, 1a–c.
Syntype: F59323 (1 microslide).
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is listed in Bale's Register, no. 105, as "schizotype."
Syntype: F58214 (1 microslide).
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 136, as "from type."
New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 30–35 fm [55–64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.
- dichotoma**, *Staurotheca* Allman, 1888: 76, pl. 36, figs 1, 1a.
Syntype (possible): F60337 (1 microslide).
Indian Ocean, off Marion Island; 46°41'S, 38°10'E; volcanic sand; 85–150 fm [156–275 m]; 27 Dec 1873; HMS *Challenger*; Stn 145A.
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered a possible syntype by inference.
- gracilis**, *Synthecium* Coughtrey, 1875: 286, pl. 20, figs 26–31.
Syntype (possible): F59293 (1 microslide).
New Zealand; Timaru, or Dunedin, Ocean Beach; M. Coughtrey.
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. The slide is listed in Bale's Register, no. 111, as "from Coughtrey's material." Considered a possible syntype by inference. Exact locality of this specimen unknown.
- subventricosum**, *Synthecium* Bale, 1914a: 5, pl. 1, figs 3–5.

Syntypes (probable): F58653 (5 microslides); F58654 (1 microslide).
Great Australian Bight; "on large plumularians"; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 106, as "co-type."

Class Anthozoa
Subclass Alcyonaria
Order Alcyonacea

ALCYONIIDAE

hicksoni, *Parerythropodium* Utinomi, 1971: 8, text fig. 2, pl. 7, fig. 3.

Holotype: F41545 (EtOH), previous no. G1545.
Victoria, Port Phillip Bay, off Mornington; on *Mytilus planulatus*; 3.5 fm [6 m]; SCUBA; 13 Oct 1957; NMV Port Phillip Survey; Stn 35.

Paratype: F41546 (EtOH), previous no. G1546.
Victoria, Port Phillip Bay, off Portarlington; on *Mytilus planulatus*; 6 fm [11 m]; SCUBA; 11 Sep 1960; NMV Port Phillip Survey; Stn 130.

NEPHTHEIDAE

arbuscula, *Capnella* Verseveldt, 1977: 185, text figs 7, 8, 43a.

Paratype: F42680 (1 EtOH), previous no. G2680.
South Australia, Investigator Strait; 24 Jan 1971; J.E. Watson; Stn Y12.

Paratype: F42681 (1 EtOH), previous no. G2681.
South Australia, Investigator Strait; 15 Jan 1971; J.E. Watson; Stn Y7.

Remarks: the species description lists F42680 as "NMV 4" and F42681 as "NMV 6."

erecta, *Capnella* Verseveldt, 1977: 188, text figs 9, 39a, c.

Paratype: F42686 (1 EtOH), previous no. G2686.
Victoria, S side of Gabo Island; 20–28 m; 19 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.
Remarks: the species description lists F42686 as "NMV 11."

gaboensis, *Capnella* Verseveldt, 1977: 190, text figs 10, 44a.

Paratype: F42677 (1 EtOH), previous no. G2677.
Victoria, S side of Gabo Island; 20–28 m; 19 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.
Paratype: F42678 (1 EtOH), previous no. G2678.
New South Wales, Green Cape; 16 m; 13 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.

Paratypes: F42679 (2 EtOH), previous no. G2679.
New South Wales, Merimbula; on reef; 40 ft [12 m]; 29 Dec 1968; K. Batchelor.

Remarks: the species description lists F42677 as "NMV 1," F42678 as "NMV 2," and F42679 as "NMV 3" and "NMV 5."

johnstonei, *Capnella* Verseveldt, 1977: 193, text figs 12, 13, 44b.

Holotype: F42684 (1 EtOH), previous no. G2684.
Paratype: F59347 (1 EtOH).
Victoria, W of Cape Nelson; 90–110 fm [165–200 m]; 6 Jun 1969; V. Johnstone.

Remarks: the species description lists G2684 as "NMV 9." The lot "NMV 9" originally included four colonies; the holotype colony (F42684) has been separated, and only one of the three remaining paratype colonies (F59347) has been found.

Paratype: F42682 (1 EtOH), previous no. G2682.
Victoria, SE of Portland; 90–120 fm [165–220 m]; Jun 1969; V. Johnstone.

Remarks: the species description lists F42682 as "NMV 7."
Paratype: F42683 (10 EtOH), previous no. G2683.
Victoria, SSW of Cape Grant; 120–150 fm [220–275 m]; Jun 1969; V. Johnstone.

Remarks: the species description lists F42683 as "NMV 8."

Only 10 of the original 16 paratype colonies have been located.
Paratype: F42685 (1 EtOH), previous no. G2685.
New South Wales, off Eden; 38°50.3'S, 148°17.2'E; 179 m; Jun 1972; Bureau of Mineral Resources; MV *San Pedro*.
Remarks: the species description lists F42685 as "NMV 10."

portlandensis, *Capnella* Verseveldt, 1977: 196, text figs 14, 15, 44c.

Holotype: F42689 (1 EtOH), previous no. G2689.
Victoria, SE of Portland; 90–120 fm [164–220 m]; Jun 1969; V. Johnstone.

Remarks: the species description lists G2689 as "NMV 14." The holotype colony has been located, but the remaining two paratype colonies have not been found.

watsonae, *Capnella* Verseveldt, 1977: 201, text figs 18, 19, 46a.

Holotype: F42687 (1 EtOH), previous no. G2687.
New South Wales, Green Cape; 16 m; 13 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.
Remarks: the species description lists F42687 as "NMV 12."

Subclass Zoantharia
Order Actiniaria

ISOPHELLIIDAE

stela, *Isophellia* Cutress, 1971: 86, text fig. 1, pl. 9, fig. 1.

Holotype: F41547 (EtOH), previous no. G1547.
Paratypes: F41548 (3 EtOH), previous no. G1548.
Victoria, Port Phillip Bay, off Middle Brighton; 3.5 fm [6 m]; SCUBA; 22 May 1960; NMV Port Phillip Survey; Stn 123.
Remarks: type specimens not found (see Appendix 1).

Order Scleractinia
Suborder Caryophyllina

CARYOPHYLLIIDAE

crenulatus, *Holcotrochus* Dennant, 1904: 3, pl. 2, figs 4a–c.

Holotype (possible).
South Australia, Backstairs Passage; dredged; 22 fm [40 m].
Remarks: type specimen not found (see Appendix 1).

hedleyi, *Trematotrochus* Dennant, 1906: 152, pl. 5, figs 1a, b.

Syntypes: F41519 (4 dry), previous no. G1519.
New South Wales, 20 miles [32 km] NE of Port Jackson; 250 fm [458 m]; dredged; C. Hedley and W.F. Petterd.
Remarks: *ex* Dennant Coll.

perexigua, *Sphenotrochus emarciatus* Dennant, 1906: 151.

Syntypes (possible).
South Australia; E of Neptune Island, dredged, 45 fm [82 m]; and, off Cape Jaffa, dredged, 90 fm [164 m] and 130 fm [238 m]; and, off Beachport, 49 fm [90 m]; and 150 fm [275 m].
Remarks: type specimens not found (see Appendix 1).

petterdi, *Trochocyathus* Dennant, 1906: 153, pl. 5, figs 2a, b.

Holotype: F41515 (dry), previous no. G1515.
Paratypes (possible): F41520 (6 dry), previous no. G1520.
New South Wales, 20 miles [32 km] NE of Port Jackson; 250 fm [458 m]; dredged; C. Hedley and W.F. Petterd.
Remarks: *ex* Dennant Coll.

planilamellata, *Caryophyllia* Dennant, 1906: 157, pl. 6, figs 4a, b.

Holotype: F41521 (dry), previous no. G1521.
South Australia, off Cape Jaffa; 120–300 fm [220–549 m]; dredged; J.C. Verco; or, off Beachport; 110 fm [201 m]; dredged; J.C. Verco.
Remarks: *ex* Dennant Coll. Exact locality of holotype specimen not determined.

recidivus, *Ceratotrochus* Dennant, 1906: 159, pl. 6, figs

1a, b, 2a–c.

Syntypes: F41516 (2 dry), previous no. G1516.

South Australia, off Cape Jaffa; 90 fm [165 m]; dredged; J.C. Verco.

Syntypes: F59348 (3 dry).

South Australia, 35 miles [56 km] SW of Neptune Island; 104 fm [190 m]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll.

suteri, *Kionotrochus* Dennant, 1906: 155, pl. 5, figs 5a, b.

Holotype: F41513 (dry), previous no. G1513.

Paratypes (possible): F59350 (39 dry).

New Zealand, 15 miles [24 km] outside Great Barrier Island; 110 fm [201 m]; dredged; H. Suter and C. Hedley.

Remarks: *ex* Dennant Coll.

verconis, *Trematotrochus* Dennant, 1904: 5, pl. 1, figs 4a, b.

Holotype (possible): not traced.

Paratypes (possible): F43273 (9 dry), previous no. G3273.

South Australia, Gulf St Vincent; dredged; J.C. Verco.

Paratypes (possible): F43268 (2 dry), previous no. G3268.

South Australia, Kangaroo Island, Cape Borda; dredged; J.C. Verco.

Paratypes (possible): F43270 (6 dry), previous no. G3270.

South Australia; Royston Head, Gulf St Vincent, and Backstairs Passage [mixed lot]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll. The holotype designated in the description is untraced. The three lots above are not labelled as types, but are considered possible paratypes by inference.

vincentinus, *Deltocyathus* Dennant, 1904: 6, pl. 2, figs 1a–c.

Holotype (possible): not traced.

Paratypes (possible): F43228 (23 dry), previous no. G3228.

Paratypes (possible): F43237 (2 dry), previous no. G3237.

South Australia, Gulf St Vincent; dredged; J.C. Verco.

Paratypes (possible): F43231 (19 dry), previous no. G3231.

South Australia, Gulf St Vincent, Yankalilla Bay; 20 fm [37 m]; dredged; J.C. Verco.

Paratypes (possible): F43238 (1 dry), previous no. G3238.

South Australia, Gulf St Vincent, off Ardrossan; dredged; J.C. Verco.

Paratypes (possible): F43233 (11 dry), previous no. G3233.

South Australia, Kangaroo Island, off Point Marsden; 15 fm [27 m]; dredged; J.C. Verco.

Paratypes (possible): F43229 (39 dry), previous no. G3229.

South Australia, Backstairs Passage; dredged; J.C. Verco.

Paratypes (possible): F43232 (3 dry), previous no. G3232.

South Australia, Backstairs Passage, off Porpoise Head; 17 fm [31 m]; dredged; J.C. Verco.

Paratypes (possible): F43234 (7 dry), previous no. G3234.

South Australia, Backstairs Passage, Newland Head; 20 fm [37 m]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll. The holotype designated in the description is untraced. The eight lots above are not labelled as types, but are considered possible paratypes by inference.

vittatus, *Paracyathus* Dennant, 1906: 156, pl. 5, figs 3a, b.

Holotype: F41514 (dry), previous no. G1514.

South Australia, Kangaroo Island, off Point Marsden; attached to fragment of shell [Pectinidae]; 17 fm [31 m]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll.

FLABELLIDAE

radiatus, *Rhizotrochus* Dennant, 1904: 2, pl. 1, figs 1a, b.

Holotype (possible): not traced

Paratypes (possible): F43243 (14 dry), previous no. G3243.

South Australia, Gulf St Vincent; dredged; J.C. Verco.

Paratypes (possible): F43245 (2 dry), previous no. G3245.

Victoria, Port Phillip Bay; dredged; J.B. Wilson.

Remarks: *ex* Dennant Coll. The holotype designated in the description is untraced. The two lots above are not labelled as

types, but are considered possible paratypes by inference.

tuberculatum, *Vasillum* Tenison-Woods, 1879: 93, pl. 10, figs 3, 3a, b.

Holotype: F59398 (dry), previous no. 43110.

Victoria, Port Phillip Bay or Bass Strait.

Suborder Dendrophylliina

DENDROPHYLLIDAE

atrata, *Dendrophyllia* Dennant, 1906: 163, pl. 6, figs 5a, b.

Syntype: F41517 (1 dry), previous no. G1517.

South Australia, Gulf St Vincent; dredged.

Syntype: F59349 (1 dry).

South Australia, Backstairs Passage; 22 fm [40 m]; dredged.

Remarks: *ex* Dennant Coll.

dilatata, *Balanophyllia* Dennant, 1904: 10, pl. 1, figs 2a, b.

Syntypes: F41512 (2 dry), previous no. G1512.

Victoria, Port Phillip Bay, on "the thallus of *Lithothamnion*" [= *Lithothamnium* sp.]; dredged; J.B. Wilson.

Remarks: *ex* Dennant Coll.

recta, *Notophyllia* Dennant, 1906: 163, pl. 5, figs 4a, b.

Syntypes: F41518 (3 dry), previous no. G1518.

New South Wales, 20 miles [32 km] NE of Port Jackson, 250 fm [458 m]; dredged; C. Hedley and W.F. Petterd.

Remarks: *ex* Dennant Coll.

Suborder Faviina

FAVIIDAE

proximans, *Plesiastrea* Dennant, 1904: 9, pl. 2, figs 3a, b.

Holotype (possible).

South Australia, Gulf St Vincent; dredged; 22 fm [40 m].

Remarks: type specimen not traced (see Appendix 1).

MUSSIDAE

incrustans, *Homophyllia* Dennant, 1906: 161, pl. 6, figs 3a, b.

Holotype: F41511 (dry), previous no. G1511.

South Australia, Gulf St Vincent; on "a valve of *Chione robotata*" [= *Placamen placida*]; dredged; R. Tate.

Remarks: *ex* Dennant Coll.

magna, *Cylicia* Tenison-Woods, 1878: 325, pl. 4, figs 3a–c.

Syntypes: F41522 (2 dry), previous no. G1522.

South Australia, Gulf St Vincent; R. Tate.

Remarks: *ex* Dennant Coll.

Order Zoanthinaria

EPIZOANTHIDAE

lividum, *Parazoanthus* Cutress, 1971: 89, text fig. 2, pl. 9, fig. 4.

Holotype: F41549 (EtOH), previous no. G1549.

Paratype: F41550 (1 EtOH), previous no. G1550.

Victoria, Port Phillip Bay, off Williamstown; on *Spirasterella* sp.; 29 Jun 1958; NMV Port Phillip Survey.

Remarks: type specimens not found (see Appendix 1).

sabulosum, *Epizoanthus* Cutress, 1971: 90, text fig. 3, pl. 9, fig. 3.

Holotype: F41551 (EtOH), previous no. G1551.

Victoria, Point Lonsdale; on sponge; 6 fm [11 m]; SCUBA; 15 May 1963; NMV Port Phillip Survey; Stn 293.

Remarks: type specimen not found (see Appendix 1).

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Appendix 1. - Missing types

The Museum of Victoria is presumed to hold in virtual entirety, the Bale and Trebilcock collections of hydroids and the Dennant collection of scleractinian corals. Type material of all species described by Bale or Trebilcock should be expected to be located in the Department of Invertebrate Zoology collection (except where otherwise denoted in their respective publications). The same may be said for type material of taxa described by Dennant, that should be expected to be found in either the Department of Invertebrate Zoology or Department of Invertebrate Palaeontology collections. Type materials of species described by Cutress (1971), stated as being deposited in the Museum, have not been located and their whereabouts are unknown.

Where type or possible type specimens of taxa described by Bale, Cutress, Dennant, Mulder and Trebilcock, and Trebilcock have not been located in the collections, they should be assumed to be missing. Such taxa with missing type specimens include the following :

Campanularia pumila Bale, 1914
Campanulina humilis Bale, 1924*
Plumularia indivisa Bale, 1882
Sertularella cylindrica Bale, 1888*
Sertularia acanthostoma Bale, 1882*
Sertularia recta Bale, 1882

Epizoanthus sabulosum Cutress, 1971
Isophellia stela Cutress, 1971
Parazoanthus lividum Cutress, 1971

Holcotrochus crenulatus Dennant, 1904*
Plesiastraea proximans Dennant, 1904
Sphenotrochus emarciatus perexigua Dennant, 1906

Plumularia campanula geelongensis Mulder and Trebilcock, 1916*
Plumularia dubiaformis Mulder and Trebilcock, 1911

Saaba scandens Trebilcock, 1928
Thecocarpus formosus inarmatus Trebilcock, 1928

For taxa labelled above with an asterisk (*) there exists additional material (from other than the presumed type locality) identified by authors in their own hand. Future workers could consider this material to assist in the identification of particular species. Details of such material, listed by species in alphabetical order, are as follows :

acanthostoma, *Sertularia* Bale, 1882 : 23, pl. 12, fig. 4
 F60230, F60231, F60232 (3 microslides).
 Victoria, Port Fairy [as "Belfast"].
 Remarks : ex Bale Coll. One slide is listed in Bale's Register, no. 100.
 F60233 (1 microslide).
 Victoria, Port Fairy.
 Remarks : ex Bale Coll.
 F60234 (dry).
 Victoria, Portland.
 remarks : ex Bale Coll.

crenulatus, *Holcotrochus* Dennant, 1904 : 3, pl. 2, figs 4a–c.
 F60235 (2 dry)

South Australia, Gulf St Vincent; dredged; J.C. Verco.

Remarks : *ex* Dennant Coll.

F60236 (10 dry)

South Australia, Kangaroo Island, Cape Borda; dredged; J.C. Verco.

Remarks : *ex* Dennant Coll.

cylindrica, *Sertularella* Bale, 1888 : 765, pl. 16, fig. 7

F60237 (1 microslide).

Victoria, Queenscliff; 27 Feb 1907.

Remarks : *ex* Bale Coll.

geelongensis, *Plumularia campanula* Mulder and Trebilcock, 1916 : 76, pl. 11, figs 2, 2a-c.

F60238, F60239 (2 microslides).

Victoria, Thompson's Creek [near Torquay] [as "Bream Creek"].

Remarks : *ex* Trebilcock Coll. Reclassified by Trebilcock as *Orthopyxis geelongensis*.

humilis, *Campanulina* Bale, 1924 : 235, text fig. 5

F60240 (1 microslide).

Victoria, Port Phillip Bay, Schnapper Point; on *Halicornaria baileyi*.

Remarks : *ex* Bale Coll.

recta, *Sertularia* Bale, 1882 : 23, pl. 12, fig. 5.

F60241, F60242 (2 microslides).

Bass Strait.

Remarks : *ex* Bale Coll.

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Australian fossil echinoids: annotated bibliography and list of genera and species

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Abstract. Holmes, F. C. (1993). Australian fossil echinoids: annotated bibliography and list of genera and species. *Occasional Papers from the Museum of Victoria* 6: 27–54.

Over 330 references to papers and other manuscripts containing taxonomic and locality information on Australian fossil echinoids are listed in a comprehensive annotated bibliography. Based on this information a separate list of genera and species records 167 echinoid taxa from the continent's marine deposits, excluding undescribed new species listed by Philip (1970).

Introduction

Since the turn of the century, only three general bibliographies have been published which include comprehensive lists of references to the literature of Australian fossil echinoids. They are by Dennant and Kitson (1903), H. L. Clark (1946), and Philip (1963a). None of these bibliographies is annotated and only the last relates solely to the Echinoidea.

This annotated bibliography and list of genera and species does not include references to extant species, except those containing the original description (or illustration) of species which have subsequently been discovered in the Australian fossil record; e.g. Leske (1778), Blainville (1825), Valenciennes (1846), Gray (1851), Mortensen (1904). Unpublished reports and university post-graduate theses are excluded. However, non-taxonomic references which contain faunal lists, illustrations or records of echinoids occurring at specific localities are included.

Many references, notably those from the nineteenth century, give only very general locality information and often no indication of the horizon in which the fossils were found, thus making it extremely difficult to determine their correct geological age.

While further collecting, together with current stratigraphic knowledge, can solve many of these problems, there are several references to the occurrence of fossil echinoids which remain suspect, either because of poor or wrong locality information in the first instance or by errors that have crept into subsequent (secondary) references. The annotated 'description of contents' of each reference in the bibliography, where applicable, lists the published generic and specific names, locality names, age and spelling used, as well as page and plate numbers. The abridged synonymy contained in the alphabetical list of genera and species should be used to determine the currently accepted binomial nomenclature.

Although some references contain material repeated from previous papers by the same author or extracts from another author's work, they have been included for consistency and to direct researchers to a wide range of associated information.

Historical note

The history of discovery and subsequent description of fossil echinoids in Australia, from the first record of their occurrence in the Murray River cliffs by Captain Charles Sturt (1833) up to the late 1950s, has been well documented by Philip (1963a).

Between the late 1860s and the beginning of this century, a

large volume of literature was published on Australian palaeontology including many important papers on the echinoid fauna by Bittner, Duncan, Etheridge, Gregory, Hall, Laube, McCoy, Tate and others. While much of the original nomenclature given to these early discoveries has been changed over the years, often because of the poor preservation of detail in many of the originally described specimens, their work forms an invaluable basis for the current revision of most major families and genera found in Australia.

From 1910 until the early 1960s, with the exception of Chapman and Cudmore (1928, 1934), work on Tertiary echinoids was virtually non-existent in this country. Even *The echinoderm fauna of Australia. Its composition and its origin* (H. L. Clark, 1946) relies almost entirely on pre-1900 literature for its information on fossil species. It is only in the last 30 years or so that palaeontologists such as Foster, Kruse, McNamara and Philip have begun to systematically update knowledge of Australian fossil echinoids. Major papers cover the revision of brissids, hemiasterids, holasterids, and schizasterids, as well as species of the genera *Echinolampas*, *Eupatagus* and *Pericosmus*, among others. In addition, between 1963 and 1969, Philip recorded 53 species of regular echinoids in a series of four papers on the Tertiary echinoids of south-eastern Australia.

Groups yet to be revised include the clypeasteroids and non-echinolampadid cassiduloids. In addition, a considerable number of new species await description.

Annotated bibliography and chronological index of authors

Plate and figure numbers are not included in the main reference if they have been allotted page numbers in the manuscript.

All references, unless otherwise stated, have been compiled from original or facsimile manuscripts.

The annotated 'description of contents' lists relevant information as published. Comments or notes on the contents of manuscripts are included in square brackets and use currently accepted nomenclature.

To assist with research into the synonymy and discovery of Australian echinoids, a chronologically arranged index of authors is provided at the end of the annotated bibliography.

Abele, C., 1976. Revision of Tertiary rock unit nomenclature in the Maude area, Victoria. *Mines Department, Victoria, Geological Survey Report 1976/2*: 1–6 + figs 1, 2, 4.

- Refers to echinoids (including *Fibularia*) in the Lower Maude Limestone Member (p. 2).
- Abele, C., 1979. Geology of the Anglesea area, central coastal Victoria. *Geological Survey of Victoria Memoir* 31: 1–71, fig. 7, map.
- Refers to echinoids in descriptions of specific units within various stratigraphic sections between Yellow Bluff, Torquay and Split Point, Aireys Inlet (pp. 21, 23, 25, 26, 27, 30, 32) and in general notes on Demons Bluff Fm., Anglesea Member (p. 42); Jan Juc Fm. (p. 44); Puebla Fm., Zeally Limestone Member (p. 47). Also lists characteristic echinoids from the undifferentiated part of the Jan Juc Formation, the Point Addis Limestone Member and the Zeally Limestone Member (p. 49). [Note: the latter is a repeat of information given in Singleton, 1968 and 1973.]
- Abele, C., 1988a. Mesozoic and Cainozoic stratigraphy of Victoria. Pp. 39–46 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).
- Refers to characteristic Tertiary echinoid assemblages in calcarenite from southern basins (p. 42) and notes [with other groups], although biostratigraphically significant, they have not been fully described (p. 43). Figures *Lovenia forbesi* from Murray cliffs (pls 4–1/b, c).
- Abele, C., 1988b. Western District: Torquay-Anglesea-Aireys Inlet. Pp. 119–131 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).
- Notes occurrence of echinoids in the Zeally Limestone Member (pp. 123–124).
- Abele, C. et al., 1976. Tertiary. Pp. 177–274 in J. G. Douglas and J. A. Ferguson (eds), *Geology of Victoria* (first edition). *Geological Society of Australia, Melbourne, Special Publication* 5.
- Includes numerous references to the occurrence of echinoids, including spines and fragments, in various stratigraphic horizons in the Tertiary of Victoria, many of which are little known (pp. 179, 195(2), 196(2), 210, 211(2), 213(2), 214(2), 222(2), 233, 234(3), 235(2), 239, 242, 258(2), 259, 260(5), 261, 262). *Clypeaster gippslandicus* McCoy is figured on p. 249. [Note: information repeated in Abele, C. et al., 1988.]
- Abele, C. et al., 1988. Tertiary. Pp. 251–350 in J. G. Douglas and J. A. Ferguson (eds), *Geology of Victoria* (second edition). Victorian Division, Geological Society of Australia Incorporated: Melbourne.
- Includes numerous references to the occurrence of echinoids, including spines and fragments, in various stratigraphic horizons in the Tertiary of Victoria, many of which are little known (pp. 253, 269(2), 270(2), 284, 285(2), 287(2), 288(2), 296(2), 307, 308(3), 309(2), 313, 316, 332(2), 333, 334(5), 335, 336). *Clypeaster gippslandicus* McCoy is figured on p. 323. [Note: text references do not vary (other than page numbers) from those in Abele, C. et al., 1976]
- Anon. (Holmes, F. C.), 1981. Some common irregular echinoids from the Point Addis Limestone and Jan Juc Marl, Torquay, Victoria. *The Fossil Collector* 4: 10–12.
- Brief note on the occurrence of echinoids in the above members with figures of *Echinolampas posterocrassus*, *Cassidulus florensens*, *Eupatagus murrayensis*, *Duncanaster australiae*, *Monostychia australis*.
- Archbold, N. W., 1990. J. E. Tenison Woods: His contributions to the Tertiary geology of south eastern Australia. *Journal and Proceedings of the Royal Society of New South Wales* 122(3): 119–121.
- Refers to the confusion as to the authorship of *Lovenia forbesi* (p. 119) and includes copies of the illustrations of *Lovenia* by Sturt (1833), Forbes (1852) and Tenison Woods (1862), p. 121, text fig. A–E.
- Aslin, D., 1980. The *Lovenia* question—*forbesi* or *woodsii*. *The Fossil Collector* 2: 9–12.
- Discusses and illustrates the difference between *Lovenia forbesi* and *L. woodsii*.
- Baker, G., 1943. Eocene deposits south-east of Princetown, Victoria. *Proceedings of the Royal Society of Victoria* 55(2): 237–254, pl. 10.
- Refers to the presence of *Schizaster* in (?) Eocene deposits between the Pebble Point Beds and Pleistocene dune limestone south-east of Princetown, Victoria (p. 245).
- Baker, G., 1944. The geology of the Port Campbell District. [Includes Appendix - The foraminifera of the Tertiary beds exposed in the coastal sections between the mouth of the Gellibrand River and Curdie's Inlet, by W. J. Parr]. *Proceedings of the Royal Society of Victoria* 56(1): 77–108.
- Lists echinoids on pp. 88, 89, 91–94 including *Paradoxechinus novus* Laube, *Lovenia forbesi* Tenison Woods, *Schizaster sphenoides* Hall, *Brissopsis tatei* Hall, *Maretia anomala* Duncan, *Eupatagus laubei* Duncan, *Linthia compressa* (Duncan), *Clypeaster* cf. *gippslandicus* McCoy, and echinoid spines.
- Bartrop, S., 1983. Australian fossil spatangoid echinoids. Pp. 691–755 in P. V. Rich, R. K. Bearlin and D. M. Long (eds), *A Pot-Pourri of Australian Fossils (Invertebrates and Plants)*, volume 2. Clayton, Victoria [no publisher stated].
- One of a series of reports compiled by 3rd year students, Earth Sciences Department, Monash University, Clayton. Includes numerous abridged descriptions accompanied by figures reproduced from earlier manuscripts.
- Basedow, H., 1901. On the occurrence of Miocene limestones at Edithburgh, and their stratigraphical relationship to the Eocene of Wool Bay, with description of a new species by Professor R. Tate. *Transactions and Proceedings and Report of the Royal Society of South Australia* 25: 145–148, pl. 3.
- Notes *Fibularia gregata*, *Scutellina patella* and *Paradoxechinus novus* in polyzoal limestone a quarter of a mile north of Edithburgh, Yorke Peninsula (p. 145). Also refers to *Fibularia gregata* and other echinoids in a well section one and a quarter miles west of the town (p. 147).
- Beardsmore, T., 1983. Echinoids: Australian varieties and their biostratigraphic use. Pp. 647–690 in P. V. Rich, R. K. Bearlin and D. M. Long (eds), *A Pot-Pourri of Australian Fossils (Invertebrates and Plants)*, volume 2. Clayton, Victoria [no publisher stated].
- One of a series of reports compiled by 3rd year students, Earth Sciences Department, Monash University, Clayton. Includes a few abridged descriptions accompanied by figures.
- Bell, K. N., 1991. Fossil pedicellariae. *The Fossil Collector* 34: 27–29.
- Notes the discovery of several tridentate pedicellariae (possibly of echinoid origin) in a recent study of acid-digested limestones and marly-limestones from the Buchan Caves Limestone and Taravale Formation (Early Devonian) in the Buchan-Bindi area of eastern Victoria (p. 28).
- Bittner, A., 1892. Über echiniden des Tertiärs von Australien. *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften zu Wien (math. naturw. Classe)* 101(1): 331–371, pls 1–4.
- Describes and figures *Coptechinus pulchellus* sp. nov. (p. 342, pl. 1/5); *Cyclaster lycoperdon* sp. nov. (p. 360, pl. 4/1–2); *Fibularia gregata* var. *orbiculus* var. nov. (p. 347, pl. 2/1); *Fibularia Tatei* sp. nov. (p. 348, pl. 2/3); ? *Psammechinus humilior* sp. nov. (p. 337, pl. 1/3); *Psammechinus woodsii* var. *fasciger* var. nov. (p. 336, pl. 1/2) and *Progonolampas novae-hollandiae* gen. et sp. nov. (p. 357, pl. 3/1). Erects new genus *Australanthus* for *Cassidulus longianus* (p. 350, pl. 3/2); uses *Euspatangus* [nom. van.] for *Eupatagus murrayensis* and *E. rotundus* (p. 365) and retains the genus *Sarsella* Pomel, 1883 for *Lovenia Forbesii* (p. 364). Erects new genus *Tristomanthus* for *Catopygus elegans* (p. 355, pl. 4/3); notes and figures *Coptechinus lineatus* (p. 338, pl. 1/4); *Fibularia gregata* (p. 347, pl. 2/2); *Hemistaster planedclivis* (p. 366, pl. 2/4); *Holaster australiae* (p. 359, pl. 3/3), *Monostychia australis* and *M. elongata* (p. 345, pl. 2/5–9); *Paradoxechinus novus* (p. 344, pl. 4/4), *Psammechinus* cf. *Woodsii* (p. 334, pl. 1/1) and *Salenia tertiaria* (p. 333, pl. 1/6–7); notes *Cardiaster tertiarius* (p. 360); *Clypeaster gippslandicus* (p. 347) and *Echinolampas* cf. *posterocrassa* (p. 356).
- Blainville, H. M. D. de, 1825. OURSIN, *Echinus* (Actinozoaires). Pp. 59–98 (French) in F. G. Levault (ed.), *Dictionnaire des Sciences Naturelles suivi d'une biographie des plus célèbres Naturalistes par plusieurs Professeurs du Jardin du Roi, et des principales École de Paris* 37.
- Describes *Echinus* [= *Echinometra*] *mathaei* sp. nov. (p. 94), an extant species subsequently recorded as a fossil in the Tamara Limestone (Late Pleistocene) at Cape Burney, Western Australia (McNamara, 1992).
- Bock, P. E. and Glenie, R. C., 1966. Late Cretaceous and Tertiary depositional cycles in south-western Victoria. *Proceedings of the Royal Society of Victoria* 79(1): 153–163 + fig. 1.
- Table of diagnostic features of the major stratigraphic units lists echinoids as part of the fossil fauna of the Port Campbell Limestone and Clifton Formation (p. 155 – fig. 2). Also refers to echinoids as part of the macro-

- fauna of the Port Campbell Limestone in description of depositional Cycle 4 (p. 161).
- Bolger, P., 1988. Western District: Geelong-Brisbane Ranges. Pp. 109–118 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).
- Notes occurrence of echinoids in the Lower and Upper Maude Limestones (p. 116); Batesford Limestone (p. 117); Fyansford Formation (p. 118).
- Bowler, J. M., 1963. Tertiary stratigraphy and sedimentation in the Geelong-Maude area, Victoria. *Proceedings of the Royal Society of Victoria* 76(1): 69–137, pls 15–18.
- Refers to the abundance of the small echinoid *Fibularia* in the Lower Maude Limestone at the Maude school section (p. 75); notes the lithology of the Batesford Limestone consists of accumulated skeletal fragments of polyzoa, echinoids, pelecypods, foraminifera and other organisms (p. 91).
- Brighton, A. G., 1929. Tertiary irregular echinoids from the Chatham Islands, New Zealand. *Transactions and Proceedings of the New Zealand Institute* 60(2): 308–319, pl. 30.
- Remarks on '*Cardiaster*' *tertiarius* Gregory, 1890 (pp. 315, 317–318) and figures part of plate structure (p. 318, text fig. 18/a–b). [Note: Paper describes and figures *Apatopygus* aff. *recens* (Milne Edwards), p. 308, pl. 30/1–5, text figs 1–7, a fossil from the north end of Red Bluff, 6 miles N. of Waitangi (Te Wanga Series). A Late Oligocene age is suggested for this Series (p. 318). [It has not been compared with the Australian species *A. vincentinus*.]
- Brighton, A. G., 1930. A Tertiary irregular echinoid from the Chatham Islands, New Zealand. *Transactions and Proceedings of the New Zealand Institute* 60(4): 565–570.
- Compares a single specimen of *Echinolampas* from the Chatham Islands with Australian species of the genus and notes likeness to *E. posterocrassa* (p. 569).
- Brown, G. M. and Stephenson, A. E., 1991. Geology of the Murray Basin southeastern Australia. *Bureau of Mineral Resources, Geology and Geophysics, Bulletin* 235: 1–430.
- Contains numerous general references to the presence of echinoids in the various formations and members within the Murray Basin, including some figures showing the predominance of various 'fossil types' based on the number of recorded genera present (p. 127, fig. 66; p. 130, fig. 69; p. 135, fig. 72; p. 140, fig. 76). Also contains an extensive list of references. Appendix 6, lists macrofossils by generic name under 'type' and stratigraphic unit (pp. 426–430). [Note: lists are far from complete and contain many errors, including generic names no longer associated with Australian fossil echinoid species.]
- Brown, H. Y. L., 1910. *Report on the geology of the country South and East of the Murray river: with special reference to the subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways*. Government Printer: Adelaide. 7 pp. + fold. map.
- Lists *Fibularia gregata*, *Scutella patella*, *Lovenia forbesi*, as characteristic Eocene fossils (p. 4).
- Brown, I. A., 1964. A new cystoid (Pelmatzoa, Echinodermata) from the Silurian of New South Wales. *The Proceedings of the Linnean Society of New South Wales for the year 1963*, 88(3): 386–391, pl. 21.
- Raises doubts about the determination by Mitchell (1897) of a fragment of an echinoderm from Bowning, N.S.W., described as *Palaechinus* sp. Considers the specimen [figured] could be portion of a cystoid such as *Holocystites* (*Megacystites*) *cylindricus* (Hall) from the Silurian of North America (pp. 386–387, pl. 21/D).
- Brown, I. A., 1967. A Devonian echinoid from Taemas, south of Yass, N.S.W. *Proceedings of the Linnean Society of New South Wales* 92(2): 157–161, pl. 4.
- Describes and figures *Cavanechinus warreni* gen. et sp. nov., from the Cavan Bluff Limestone, Murrumbidgee Series (Middle Devonian), near Taemas Bridge, Burrenjack Dam, south of Yass, New South Wales (p. 160, pl. 4/15).
- Brunnschweiler, R. O., 1956. [Identification of fossils]. Pp. 1–86 in M. A. Condon, D. Johnstone, C. E. Pritchard, and M. H. Johnstone, *The Giralia and Marrilla anticlines, North West Division, Western Australia*. *Bulletin of the Bureau of Mineral Resources, Geology and Geophysics* 25.
- Lists echinoids from Wadera Calcarenite (p. 32), Pirie Calcarenite (p. 37), Cashin Calcarenite (p. 40). Also notes echinoids found in Jubilee Calcarenite, Giralia Calcarenite, Mandu Calcarenite, Tulki Limestone and Pleistocene marine marls and muds.
- Brunnschweiler, R. O., 1961. On echinoids in the Tertiary of Western Australia with a description of two new Eocene Fibulariidae. *Journal of the Geological Society of Australia* 8(2): 159–169.
- Describes and figures *Cyamida paucipora* sp. nov. (p. 162, text fig. 1); *Lenicyamida compta* gen. et sp. nov. (p. 165, text figs 2–3); both from Merlinleigh Sandstone, North West Division, W.A. Places *Conoclypus westraliensis* Cressin, 1943, in the genus *Hypoclypus* [now regarded by Kier (1966) as a junior synonym of *Echinolampas*]. Refer Philip (1966) for comment on the genus *Lenicyamida*.
- Carmichael, E., 1976. Southern area. Pp. 38–50 in D. Corbett (ed.), *A Field Guide to the Geology of Yorke Peninsula*. Field Geology Club of South Australia Inc: Adelaide.
- Notes echinoderms including "small specimens of two species of the heart urchin *Lovenia*" on the foreshore beach at Stansbury (p. 43).
- Carmichael, E., 1986. Maslin Bay to Snapper Point. Pp. 35–48 in P. Hasenohr and D. Corbett (eds), *A Field Guide to the Coastal Geology of Fleurieu Peninsula*. The Field Geology Club of South Australia Inc: Adelaide.
- Notes abundant remains of fossil Echinodermata (sea urchins, starfish etc.) to be found at Maslin Beach; illustrates *Echinolampas posterocrassus* (p. 43).
- Carroll, D., 1949. Mineralogy of the Cheltenhamian beds at Beaumaris, Victoria. *Journal of Sedimentary Petrology* 19(3): 104–111.
- Notes large numbers of *Lovenia forbesi* occur at certain horizons in the lower part of the ferruginous beds (p. 105). [Note: *Lovenia* species present is *L. woodsii* not *L. forbesii*.]
- Carter, A. N., 1963. Appendix 4 - The identity and age of the Portland *Lovenia*. P. 166, pl. 27 in N. Boutakoff, *The Geology and geomorphology of the Portland Area*. *Memoirs of the Geological Survey of Victoria* 22.
- Compares *Lovenia woodsii* from Portland with topotype from Beaumaris and specimens from Peterborough, Victoria. Figures both *L. forbesi* and *L. woodsii* (pl. 27).
- Carter A. N., 1985. A model of depositional sequences in the late Tertiary of southeastern Australia. Pp. 13–27 in J. M. Lindsay, (ed.), *Stratigraphy, palaeontology, malacology: papers in honour of Dr Nell Ludbrook*. *Department of Mines and Energy, South Australia, Special publication* 5.
- Notes occurrence of '*Arachnoides*' *incisa* between Metung and Swan Reach and mollusc and echinoid fauna in shallow quarry (bed overlying Bairnsdale Limestone) at Bellevue, near Bairnsdale (p. 16); *Lovenia woodsii* and '*Arachnoides*' *incisa* at Beaumaris (p. 17).
- Chapman, F., 1907. Newer Silurian fossils of eastern Victoria, Part 1. *Department of Mines, Records of the Geological Survey of Victoria* 2(1): 67–80, pls 1–7.
- Refers echinoid spines, found in the Tyers River Limestone (Silurian), Victoria, to the genus (?) *Palaechinus* (Scouler) McCoy (p. 77, pls 4/9, 7/16). Also refers to a single interambulacral plate in the Melbourne National Museum [Museum of Victoria] collection, from Springfield, Victoria, having been generically determined by McCoy as *Palaechinus* (p. 77). [Note: Philip (1962) states that Chapman's specimens could not be found, consequently, based solely on the photographs, the presence of ? *Palaechinus* spines is queried.]
- Chapman, F., 1908. New or little known Victorian fossils in the National Museum. Part 9: some Tertiary species. *Proceedings of the Royal Society of Victoria* 20(2): 208–221, pls 17–19.
- Comments on 6 specimens of *Studeria elegans* (Laube, 1869) from Spring Creek, Torquay, and also notes their occurrence from near the mouth of the Glenelg River and at Apsley, Victoria (p. 214); notes and figures *Linthia antiaustralis* Tate, 1885, from Curlewis (p. 215, pl. 19/1–3); notes *Maretia anomala* Duncan, 1877, from Beaumaris (p. 216); and *Eupatagus rotundus* Duncan, 1877, from Muddy Creek (p. 217).
- Chapman, F., 1910. A study of the Batesford Limestone. *Proceedings of the Royal Society of Victoria* 22(2): 263–314, pls 52–55.
- Refers to *Echinoneus* (p. 301), but does not include it in the faunal schedule of echinodermata (p. 305); comments on the genus *Linthia* (p. 309).

- Chapman, F., 1912. Notes on a collection of Tertiary limestones and their fossil contents, from King Island. *Memoirs of the National Museum of Melbourne* 4: 39–53, pls 6–7.
Notes *Cidaris (Leiocidaris)* cf. *australiae* Duncan (p. 44) and spines of echinoids (p. 45, pl. 7/5a) from limestone outcropping at Seal River in the extreme S.E. of the island.
- Chapman, F., 1913. Description of new and rare fossils obtained by deep boring in the Mallee. Part 1: Plantae; and Rhizopoda to Brachiopoda. *Proceedings of the Royal Society of Victoria* 26(1): 165–191, pls 16–19.
Notes and figures *Goniocidaris* sp. spine (p. 181, pl. 18/22) and *Echinocyamus (Scutellina) patella* Tate (p. 181, pl. 18/23). [Note: latter figure shows a marsupium!].
- Chapman, F., 1914a. On the succession and homotaxial relationships of the Australian Cainozoic system. *Memoirs of the National Museum of Melbourne* 5: 5–52.
Notes the significance of some cosmopolitan and widely distributed fossil echinoids (pp. 16–17) with specific reference to Victorian echinoids at Flinders (p. 33), Bairnsdale (p. 35), Corio Bay (p. 36) and in pink limestone at Grangeburn, near Hamilton (pp. 43, 47).
- Chapman, F., 1914b. *Australasian Fossils*. George Robertson and Co., Melbourne and London. 341pp.
Includes generalised summary of the Echinozoidea (pp. 143–151) and figures *Linthia antiaustralis* Tate (text fig. 28, p. 60); *Cidaris (Leiocidaris) australiae* Duncan, *Psammechinus woodsi* Laube, *Fibularia gregata* Tate, *Echinocyamus (Scutellina) patella* Tate, *Clypeaster gippslandicus* McCoy and *Studeria elegans* Laube (text fig. 80A–F, p. 145); *Hemiasiter planedichvis* Gregory, *Schizaster sphenoides* T.S.Hall and *Lovenia forbesi* Tenison Woods (text fig. 81A C, p. 147).
- Chapman, F., 1915. Appendix 2. Report on a collection of fossils made by Dr A. Wade from the Cainozoic series of South Australia. Pp. 44–50 in A. Wade, The supposed oil-bearing areas of South Australia. *Geological Survey of South Australia Bulletin* 4.
Lists fossils from four localities including echinoids from Hildersheim, near Mannum, North West Bend of Murray River, South Australia (p. 44), and Kingscote, Kangaroo Island (pp. 46–47).
- Chapman, F., 1916a. On some smaller fossils from the red limestone of Grange Burn, near Hamilton, with a note on a new species of *Bolivina*. *The Victorian Naturalist* 32: 144–146.
Notes presence of Janjukian forms such as *Linthia mooraboolensis* (p. 144); also spines of a cidaroid indet (p. 145).
- Chapman, F., 1916b. Cainozoic geology of the Mallee and other Victorian bores. *Records of the Geological Survey of Victoria* 3(4): 327–430, pls 63–78.
Notes large number of moderate sized fossil shells including the echinoids *Scutellina* and *Psammechinus* were obtained from the bores in perfect condition (p. 328). Records numerous occurrences of echinoids in details of Mallee bores 1–11 (pp. 331–375) and lists species found as *Cidaris* sp., *Goniocidaris* sp., *Paradoxechinus novus*, *Psammechinus woodsi*, *Echinocyamus (Scutellina) patella*, *Fibularia gregata*, *Clypeaster gippslandicus*, *Arachnoides (Monostychia) australis*, *Echinoneus dennanti*, *Linthia* sp., *Lovenia forbesi* and echinoid test fragments and spines, indet (p. 377). Notes *Echinocyamus (Scutellina) patella* and *Echinoneus dennanti* as noteworthy “Janjukian” species found in the borings (p. 386). Records *Arachnoides (Monostychia)* cf. *australis* from bore at Maryvale, 12 miles from Goroke, Victoria (p. 394); *Lovenia forbesi* from Nhll No. 51 bore (p. 395); *Fibularia gregata* Tate, *Scutella marsupiata* sp. nov. [nomen nudum] - probably = *Echinocyamus (Scutellina) patella* Tate sp., marsupiate variety, and *Echinolampas murrayanus* Laube from Croydon bore, 3.5 miles from Adelaide (fossils listed by Prof. Tate), p. 399; and *Lovenia woodsi* from the Portland Bore (p. 401). Figures *Goniocidaris* sp. spine (pl. 65/22) and *Echinocyamus (Scutellina) patella* Tate sp. showing marsupiate (pl. 65/23).
- Chapman, F., 1920. Notes on a collection of Tertiary fossils from Ooldea and Watson, South Australia. *Proceedings of the Royal Society of Victoria* 32(2): 225–245.
Records a fragmentary test of ? *Laganurn* sp. from near Ooldea on the Trans Australia Railway line, Nullarbor Plain, S.A. (pp. 234, 243).
- Chapman, F., 1921. Report of an examination of material obtained from a bore at Torquay. *Records of the Geological Survey of Victoria* 4(3): 315–324, pl. 51.
Records echinoid spines and plates at various levels in a 70 feet deep bore near Bird Rock, Torquay (pp. 318–319). Schedule of fossils (pp. 322–324).
- Chapman, F., 1923. On a cast of a fossil sea-urchin from the red sands of Studley Park, Kew. *The Victorian Naturalist* 39, 158–159, pl. 4.
Refers to a fossil considered cf. *Lovenia* of Kalimnan age [Note: Philip (1963) refers to this as a pebble!].
- Chapman, F., 1926. Geological notes on Neumerella and the section from Bairnsdale to Orbost. *Proceedings of the Royal Society of Victoria* 38: 125–142, pl. 10.
Schedules fossils collected at Neumerella [near Orbost] including the echinoids *Cidaris (Leiocidaris) australiae* Duncan, *Paradoxechinus novus* Laube, *Clypeaster gippslandicus* McCoy, *Arachnoides (Monostychia) australis* Laube, A. (M.) *australis* var. *elongata* Duncan, *Eupatagus murrayensis* Laube (p. 130). Refers also to echinoids in text (p. 127).
- Chapman, F., 1928. The Sorrento Bore, Mornington Peninsula, with description of new or little-known fossils. *Records of the Geological Survey of Victoria* 5(1): 1–195, pls 1–12.
Describes bore cores and contents (pp. 7–86); lists echinoids, including *Goniocidaris prunispinosa*, *G. pentaspinosa* and *Echinocyamus (Scutellina) patella*, and records depths at which they were found (p. 146); notes Echinodermata present and gives stratigraphic horizons (p. 175); lists new species [refer Chapman, F. and Cudmore, F. A., 1928, for description], p. 183.
- Chapman, F., 1934. *The Book of Fossils*. Shakespeare Head Press Ltd : Sydney. 126 pp.
Brief reference to Australian “Sea-urchins” (pp. 102–103); figure of *Lovenia forbesi* (fig. 37C).
- Chapman, F. and Crespin, I., 1926. Preliminary notes on the fauna and age of the Plantagenet Beds of Western Australia. Pp. 319–322 in L. K. Ward (ed.), *Report of the seventeenth meeting of the Australian Association for the Advancement of Science. Australia and New Zealand. Adelaide meeting, August, 1924*.
Refers to *Linthia compressa* McCoy sp. at Cape Riche (p. 321) and notes it a restricted form typical of the Janjukian (p. 322). [Refer also Chapman and Crespin, 1934].
- Chapman, F. and Crespin, I., 1934. The palaeontology of the Plantagenet Beds of Western Australia. *Journal of the Royal Society of Western Australia* 20: 103–136
Includes four echinoid genera (two each from Albany and Cape Riche) in the list of fossils from the Plantagenet series (p. 126).
- Chapman, F. and Crespin, I., 1935. The sequence and age of the Tertiaries of southern Australia. Pp. 118–126 in G. W. Leeper (ed.), *Report of the twenty-second meeting of the Australian and New Zealand Association for the Advancement of Science. Melbourne meeting, January 1935*.
Refers to *Eupatagus rotundus* and *Linthia mooraboolensis* from Grange Burn, near Hamilton, Victoria (p. 124); *Fibularia gregata* from Troubridge Hill and *Echinolampas 'gambierensis'* from Kingscote, South Australia (p. 125). [Note: contains useful references to numerous Tertiary localities.]
- Chapman, F. and Cudmore, F. A., 1928. Phylum Echinodermata, Class Echinozoa. In F. Chapman and I. Crespin, Description of new or rare species, in F. Chapman, The Sorrento Bore, Mornington Peninsula, with description of new or little-known fossils. *Records of the Geological Survey of Victoria* 5(1): 90–92, pls 11/73a–1, 74a–g.
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- Clark, H. L., 1946. The echinoderm fauna of Australia, its composition and its origin. *Carnegie Institution of Washington, Publication* 566, 567 pp. [Echinoidea, 277-382].
Details fossil and extant Echinoidea known at the time (pp. 277-382) with synonymy, background information and some description [contains a few anomalies such as listing *Lovenia forbesi* but not *L. woodsii*]. Places *Echinobrissus australiae* Duncan, 1877, and *E. vincentinus* Tate, 1891, in the genus *Nucleolites*. Includes a very comprehensive bibliography (pp. 499-522).
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- Cotteau, G., 1889. Échinides nouveaux ou per connus (8th. article). *Mémoires de la Société Zoologique de France* 2(2): 321-332, pls 14-15 (French).
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- Daily, B., Milnes, A. R., Twidale, C. R. and Bourne, J. A., 1979. Geology and geomorphology. Pp. 1-38 in M. J. Tyler, C. R. Twidale and J. K. Ling (eds), *Natural History of Kangaroo Island*. Royal Society of South Australia Inc.
Notes *Australanthus longianus* occurring at Kingscote in bryozoal limestones rich in echinoderms (p. 29, fig. 32a, b). [Other sections of the book refer to extant echinoids].
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Refers to several echinoid genera in the South Australian Miocene fauna (p. 177). [Note: information repeated in Davies, A. M., 1975]

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- Lists fossils, including several echinoids, from Grange Burn near Hamilton, Dry Creek north of Nelson; Crawford River; Border quarries near Apsley (pp. 442–443). Also refers to *Hemister forbesii* at Portland (p. 445).
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- Lists *Arachnoides* sp. (p. 61) and notes *Clypeaster gippslandicus* among fossils collected on the banks of the Mitchell River (p. 65).
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- Lists fossils found in a road cutting at Swan Reach (incl. *Clypeaster gippslandicus*), p. 131; and from roadside near Nicholson River (incl. *Cidaris* sp. spines), p. 134. Additions and corrections to catalogue of fossils (Dennant 1891a) includes *Arachnoides incisa* Tate (p. 139).
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- Schedules fossils from various localities along the lower Mitchell River which include occasional references to echinoids, in particular "Bellevue" (*Lovenia forbesi*), p. 23, and "Skinner's and Drier's" (*Clypeaster gippslandicus*, *Eupatagus murrayensis*, *Monostychia australis* and *Echinolampas* sp.), p. 42.
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- Notes *Cidaris* sp. spines at Dog Island section of limestone (p. 64); lists 'Eocene' fossil echinoids collected, namely *Paradoxechinus novus*, *Schizaster abductus*, *Lovenia forbesi* and *Goniocidaris* sp. (p. 86); notes *Schizaster abductus* in a narrow gully close to the township of Shelford (p. 88).
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- Describes and figures *Hemipatagus forbesi* Woods and Duncan [= *Lovenia*], p. 165, pl. 6/3a–d; refers to *Clypeaster folium* Agassiz, var. with a marginal periproct (not illustrated) from Muddy Creek [?], the Murray, South Australia (p. 166); and *Schizaster* in the Adelaide Tertiaries (p. 168). [Note: drawing (pl. 6/3a–d) is of *Lovenia woodsii* not *L. forbesii*].
- Duncan, P. M., 1870. On the fossil corals (Madreporaria) of the Australian Tertiary deposits. *Quarterly Journal of the Geological Society of London* 26(3): 284–318, pls 19–21.
- Notes the common echinoderm of the Tertiaries as *Hemipatagus Forbesii* Woods and Duncan (p. 285). In a review of the distribution of Tertiary fossiliferous deposits, refers to *Spatangus Forbesii* (*Hemipatagus Forbesii*) at Spring Creek (p. 290) and Curdie's Inlet (p. 294), Victoria.
- Duncan, P. M., 1877. On the Echinodermata of the Australian Cainozoic (Tertiary) deposits. *Quarterly Journal of the Geological Society of London* 33(1): 42–73, pls 3–4.
- Schedule (p. 44) lists 24 species. Describes and figures *Leiocidaris australiae* sp. nov. (p. 45, pl. 3/1–2); *Temnechinus lineatus* sp. nov. (p. 46, pl. 3/3–5); *Arachnoides loveni* sp. nov. (p. 47, pl. 3/6–7); *Arachnoides elongatus* sp. nov. (p. 48, pl. 3/8); *Rhynchopygus dysasteroides* sp. nov. (p. 49, pl. 3/9–10); *Echinobrissus australiae* sp. nov. (p. 50, pl3/11); *Holaster australiae* sp. nov. (p. 51, pl. 3/12–13); *Maretia anomala* sp. nov. (p. 52, pl. 4/1–4); *Eupatagus rotundus* sp. nov. (p. 53, pl. 3/14–17); *Eupatagus laubei* sp. nov. (p. 55, pl. 3/18); *Megalaster compressus* gen. et sp. nov. (pp. 61–62, text fig. 1). Notes and figures *Lovenia forbesi* Woods and Duncan (p. 59, pl. 4/5–8); describes, but does not figure, *Lovenia forbesi* var. *minor* (p. 59); refers *Schizaster* from Adelaide district to *S. ventricosus* Gray, a recent form (pp. 61, 68). Notes *Echinanthus testudinarius* Gray (p. 46), *Arachnoides australis* Laube (p. 48) *Pygorhynchus vassali* Wright and *Catopygus elegans* Laube (p. 51). Schedule (pp. 62–63) lists Australian Tertiary and Recent echinoids; schedule (p. 63) lists species common to the Cainozoic (Tertiary) and Recent faunas. Remarks on species (pp. 64–68).
- Duncan, P. M., 1878. On the Salenidae, Wright - Part 3. On a third form of Recent Salenidae, and on the Salenidae from the Tertiary deposits. *Annals and Magazine of Natural History* (5) 2(7): 59–67.
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- Notes and lists 29 species and 2 varieties of Australian Tertiary echinoids with numerous comments and additional information gained since his 1877 paper. The following points are of special note: erection of a new genus *Ortholophus* in which *Temnechinus lineatus* Duncan 1877 is placed (pp. 413–415); *Clypeaster folium* still included as an Australian fossil echinoid in spite of it being referred to the genus *Monostychia* by Etheridge in 1875 (pp. 415–416); acceptance of *Clypeaster gippslandicus* McCoy, 1879, but relegation of *Monostychia* to a sub-genus of *Clypeaster* (p. 416–420); figure of apical system of *Holaster australiae* (p. 421); renaming *Rhynchopygus dysasteroides* Duncan, 1877 - *Holaster difficilis* (p. 421); retention of *Megalaster compressus* Duncan, 1877, although considered likely to be a *Pericosmus* (p. 422); and lengthy discussion about the authorship of *Lovenia forbesi* (pp. 424–426). [Note: Duncan uses Cotteau's nom. var *Euspatangus* for *Eupatagus* in this paper].
- Duncan, P. M., 1889. A revision of the genera and great groups of the Echinoidea. *Journal of the Linnean Society of London (Zoology)* 23: 1–310.
- Revised classification and description of worldwide echinoid genera. Genera noted as found in Australia agrees with the list in Duncan (1887), with the exception of *Goniocidaris*, spines of which were previously noted from Cape Otway. Erects subgenus *Studeria* for *Catopygus elegans* Laube, 1869 (p. 185).
- Durham, J. W., 1955. Classification of clypeasteroid echinoids. *University of California Publications in Geological Sciences* 31(4): v + 73–198, (incl. 2 pls, 38 figs).
- Refers to genera etc. known to occur in the Australian fossil record as follows: under family Clypeasteridae, describes *Clypeaster Lamarck* (p. 118); under family Arachnoididae, describes *Fellaster* gen. nov. (p. 125), *Ammotrophus* H. L. Clark (p. 127), *Monostychia* Laube (p. 128), *Scutellinoides* gen. nov. (p. 128), *Fossilaster* Lambert and Thiéry (p. 129); under family Laganidae, describes *Sismondia* (p. 141). Figures *Sismondia*

- murravica* Tate (fig. 27e, p. 123); *Monostychia australis* Laube (fig. 29d, p. 126); *Fossilaster halli* Lambert and Thiéry (fig. 38, p. 181). Comments "It seems probable that arachnoidids older than *Monostychia*, *Fossilaster*, and *Scutellinoides* will be found" (p. 122). Notes *Hesperaster crassus* H. L. Clark occurs as a fossil ("Quaternary") at Rottneest Island, Western Australia (p. 128).
- Durham, J. W., Fell, H. B., Fischer, A. G., Kier, P. M., Melville, R. V., Pawson, D. L., and Wagner, C. D., 1966. Echinoids. Pp. U211–U640 in R. C. Moore (ed.), *Treatise on Invertebrate Paleontology, Part U, Echinodermata* 3(1 and 2). The Geological Society of America Inc. and The University of Kansas Press.
- Includes details of echinoid genera (extinct and extant) from throughout the world, with brief descriptions, figures and information on type species, distribution and range. Figures the following Australian species: *Paradoxechinus novus* Laube, 1869 (U424, fig. 317/1a,b); *Monostychia australis* Laube, 1869 (U468, fig. 359/1a,b); *Scutellinoides patella* (Tate, 1891), U468, fig. 359/2a,b; *Fossilaster halli* Lambert and Thiéry, 1925 (U468, fig. 359/3a,b); *Lenicyamidia compta* Brunnschweiler, 1961 (U470, fig. 361/2a,b); *Australanthus longianus* (Gregory, 1890), U509, fig. 397/2a,b; *Duncaniaster australiae* (Duncan, 1877) [= *Corystus dysasteroides*], U529, fig. 416/a,b; *Pericosmus (Victoriaster) gigas* McCoy, 1882 (U568, fig. 452/2); *Protenaster australis* (Grey, 1851), U578, fig. 461/2a–c; *Gillechinus cudmorei* Fell, 1964 (U592, fig. 476/1a–c); *Pisolampas concinna* Philip, 1963 (U630, fig. 516/1a–c); *Notolampas flosculus* Philip, 1963 (U630, fig. 516/2a–d).
- Etheridge, R., 1875. Description of a new species of the genus *Hemipatagus*, Desor, from the Tertiary rocks of Victoria, Australia, with notes on some previously described species from South Australia. *Quarterly Journal of the Geological Society of London* 31(2): 444–450, pl. 21.
- Describes and figures *Hemipatagus woodsii* sp. nov. (p. 445, pl. 21/1–7); figures lateral view of *H. Forbesii* (pl. 21/8); notes and figures *Psammechinus woodsii* Laube (p. 447, pl. 21/10); *Micraster brevistella* Laube (p. 447, text figs 11–12); notes *Monostychia australis* Laube and *Clypeaster folium* Duncan (non Agassiz) are one and the same (p. 448), and gives synonymy of other recorded Australian Tertiary echinoids (pp. 449–450).
- Etheridge, R., 1878. *A catalogue of Australian fossils*. University Press : Cambridge. 232 pp.
- Echinodermata (Tertiary)" lists each genus and species recorded at the time, as well as related stratigraphic subdivision, references and localities etc. (pp. 138–143).
- Etheridge, R., 1892a. A monograph of the Carboniferous and Permo–Carboniferous Invertebra of New South Wales. Part 2 - Echinodermata, Annelida, and Crustacea, II - Description of the genera and species. *Department of Mines, Memoirs of the Geological Survey of New South Wales. Palaeontology* 5(1): ix + 65–131, index, pls 12–22.
- Describes and figures *Archaeocidaris ? selwyni* sp. nov. from the Upper Marine Series [Permian], Shoalhaven River, Nowra, N.S.W. (p. 67, pl. 15/1–3); *Archaeocidaris* sp. ind., also from the Upper Marine Series, at a quarry, south of West Maitland, N.S.W. (p. 69, pl. 22/1). Also records a few fragments of spines and a single plate from the Rockhampton district of Queensland which are attributed to the Suborder Perischoechinida (p. 67). [Note: Jackson (1912) considers the difference between the two specimens of *Archaeocidaris* to be simply a matter of age, rather than species].
- Etheridge, R., 1892b. [Description of *Micraster sweetii* sp. nov.]. Pp. 559–560 in R. L. Jack and R. Etheridge, *The geology and palaeontology of Queensland and New Guinea* (2 vols). Government Printer, Brisbane (Dulau and Co., London).
- Describes, but does not figure, *Micraster sweetii* sp. nov. from a Cretaceous bed in Corporation Quarry, Maryborough, Queensland.
- Etheridge, R., 1913. The Cretaceous fossils of the Gingin chalk. *Palaeontological contributions to the geology of Western Australia* 4, *Western Australia Geological Survey Bulletin* 55: 9–34, pls 1–4.
- Notes and figures echinoid spines (pp. 11–12, pl. 1/9–15).
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- Notes *Laganum platymoides* from Haller's Cove (p. 290); from "Section D" – mouth of Onkaparinga River to Red Ochre Cove (p. 300); and from Lower Pliocene beds in "Section C" – Red Ochre Cove to Snapper Point, S. Aust. (p. 306). No other references to echinoids!
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- Notes echinoid (*Arachnoides incisa*) casts are common in the upper part of the Jemmy's Point Formation at Red Bluff, east of Lakes Entrance (p. 125).
- Jenkin, J. J., 1988. Melbourne Trough - western side: Mornington Peninsula. Pp. 443–463 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).
- Notes occurrence of echinoids in the Balcombe Clay (p. 448), in particular the north end of Fossil Beach (p. 454).
- Johnston, R. M., 1877. Further notes on the Tertiary marine beds of Table Cape. *Papers and Proceedings and Report of the Royal Society of Tasmania for 1876*: 79–90f.
- Notes *Hemipatagus woodsii* Etheridge, most abundant echinoid in the "Turritella Group" bed (p. 83); lists echinoid species found at Table Cape (table p. 90f). [Refer also Woods, J. E. Tenison, 1877.]
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- Lists *Lovenia forbesi* var. *woodsii* Etheridge Jun., *Micraster brevistella* Laube, *Micraster etheridgei* R. M. Johnston, and *Cidaris* (?) sp. (p. 130).
- Johnston, R. M., 1888a. Observations with respect to the nature and classification of the Tertiary rocks of Australasia. *Papers and Proceedings of the Royal Society of Tasmania for 1887*: 135–207.
- Lists distribution of echinoids in southern Australia (table pp. 168–169). *Micraster etheridgei* Johnston, 1877, now placed in the genus *Monostychia*.
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- Table on pp. 230–231 similar to that in Johnston, 1888a
- Jones, P. J., 1959. Preliminary report on Ostracoda from Bore B.M.R. No.2, Laurel Downs, Fitzroy Basin, Western Australia. Pp. 37–52 in Papers on Western Australian stratigraphy and palaeontology. *Department of National Development, Bureau of Mineral Resources, Geology and Geophysics Report* 38.
- Records echinoid remains (cidaroid spines and tubercles) from Core 3, at a depth of 250–260 feet (p. 37). Notes fossil "Assemblage 1", found between the depths of 150 feet and 360 feet, indicates a late Tournaisian (Early Carboniferous) age.
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- Lists echinoids in Appendix 5–1 (Faunal and floral lists) as follows: Bahgallah Formation – Undet. sp. (p. 144); Gambier Limestone, Glenaulin Clay Member – *Echinolampas* sp., *Cidaroids* spp. undet. (p. 147); Wataepoolan Limestone Member – *Echinolampas* cf. *gambierensis*, *Lovenia* sp. indet., *Eupatagus* sp., ? *Echinobrissus* sp., *Phyllacanthus duncani*, *Pericosmus* sp., ? *Stereocidaris australiae* and *Cidaroids* undet. (p. 148); Sandford Limestone Member – *Phyllacanthus duncani*, *Echinolampas gambierensis* (p. 150). Main text generally refers only to

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- Lists four echinoids from Flinders - *Paradoxechinus novus*, *Leiocidaris australis*, *Scutellina patella* and *Monostychia australis* (p. 51).
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- Records an echinoid spine from bores near Hexham (N.W. of Mortlake), Victoria, (p. 95).
- Krause, F. M., 1874. Appendix A (Report, Cape Otway District). Pp. 99-107 in R. Brough Smyth, *Geological Survey of Victoria, Report of Progress* 1.
- Notes echini spines in the upper strata of brown limestone exposed along the coast from Jan Juc to Stony Creek near Point Castries and again in outliers west of Cape Otway (p. 102).
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- Describes and figures *Eupatagus wrightii* Laube, 1869 (p. 168, pl. 1/1-6, text fig. 1A-C, 2); *E. murrayensis* Laube, 1869 (p. 169, pl. 1/7-10, text fig. 1D-F, 3); *E. cf. murrayensis* Laube, 1869 (p. 170, pl. 3/6-8, text fig. 4); *E. colabius* sp. nov. (p. 171, pls 1/11-13, 2/1-4, text fig. 6); *E. rotundus* Duncan, 1877 (p. 172, pls 2/6-11, 3/4, 5/1-3, text fig. 7); *E. cetus* sp. nov. (p. 173, pl. 4/4-8, text fig. 8); *E. anomalus* (Duncan, 1877), p. 173, pl. 2/5, 3/1-3, 5/4-5, text fig. 9); *E. ludbrookae* sp. nov. (p. 174, pls 3/5, 4/1-3, text fig. 10); *E. planulatus* sp. nov. (p. 175, pl. 4/9-11, text fig. 11). Notes *Eupatagus laubei* Duncan, 1877, best referred to the genus *Spatagobrissus* (Foster and Philip, 1978), p. 167).
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- Lambert, J., 1920. Sur quelques genres nouveaux d'échinides. *Mémoire Société Académique, d'agriculture, des sciences, arts et belles lettres du département de l'Aube* 84: 145-172, pls 1-2 (French).
- Erects new genus *Granobrissoides* with *Gualtieria australiae* Cotteau 1889 [O.D.], as type species (p. 168).
- Lambert, J. and Thiéry, P., 1909. *Essai de nomenclature raisonnée des échinides* 1. Librairie L. Ferrière, Chaumont, 1-80, pls 1-2 (French).
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- Refers to the Australian fossil echinoid *Arachaeocidaris selwyni* Etheridge (p. 125).
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- Refers to Australian fossil echinoids as follows:- *Echinopsis humilior* Bittner (*Psammechinus*), p. 185; *Salenida tertiaria* Tate (*Salenia*), p. 212; *Prionechinus woodsi* Laube (*Psammechinus*), p. 230; *Prionechinus lineatus* Duncan (*Temnopteurus*), p. 230; *Paradoxechinus novus* Laube (p. 230); *Paradoxechinus lineatus* Bittner (*Coptechinus*), p. 230; *Arbacina pulchella* Bittner (*Coptechinus*), p. 231; *Microcyphus annulatus* Mortensen (p. 235); *Amblyneustes formosus* Valenciennes (p. 236).
- Lambert, J. and Thiéry, P., 1914. *Essai de nomenclature raisonnée des échinides* 4. Librairie L. Ferrière, Chaumont, 241-320, pls 7-8 (French).
- Refers to Australian fossil echinoids as follows:- *Coelopteurus paucituberculatus* Gregory (p. 265); *Echinocyamus gregatus* Tate (*Fibularia*), p. 287; *Scutellina patella* Tate (p. 292); *Eoscutum morgani* Cotteau (*Scutellina*), p. 293; *Sismondia murravica* Tate (p. 296); *Chlypeaster gippslandicus* McCoy (p. 299); *Anomalanthus timidus* Woods (*Echinanthus*), attributed to the Pliocene of Australia (p. 310); *Monostychia australis* Laube with references to *Arachnoides loveni* and *A. elongatus* Duncan (p. 315).
- Lambert, J. and Thiéry, P., 1921. *Essai de nomenclature raisonnée des échinides* 5. Librairie L. Ferrière, Chaumont, 321-384, pl. 9 (French).
- Refers to Australian fossil echinoids as follows:- *Echinoneus dennanti* Hall (p. 331); *Galeraster australiae* Cotteau (p. 332); *Proccassidulus florescens* Gregory (*Cassidulus*) p. 362; *Australanthus longianus* Gregory (*Cassidulus*), p. 363; *Rhynchopygus dysasteroides* Duncan (p. 364); *Pliolampas vassali* Wright (*Pygorhynchus*), p. 372; *Studeria elegans* Laube (*Catopygus*), p. 372; *Echinolampas morgani* Cotteau [*Isolampas* Lambert], p. 380; *E. ovulum* Laube [*Miolampas* Pomel], p. 383; *E. posterocrassa* Gregory [*Miolampas* Pomel], p. 383. [Note: There is no reference to *Echinobrissus australiae* Duncan or *E. vincentinus* Tate].
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- Refers to Australian fossil echinoids as follows:- *Echinolampas gambierensis* Tenison Woods [*Paleolampas* Bell], p. 386; *Progonolampas Novaehollandiae* Bittner (p. 387); *Holaster tertiarius* Gregory (*Cardiaster*), p. 402; *Duncaniaster australiae* Duncan (*Holaster*), p. 408; *Granobrissoides australiae* Cotteau (*Gualtieria*), p. 447; *Brissoides murrayensis* Laube (*Eupatagus*), *B. wrightii* Laube (*Eupatagus*), and *B. rotundas* Duncan (*Eupatagus*), p. 451; *Brissoides laubei* Duncan (*Eupatagus*) [*Heteropatangus*], p. 454; *Hemipatagus woodsi* Etheridge (p. 457); *Maretia anomala* Duncan (p. 458); *Lovenia forbesi* Woods (*Spatangus*), p. 467; *L. woodsi* Etheridge (cited by Cotteau), p. 467; *Cyclaster archeri* Tenison Woods (*Micraster*), p. 485; *C. lycoperdon* Bittner and *C. morgani* Cotteau (p. 486); *Brissopsis tatei* Hall (p. 489); *Hemiaster planedclivis* Gregory [*Intergraster* Lambert and Thiéry], p. 504.
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- Schizaster abductus* Tate (p. 524); *S. sphenoides* Hall (p. 525); *Fossilaster halli* Lambert (p. 577); *Echinodiscus orbicularis* Leske (p. 580); *Peronella platymodes* Tate (p. 581); *Monostychia etheridgei* Johnston (*Micraster*) and *Echinarachnius incisus* Tate (p. 583); *Scutella tamboensis* McCoy (p. 584).
- Laube, G. C., 1869. Über einige fossile Echiniden von den Murray Cliffs in Süd-Australien. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften zu Wien (math. naturw. Classe)* 59: 183–198, figs 1–8 (German).
- Describes and figures *Psammechinus Woodsi* sp. nov. (p. 185, fig. 1); *Paradoxechinus novus* gen. et sp. nov. (p. 188, fig. 2); *Monostychia australis* gen. et sp. nov. (p. 190, fig. 3); *Catopygus elegans* sp. nov. (p. 190, fig. 8); *Micraster brevistella* sp. nov. (p. 192, fig. 7); *Eupatagus wrighti* sp. nov. (p. 195, fig. 5); *Eupatagus murrayensis* sp. nov. (p. 196, fig. 6). Describes, but does not figure, *Echinolampas ovulum* sp. nov. (p. 191); and notes and figures *Hemipatagus forbesi* Woods (p. 193, fig. 4).
- Leske, N. G., 1778. *Additamenta ad Jacob Theodori Klein naturalem dispositionem Echinodermatum et lucubratiunculam de aculeis Echinorum marinarum*. Lipsiae, Uppsala, 278 pp, 54 pls (Latin).
- Describes and figures *Echinodiscus orbicularis* sp. nov. (p. 208, [144] pl. 45/6–7), an extant species subsequently recorded as a fossil in the Exmouth Sandstone (?) and the Roe Calcarenite, Western Australia (Foster and Philip, 1980).
- Ludbrook, N. H., 1957. A reference column for the Tertiary sediments of the South Australian portion of the Murray Basin. *Journal and Proceedings of the Royal Society of New South Wales* 90(4): 174–180.
- Refers to the important zonal echinoid *Australanthus longianus* (Gregory) occurring in Bed 'B' of the Buccleuch Group (p. 176) and *Lovenia forbesi* in the Mannum Formation (p. 178).
- Ludbrook, N. H., 1958a. The Murray Basin in South Australia. Pp. 102–114 in M. F. Glaessner and L. W. Parkin (eds), *The Geology of South Australia*. *Journal of the Geological Society of Australia* 5(2).
- Refers to *Australanthus longianus* in the Buccleuch Bed 'B' and notes it is a stratigraphically important echinoid occurring in the Tortachilla and Wilson Bluff Limestones and in the Limestone at Kingscote (p. 107). Lists *Monostychia australis*, *Scutellina patella*, *S. morgani*, *Echinolampas gambierensis*, *Eupatagus murrayensis*, *Lovenia "forbesi"* from the Gambier Limestone (p. 109); and *Monostychia australis*, *Fibularia gregata*, *Eupatagus murrayensis*, *Lovenia "forbesi"* from the Mannum Formation (p. 110).
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- Lists *Stereocidarid australiae*, *Pseudechinus woodsi*, *Salenia tertiaria*, *Australanthus longianus*, *Eupatagus* sp. from the Wilson Bluff Limestone (p. 131); and ? *Stereocidarid australiae*, *Pseudechinus woodsi*, *Fibularia gregata* from the Nullarbour Limestone (p. 132).
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- Lists dominant megafauna [including echinoids] from various formations and members (p. 12, table 1); echinoids from lower member of Mannum Formation (p. 44), from upper member (p. 45) and from Morgan Limestone (p. 47). Gives vertical range of megafossils at Mannum Pumping Station (table 5, p. 48). Figures *Australanthus longianus* (Gregory) from the Late Eocene Buccleuch Group Bed A; *Monostychia australis* from the Morgan Limestone; and *Lovenia forbesi* from the Mannum Formation (pl. 8). Several other minor references to echinoids elsewhere in the paper.
- Ludbrook, N. H., 1969. Tertiary Period. Pp. 172–203 in L. W. Parkin (ed.), *Handbook of South Australian Geology*. Geological Survey of South Australia.
- Notes *Lovenia forbesi* in the Mannum Formation (p. 180) and refers to echinoids [in general] in the Tortachilla Limestone (p. 188).
- Macumber, P. G., 1978. Evolution of the Murray River during the Tertiary Period. Evidence from northern Victoria. *Proceedings of the Royal Society of Victoria* 90(1): 43–52.
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- McCoy, F., 1874. [Table of fossils]. Pp. 33–36 in R. Brough Smyth, *Geological Survey of Victoria, Report of Progress* 1.
- In the Table, under Spatangidae, McCoy lists *Eupatagus forbesi*, *Scutella tamboensis* and *Echinolampas corioensis* (p. 36). These are undescribed and unfigured manuscript names [refer also Etheridge, 1875].
- McCoy, F., 1879. Tertiary Echinodermata. Pp. 33–42, pls 59–60 in *Prodromus of the palaeontology of Victoria; or, figures and descriptions of the Victorian organic remains*, decade 6. Geological Survey of Victoria, Melbourne.
- Describes and figures *Clypeaster gippslandicus* sp. nov. (p. 33, pl. 59) and notes that it had previously been referred to as *Echinanthus testudinarius* Gray by Duncan (1877) and Tenison Woods (1878); describes *Lovenia forbesi* [incorrectly attributed to McCoy] and states that he can see no difference between *L. forbesi* and *L. woodsi* or Duncan's var. *minor* to justify separate species (pp. 37–40, pl. 60/1–4); notes and figures *Monostychia australis* Laube (p. 40, pl. 60/5) and relegates *Atrachnoides Loveni* Duncan to variety of *M. australis* (p. 42, pl. 60/6–7).
- McCoy, F., 1882. Tertiary echinodermata. Pp. 15–22, pls 64–68 in *Prodromus of the palaeontology of Victoria; or, figures and descriptions of the Victorian organic remains*, decade 7. Geological Survey of Victoria, Melbourne.
- Describes and figures *Pericosmus gigas* sp. nov. (p. 15, pls 64–65); *Pericosmus nelsoni* sp. nov. (p. 17, pls 66, 67/1); *Pericosmus compressus* sp. nov. [non *P. compressus* Duncan], (p. 21, pls 67/2, 68).
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- Includes sections on Indo-Pacific echinoids with references to Australian fauna (pp. 359, 363) and figure showing stratigraphic ranges of all known echinoid genera from southern Australia (p. 360–fig. 17.7).
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- Describes and figures *Protenaster australis* (Gray, 1851), p. 313, pls 32, 33/3–4, text fig. 1 2; *P. antaustralis* (Tate, 1885), p. 318, pl. 33/1,2,5, text fig. 4; *P. preaustralis* sp. nov. (p. 321, pl. 33/6–8, 34/1–5, text figs 5–6); *P. philipi* sp. nov. (p. 322, pl. 34/6–7, text fig. 7). Discusses evolution of *Protenaster* (pp. 324–329).
- McNamara K. J., 1985b. The spatangoid echinoid *Linthia* from the Late Eocene of southern Australia. *Transactions of the Royal Society of South Australia* 109(4): 161–165
- Describes and figures *Linthia pulchra* sp. nov. (p. 162, fig. 1). Notes a number of forms which have at sometime or other been incorrectly assigned to this genus.
- McNamara, K. J., 1986. First Mesozoic record of the cidaroid echinoid *Goniocidarid*. *Alcheringa* 10(4): 353–354.
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Refers to the occurrence of *Breynia* aff. *carinata* d' Archiac and Haime, in the Middle Miocene of north western Australia (pp. 153–154). Also refers to Australian fossil species of *Protenaster* (p. 157); *Peronella*, including an undescribed species from the late Pliocene of the Roe Plains, Western Australia (p. 158); *Echinolampas* (pp. 159–160). Other general references to Australian Tertiary lineages include *Schizaster* (pp. 155, 157), *Hemiaster* (pp. 157, 159), *Lovenia* (p. 159).
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Briefly notes and figures (p. 4–5), cidaroid plates and spines (figs 5–7), *Echinolampas posterocrassa* (figs 8–9), *Eurhodia australiae* (fig. 10), *Australanthus longianus* (fig. 11), *Gillechinus cudmorei* (fig. 12), from the Pallinup Siltstone and Nananup Limestone (Late Eocene) of the Albany region, Western Australia.
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Describes and figures *Apoxypetalum chenjafra* gen. et sp. nov. from the Jan Juc Formation, Waurn Ponds Limestone Member at Waurn Ponds, Victoria (pp. 40–44, figs 2–4). Lists and compares the echinoid fauna of the Waurn Ponds Limestone with that of the Point Addis Limestone and the undifferentiated section of the Jan Juc Formation (pp. 44–47, tables 1–2).
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Notes echinoids occur in the Tulki Limestone (p. 125); Trealla Limestone (p. 126); Wadera Calcarene (p. 127); Pirie Calcarene - *Cardiaster*, *Cidarid*, *Holaster* (p. 127); Merlinleigh Sandstone (p. 129); Plantagenet Beds (p. 131); Norseman Limestone - spines (p. 132); Wilson Bluff Limestone (p. 134). Also refers to the Upper Eocene age of the Wilson Bluff Limestone fauna being established by Glaessner (1953) on the basis of the echinoid *Australanthus longianus*, the pelecypod *Notostrea lubra* and

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Gives brief description of the genus *Lovenia* Desor, 1847, accompanied by illustrations of *Lovenia forbesi* Tenison Woods and Duncan [noted as 'Eocene age from Murray River, Victoria, Australia'], pp. 189–190, pl. 7.9.23A–C. [Note: figured specimen is clearly *Lovenia woodsii* (Etheridge, 1875) not *L. forbesii*]
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- Philip, G. M., 1962. The palaeontology and stratigraphy of the Siluro-Devonian sediments of the Tyers area, Gippsland, Victoria. *Proceedings of the Royal Society of Victoria* 75: 123–246, pls 11–36.
Includes table interpreting fauna from the Tyers area figured by Chapman (1907). Notes the original specimens could not be found, consequently, based solely on Chapman's photographs, the presence of ? *Palaeochinus* spines is queried (p. 126).
- Philip, G. M., 1963a. The Tertiary echinoids of south-eastern Australia 1. Introduction and Cidaridae (1). *Proceedings of the Royal Society of Victoria* 76(2): 181–226, pls 21–26.
Includes historical account (p. 184) and extensive bibliography (p. 219). Describes and figures *Stylocidaris* (?) *scoparia* (Chapman and Cudmore), p. 195, pl. 21/1–2, 4–8, text figs 1a, 2b; *S. (?) sp. cf. S. (?) scoparia* (Chapman and Cudmore), p. 198, pl. 21/3; *S. (?) chapmani* sp. nov. (p. 198, pl. 22/6–8, text figs 1b–c, 2a); *Eucidaris strombilata fellii* subsp. nov. (p. 202, pl. 22/1–2, 5, 9); *Phyllacanthus duncani duncani* (Chapman and Cudmore), p. 209, pls 22/3–4, 23/1, 3–4, 6–9, 12–14, 24/514, text fig. 3; *P. d. gambierensis* subsp. nov. (p. 213, pls 23/2, 10, 24/1–3, text fig. 4); *P. clarki clarki* (Chapman and Cudmore), p. 214, pls 25/3, 5–8, 26/1, 3–4, 6–8, text figs 2c–d, 5a–b, d–e; *P. c. impensus* subsp. nov. (p. 217, pls 25/9–10, 26/2, 5, 9, text fig. 5c) and *P. serratus* sp. nov. (p. 219, pl. 25/1–2, 4, text fig. 2e).
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Describes and figures *Pisolampas concinna* gen. et sp. nov. (p. 719, pls 106/1–10, 107/11, text fig. 1) from Aldinga; *Notolampas flosculus* gen. et sp. nov. (p. 720, pl. 107/1–10, text fig. 2) from Mannum.
- Philip, G. M., 1963c. Silurian echinoid pedicellariae from New South Wales. *Nature* 200 (4913): 1334.
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- Philip, G. M., 1964. The Tertiary echinoids of south-eastern Australia 2. Cidaridae (2). *Proceedings of the Royal Society of Victoria* 77: 433–477, pls 58–67.
Describes and figures *Stereocidaris australiae* (Duncan), p. 437, pl. 58/1–5, text fig. 2a, d, g–h; *S. cudmorei* sp. nov. (p. 440, pl. 60, text fig. 1a–d, j–j); *S. fosteri* sp. nov. (p. 441, pls 59/6, 65/3, text fig. 1f–g); *S. inermis* sp. nov. (p. 442, pl. 59/1–3, 7–8, text fig. 2b–c, e–f); *S. (?) hispida* sp. nov. (p. 444, pl. 61/8–9, text fig. 1h); *S. (?) intricata* sp. nov. (p. 446, pl. 59/4, text fig. 1e); *S. sp. A* (p. 447, pls 61/2–3, 62/4–5, 65/2); *S. sp. B* (p. 448, pl. 64/7, 9–11); *S. sp. C* (p. 449, pl. 64/3, 8); *Goniocidaris murrayensis* Chapman and Cudmore (p. 453, pls 62/2–3, 6–12, 64/5–6, 66/4, 6–7, 9–12, text fig. 4a–f); *G. praecipua* sp. nov. (p. 455, pl. 61/10–12, text fig. 4i, k, m); *G. tubaria hallettensis* nom. nov. (p. 458, pls 66/1–2, 12, 67/4–6, text fig. 4g, j, l); *G. (?) pentaspinoso* Chapman and Cudmore (p. 460, pl. 65/1, 4–16, text fig. 4h); *Austrocidaris operta* sp. nov. (p. 463, pls 61/5–6, 64/1–4, 8, text fig. 5d–e); *Delocidaris prunispinosa* (Chapman and Cudmore), p. 466, pls 58/6–9, 63, text fig. 5a–c, f; *Menocidaris compta* sp. nov. (p. 469, pls 59/5, 61/1, 67/1, text fig. 6); and sundry cidarid fragments (corona sp. 1–3 and radiolus sp. 1–7).
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- Philip, G. M., 1965b. The Tertiary echinoids of south-eastern Australia 3. Stirodonta, Aulodonta and Camarodonta (1). *Proceedings of the Royal Society of Victoria* 78(2): 181–196, pls 26–29.
Describes and figures *Salenidia tertiaria* (Tate), p. 182, pl. 26/10–15, text fig. 2a–b; *Murravechinus* gen. nov., type species *M. paucituberculatus* (Gregory), p. 186, pl. 26/1–9, text fig. 2c–d, f–g; *Diademataidae* gen. et sp. indet. (p. 187, text fig. 2e); *Toxopneustidae* gen. et sp. indet. (p. 187, pl. 29/4–5); *Strongylocentrotus antiquus* sp. nov. (p. 189, pl. 29/1–3, text fig. 3, 4a, d); *S. (?) sp.* (p. 191, pl. 29/8); *Heliocidaris ludbrookae* sp. nov. (p. 192, pls 27/1–4, 28/1–2, text fig. 4c); *Zenocentrotus peregrinus* sp. nov. (p. 194, pls 28/3–6, 29/6, 9, text fig. 4b).
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Considers *Gillechinus* Fell, 1964, a synonym of *Brissopatagus* Cotteau, 1886 (p. 114); *Irenechinus* Fell, 1964, a synonym of *Ortholophus* Duncan, 1887, with *Brochopleurus australiae* Fell = *Ortholophus woodsi* (Laube) and *Irenechinus hentyi* Fell = *Ortholophus pulchellus* (Bittner), pp. 115–116. Comments on *Lenicyamida* Brunnschweiler, 1962 (p. 116, fig. 1).
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- p. 268, pl. 9/8,15, text fig. 2d; *Tatechinus nudus* sp. nov. (p. 269, pls 4/7-9,14-15, 14/7, 15/4, text fig. 8a-f,i); *Radiolus* sp. indet. (p. 271, pl. 5/11).
- Philip, G. M., 1970. Appendix 1 - Tertiary echinoids from the Eucla Basin. Pp. 182-191, pl. 5 in D. C. Lowry, Geology of the Western Australian part of the Eucla Basin. *Bulletin of the Geological Survey of Western Australia* 122.
- Notes sequence of echinoid faunas in southeastern Australia and lists 20 described species occurring in the Upper Eocene Tortachilla Limestone of the St Vincent basin (p. 183); schedules 35 echinoid species from various localities in the Wilson Bluff, Toolinna and Abrakurrie Limestones including several new unnamed species (pl. 5); schedules 5 species from the Colville Sandstone and Nullarbor Limestone including *Monostychia* cf. *australis* Laube and *Monostychia* sp. nov. (p. 186). Figures *Ortholophus woodsi* (Laube), *Salinida tertiaria* (Tate), *Lovenia forbesii* (T. Woods), *Brissopatagus cudmorei* (Fell), fig. 56, p. 188; *Eupatagus* sp. nov., *Paradoxechinus* sp. nov. cf. *novus* Laube, *Brissopatagus cudmorei* (Fell), fig. 57, p. 189; "*Duncanaster*" *australiae* (Duncan), *Australanthus longianus* (Gregory), *Eupatagus* sp. nov. (fig. 58, p. 190); *Monostychia australis* Laube (fig. 59, p. 191). [Note: new (unnamed) species referred to in this paper are recorded at the end of the 'List of genera and species']
- Philip, G. M., 1971. A re-assessment of the Tertiary echinoid genus *Goniosigma* Fell 1964. *Proceedings of the Royal Society of Victoria* 84(2): 227-228, pl. 12.
- Describes and figures the holotype of *Goniosigma* Fell, 1964 (= *Echinus enysi* Hutton, 1873), p. 227, pl. 12; transfers Australian Tertiary temno-pleurid species *Asaphechinus murrayensis* Philip, 1969, *A. princeps* Philip, 1969, *A. singletoni* Philip, 1969 and *A. tasmanensis* Philip, 1969, to the genus *Goniosigma* (p. 228).
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- Describes and figures *Archaeocidaris* sp. indet. from the *Rhipidomella formuscula* Zone of Early Carboniferous (Late Visean) age at Mt Breakneck, Carrow Brook district, southern New England, N.S.W. (p. 33, figs 1-3).
- Philip, G. M. and Foster, R. J., 1970. The sequence of echinoid faunas in the Cainozoic of south-eastern Australia. *Australian and New Zealand Association for the Advancement of Science, 42nd Congress, Port Moresby*. Abstracts, Section 3, 2 pp.
- Divides Upper Eocene to Pliocene into seven "zones" based on commonly occurring echinoids.
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- Describes and figures *Paradoxechinus novus* Laube (p. 672, pls 125/1-2, 126/1, 127/1, 129/7,12-13,17, text figs 1-2); *P. granulatus* sp. nov. (p. 674, pl. 129/4-5,9-10,18,19, 134/3); *P. profundus* sp. nov. (p. 676, pls 128/1, 129/8, 134/2); *P. stellatus* sp. nov. (p. 677, pls 126/2, 129/16,20-23, 134/1); *Pentechinus mirabilis* gen. et sp. nov. (p. 678, pls 124, 129/1-3,11,15, text figs 3-4); *Fossilaster halli* Lambert and Thiéry (p. 682, pls 125/3, 127/3, 130/1-10, 131/6, 132/10, text figs 5-6); *F. exiguus* sp. nov. (p. 686, pls 128/3, 132/2-3,6,8-9,11, text fig. 7); *Willungaster scutellaris* gen. et sp. nov. (p. 688, pls 127/2, 131/1-5,7, 133/7,9, text fig. 8); *Peraspatangus brevis* gen. et sp. nov. (p. 690, pls 126/3, 133/1 2,4-6,8, text fig. 9b-d); *P. depressus* sp. nov. (p. 692, pls 128/2, 132/1,4-5,7, 133/3, text fig. 9a). [Note: Philip and Foster do not consider *Scutellina patella* Tate 1891 (type species of *Scutellinoides* Durham, 1955) and *Scutellina morgani* Cotteau, 1891, are congeneric, as assumed by Durham when erecting and placing the genus in the family Arachnoididae. In this paper Philip and Foster place the genera *Scutellinoides*, *Fossilaster* and *Willungaster* in a new family, *Fossilasteridae* (p. 681).]
- Playford, P. E., Cockbain, A. E. and Low, G. H., 1976. Geology of the Perth Basin, Western Australia. *Geological Survey of Western Australia Bulletin* 124: 1-311.
- Records in tables of fossils, *Cidaris* sp. from the Newmarracarra Limestone (p. 155); *Cidaris comptoni* Glauret, cf. *Hemiasper* sp. and cf. *Holaster* sp. from the Gin Gin Chalk (p. 189).
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- Notes echinoids present in the Boongerooda Greensand, Wadera Calcarene and Pirie Calcarene (p. 300); Cashin Calcarene and Merlinleigh Sandstone (p. 301); Trealla Limestone (p. 303); Carbla Oolite (p. 307); Nanarup Limestone of the Werillup Formation (p. 430). Refers to *Australanthus longianus* occurring in the Wilson Bluff Limestone (p. 413); *Lovenia forbesi* in the Abrakurrie Limestone (p. 415); *Monostychia australis* in the Colville Sandstone (p. 416).
- Pledge, N. S., 1985. An Early Pliocene shark tooth assemblage in South Australia. Pp. 287-297 in J. M. Lindsay, (ed.), *Stratigraphy, palaeontology, malacology: papers in honour of Dr Nell Ludbrook. Department of Mines and Energy, South Australia, Special Publication* 5.
- Records *Cidaroida* indet, *Lovenia woodsi*, and *Monostychia* sp. indet. from the Sunlands fossil assemblage, Early Pliocene Loxton Sands, Murray Basin, South Australia (p. 288). Figures cidaroid spine and *Lovenia woodsi* (pl. 2/h-j).
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- Describes and figures *Peronella lesueuri augusta* subsp. nov. from Quaternary silty clay at Port Augusta, South Australia (p. 103, fig. 1a-b).
- Pomel, A., 1883. *Classification méthodique et genera des échinoides vivants et fossiles*. Adolphe Jourdan, Alger, 131 pp., 36 pls (French).
- Refers *Lovenia forbesii* to the genus *Sarsella* Pomel (p. 28); notes *Protenaster australis* (a Recent species), p. 37; refers *Rhynchopygus dysasteroides* Duncan to the genus *Corystus* Pomel (pp. 61-62); notes *Catopygus elegans* Laube (p. 64); *Monostychia australis* Laube, *M. Laubei*, *M. loveni* and *M. elongatus* (Duncan sub. *Arachnoides*), pp. 69-70; *Paradoxechinus* Laube (p. 86); erects a new genus *Pleurosalenia* in which he includes *Salenia tertiaria* Tate, 1877 (p. 94).
- Pritchard, G. B., 1892. Remarks on the Tertiaries of Australia. *Annual Report of the South Australian School of Mines and Industries for 1891*: 171-206.
- Includes in "Catalogue of Australian Older Tertiary mollusca and Pliocene species in South Australian School of Mines Museum (Revised and extended by Prof. R. Tate, Chairman of Museum Committee)" - 'Miocene' echinoids (p. 177), 'Eocene' echinoids (pp. 185-186). [Note: Catalogue includes the manuscript names, *Monostychia deltoidalis* Tate, *M. patellus* Tate, *Laganum crassatinum* Tate, *L. platymodes* Tate.]
- Pritchard, G. B., 1896. A revision of the fossil fauna of the Table Cape Beds, Tasmania, with descriptions of the new species. *Proceedings of the Royal Society of Victoria* 8: 74-150.
- Includes in faunal list, with full bibliography, the echinoids *Conoclypeus rostratus*, *Lovenia forbesi* and *Cyclaster archeri* (pp. 143 144).
- Pritchard, G. B., 1908. On the occurrence of the genus *Linthia* in Victoria, with description of a new species. *Proceedings of the Royal Society of Victoria* 21(1): 392-400, pls 22-23.
- Describes and figures *Linthia mooraboolensis* sp. nov. (p. 394, pls 22/1-2, 23/3-4); reassigns *Pericosmus gigas* McCoy, 1882, and *Pericosmus nelsoni* McCoy, 1882, to the genus *Linthia* (pp. 396, 399); comments on *Linthia antiaustralis* Tate, 1891 (p. 397).
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- Refers to the presence of Echinoidea in the Janjukian and introduces the term "*Scutellina* Limestones" for one of at least seven beds outcropping in the section at the Torquay end of the sequence (p. 935).
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- Notes and figures *Lovenia woodsi* (Etheridge) as one of the most common Beaumaris fossils (p. 20, text fig. 11). [Note: article is the second chapter of a manuscript written by Pritchard (1947) and contains an editor's introduction by T. A. Darragh]
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- Notes "several echinoids including *Monostychia australis* Laube and *Scutellinoides patella* (Tate)" occur in the middle section (100 feet) of the 140 feet thick Tertiary sediments at Cape Grim (p. 35).
- Quilty, P. G., 1974. Tertiary stratigraphy of Western Australia. *Journal of the Geological Society of Australia* 21(3): 301-318.
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- (with note on subsequent synonymy) and *Phyllacanthus duncani* Chapman and Cudmore, 1934 from the Eucla Basin (p. 303). Also refers to appendix on echinoids by Philip, in Lowry, 1972 (p. 304).
- Raggatt, H. G. and Crespin, I., 1955. Stratigraphy of Tertiary rocks between Torquay and Eastern View, Victoria. *Proceedings of the Royal Society of Victoria* 67(1): 75–142, pls 4–7, tables 1–16 [text fig. 7 (of 8) not on numbered page].
Refers to abundant small echinoids in shelly calcilutite to calcarenite at Fishermans Steps (p. 97 - section 11); abundant echinoids in grey calcarenite at Dead Mans Gully (p. 99 - section 13); large echinoids in off white sandy calcarenite between Bird Rock and mouth of Jan Juc Creek (p. 100 - section 15); echinoids (common) in off white sandy calcarenite from Jan Juc Creek to Spring Creek (p. 103 - section 17); flat echinoids in calcarenite at Split Point opposite Table Rock, Airey Inlet (p. 105 - section 19).
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Lists echinoid faunas from Tortachilla Limestone- Polyzoal Limestone (p. 123); Blanche Point Glauconitic Limestone (p. 124); Port Willunga Beds (p. 129); Pliocene Limestones (p. 131). Table II lists microfossils with restricted range including six echinoids (p. 139).
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Lists *Echinolampas gambierensis* Woods, 1867 and notes *E. ovulum* Laube, 1869 a synonym of *E. gambierensis* (p. 281); *E. morgani* Cotteau, 1890 (pp. 240–241, 291); *E. posteroecrasa* Gregory, 1890 (pp. 240–241, 295); *E. tatei* Lambert, 1898 (pp. 250–251, 302); *E. westraliensis* Crespin, 1943 (*Conoclypus*), pp. 246–247, 304. Notes distribution and geologic age of *Echinolampas* in Australia (pp. 212–214, 219). Refers to the genera *Pisolampas* and *Notolampas* Philip (1963), p. 158.
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Describes and figures an “irregular” echinoid from Bringo Railway Cutting, near Geraldton, Western Australia, which is identified as *Clypeus* cf. *michelini* (Wright, 1854), p. 48, pl. 1. An additional abraded natural cast from Fossil Hill, Newmarracarra, is similarly referred to this species (p. 49, pl. 2). A fragment of secondary (or small primary) spine shaft from Waggrakine, near Geraldton, is also described and figured (p. 49, pl. 3), and the club shaped spine, *Cidaris* sp. Whitehouse, 1924, discussed.
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Notes echinoid (unnamed) in Anglesea Sand (p. 120); *Monostychia australis*, *Cassidulus florescens*, and large *Lovenia forbesii* in the Point Addis Limestone (p. 121); *Duncanaster australiae*, smaller *Lovenia forbesii* and *Eupatagus murrayensis* and the absence of *Monostychia* and *Cassidulus* in the Jan Juc Marl (p. 121); *Scutellina patella* abundant in the Zeally Limestone (p. 122); *Eupatagus laubei* and *Schizaster sphenoides* with *Lovenia woodsii* common towards the top, in the Port Campbell Limestone (Rutledge Creek), p. 127. [Note: information repeated in O. P. Singleton, 1973.]
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[Note: repeats information given in first edition (O. P. Singleton, 1968) but with different page numbers. To transcribe first edition page numbers to second edition - deduct 3.]
- Smith, A. B., 1984. *Echinoid Palaeobiology*. George Allen and Unwin : London. xii + 190 pp., fig. A1.
Figures Australian marsupiate echinoids *Pentechinus mirabilis*, *Paradoxechinus novus*, *Peraspatangus brevis*, *Fossilaster halli* (p. 86, fig. 3.40). Discusses Australian *Schizaster* lineage based on McNamara and Philip (1890), p. 108, fig. 5.1; Tertiary migration pathway between Australia and New Zealand based on the appearance of *Giraliaster* spp., *Corystus*, *Evechinus*, and *Fellaster* (p. 131, fig. 6.3, table 6.2).
- Sprigg, R. C., 1952. The geology of the South-East Province, South Australia, with special reference to Quaternary coast-line migrations and modern beach development. *Department of Mines, Geological Survey of South Australia Bulletin* 29: 1–120, pls 1–13 + map.
Notes *Lovenia forbesi* one of the characteristic fossils in the Gambier Limestone (p. 27).
- Stephens, T., 1870. Remarks on the geological structure of part of the north coast of Tasmania, with special reference to the Tertiary marine beds near Table Cape. *Monthly notices of Papers and Proceedings of the Royal Society of Tasmania for 1869*: 17–21.
Refers to the “Echinida” from the Table Cape beds being represented by species of *Cidaris* and *Spatangus* based on a collection of rocks and fossils presented to the Museum by a Mr Hainsworth (p. 20).
- Stirling, J., 1894. Notes on a recent classification of the older marine Tertiary beds of Victoria', *Geological Survey of Victoria, Progress Report* 8: 47–57.
Lists, in a comprehensive schedule of fossils, echinoids occurring in the lower Tertiary beds of Victoria [which were referred to the Eocene by Prof. Tate], p. 50. Also includes general text references. [* Pritchard, 1892.]
- Stuart, W. J. Jnr, 1970. The Cainozoic stratigraphy of the eastern coastal area of Yorke Peninsula, South Australia. *Transactions of the Royal Society of South Australia* 94: 151–178, figs 2–4.

- Lists echinoids in the Muloowurtie Formation - *Fibularia gregata*, *Salenia tertiaria* and *Echinolampas* sp. (pp. 154–155); Quartoo Sand Member - *Fibularia gregata* and spines (p. 157); Rogue Formation - *Duncanaster* (p. 161); Port Vincent Limestone - echinoids in general with specific reference to *Lovenia woodsi* (p. 166). No reference to echinoids in the Hallet Cove Sandstone.
- Sturt, C., 1833. *Two expeditions into the interior of Southern Australia during the years 1828, 1829, 1830 and 1831, with observations on the soil, climate and general resources of the colony of New South Wales*, Volume 2. Smith, Elder and Co : Cornhill, London, 271pp.
 Figures *Scutella* [= *Monostychia*], pl. 3/9; *Spatangus hoffmanni* [= *Lovenia*], pl. 3/10; *Echinus* [= '*Psammechinus*'], pl. 3/11.
- Talent, J. A., 1965. The Silurian and Early Devonian faunas of the Heathcote district, Victoria. *Geological Survey of Victoria, Memoir* 26: 1–55, pls 1–27.
 Notes and figures *Lepidocentroid* indet., a poorly preserved mould of an echinoid from the Mount Ida Formation (Early Devonian) at Redcastle, north of Heathcote, Victoria (p. 20, pl. 5/9).
- Tate, R., 1877. On new species of *Belemnites* and *Salenia* from the Middle Tertiaries of South Australia. *Quarterly Journal of the Geological Society of London* 33(2): 256–259.
 Lists Australian echinoid genera known to Tate, but not previously recorded (p. 256); describes and figures *Salenia tertiaria* sp. nov. (pp. 258, 257, text fig. 2a c).
- Tate, R., 1878. Anniversary Address. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia for 1877–1878* (volume 1): 11–47.
 Refers to "The Echini of Australia" (Woods, 1878) and remarks about the separation between Australian Tertiary and Recent echinoid faunas (pp. 28–29).
- Tate, R., 1879a. The Anniversary Address of the President. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia for 1878–1879*: xxxix–lxxv.
 Gives an outline of South Australian geology and compares number of fossil species, including echinoids, common to Upper Murravian and Muddy Creek Beds (p. liv); and Lower Aldinga Series and Upper Murravian/Muddy Creek Beds (p. lvii). Refers to *Lovenia forbesi*, *Monostychia australis* and *Clypeaster Gippslandicus* from the Victorian Miocene (p. lxxv).
- Tate, R., 1879b. The natural history of the country around the head of the Great Australian Bight. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia for 1878–1879* (volume 2): 94–128.
 Notes, in "Geology of the Bunda Plateau", the occurrence at Wilson's Bluff of *Echinus woodsi* in a yellow polyzoal bed and *Salenia* and *Cidaris* in a white polyzoal bed (p. 108). A schedule of fossils obtained *in situ* at Wilson's Bluff lists *Cidaris australiae* Duncan, *Salenia tertiaria* Tate, *Echinus woodsi* Laube and *Eupatagus coranguinum* Tate (p. 109).
- Tate, R., 1883. The botany of Kangaroo Island. *Transactions and Proceedings and Report of the Royal Society of South Australia* 6: 116–171.
 Notes *Echinolampas gambierensis* [= *E. posterocrassa*] a common fossil in bryozoal limestone cliffs at Roll's Point, Kingscote (p. 122).
- Tate, R., 1885a. Notes on the physical and geological features of the basin of the lower Murray River. *Transactions and Proceedings and Report of the Royal Society of South Australia* 7: 24–46, pl. 3.
 Refer section on "Palaeontology of the older Tertiary deposits" (pp. 35–41): Tate lists new echinoid species described by Laube (1869) and Duncan (1877), p. 37; notes *Clypeaster gippslandicus* McCoy from the Upper Murravian (p. 39); refers to *Catopygus elegans* occurring in an upper bed "about Mannum" (p. 39); lists 14 echinoid species from the Middle Murravian (p. 41); notes Lower Murravian occurrence of *Megalaster compressus* at Morundi, a few miles south of Blanchetown (p. 41). Numerous references to *Lovenia forbesii* throughout the paper.
- Tate, R., 1885b. Miscellaneous contributions to the Palaeontology of the older rocks of Australia. *Southern Science Record* 1 (n.s.): 1–5.
 Describes, but does not figure, *Fibularia gregata* sp. nov. (p. 4) and *Linthia antaustralis* sp. nov. (pp. 4–5).
- Tate, R., 1888. Census of the fauna of the Older Tertiary of Australia. *Journal and Proceedings of the Royal Society of New South Wales* 22: 240–253.
 Discusses relationships between Old Tertiary fauna and Recent fauna in southern and east temperate Australia with some references to echinoid genera (p. 243); lists Tertiary fossils common to Australia and New Zealand including echinoids *Cidaris australiae* (Duncan, 1877), *Echinus woodsi* Laube, 1869 and *Pericosmus compressus* McCoy, 1882 (pp. 246–247); lists 48 echinoid species from the Older Tertiary of Australia (pp. 251–252).
- Tate, R., 1890a. On the discovery of marine deposits of Pliocene age in Australia. *Transactions and Proceedings and Report of the Royal Society of South Australia* 13(2): 172–180. [Note: 'Contents' heading in journal "On the discovery of an older Pliocene Formation in South Australia"]
 Records echinoids (*Goniocidaris* sp., *Strongylocentrotus* sp.) etc. in a bore at Dry Creek, Adelaide, South Australia (p. 173).
- Tate, R., 1890b. The stratigraphical relations of the Tertiary Formations about Adelaide, with special reference to the Croydon bore. *Transactions and Proceedings and Report of the Royal Society of South Australia* 13(2): 180–184.
 Records *Laganum* and '*Echinus*' etc. at considerable depth (Older Pliocene) in the Croydon Bore, Adelaide, South Australia (p. 184).
- Tate, R., 1891. A bibliography and revised list of the described echinoids of the Australian Eocene, with descriptions of some new species. *Transactions and Proceedings and Report of the Royal Society of South Australia* 14(2): 270–282.
 Includes bibliography 1831–1890 (p. 270) and table of genera showing their geological range (p. 273); lists described species with synonymy and localities (p. 274); describes [but does not figure] *Cardiaster latecordatus* sp. nov. (p. 280); *Echinobrissus vincentinus* sp. nov. (p. 280); *Salenia globosa* sp. nov. (p. 279); *Scutellina patella* sp. nov. (p. 279) and *Schizaster abductus* sp. nov. (p. 281). Erects new species *Eupatagus decipiens* for *Pericosmus compressus* (Duncan) in Gregory, 1890 (p. 282).
- Tate, R., 1892. Critical remarks on A. Bittner's "Echiniden des Tertiars von Australien". *Transactions and Proceedings and Report of the Royal Society of South Australia* 15(2): 190–194.
 Author comments on Bittner's "forcible effort at species making" and reassigns some described species to other genera.
- Tate, R., 1893. Unrecorded genera of the older Tertiary fauna of Australia, including diagnoses of some new genera and species. *Journal and Proceedings of the Royal Society of New South Wales* 27: 167–197, pls 10–13.
 Describes and figures *Arachnoides incisa* sp. nov. (p. 192, pl. 13/3); *Laganum platymodes* sp. nov. (p. 193, pl. 13/4); *Sismondia murravica* sp. nov. (p. 193, pl. 13/5); *Conoclypeus rostratus* sp. nov. (p. 194, pl. 13/1). Also comments on the use of generic names *Coelopleurus*, *Paradoxechinus*, *Temnechinus*, *Scutellina*, *Monostychia*, *Arachnoides*, *Cardiaster*, *Cyclaster*, *Gualteria* (sic) and *Rhynchopygus*.
- Tate, R., 1898*. A second supplement to a census of the fauna of the Older Tertiary of Australia. *Journal and Proceedings of the Royal Society of New South Wales* 31: 381–412, pls 19–20. [* Journal cover shows 1897 as the publication date, however, other details indicate it was not printed until 1898]
 Includes note on the genus *Cidaris*, subgenus *Stereocidaris* (p. 411); comments that *Echinobrissus australiae* is a *Cassidulus* and *Scutellina* is a misprint for *Scutella* (p. 411); transfers *Conoclypeus rostratus* to the genus *Plesiolampas* [see subsequent change to *Echinolampas* in Lambert, 1898] and endorses Gregory's 1892 transfer of *Eupatagus decipiens* to the genus *Macropneustes* (p. 412).
- Tate, R. and Dennant, J., 1893. Correlation of the marine Tertiaries of Australia. Part 1., Victoria, with special notes on the Eocene beds at Spring Creek and at the mouth of the Gellibrand River. *Transactions and Proceedings and Report of the Royal Society of South Australia* 17(1): 203–226.
 Comments on presence of echinoids and includes, in table of fossils, a comparison of the echinoid fauna present at Spring Creek, Gellibrand, Camperdown, Muddy Creek and Mornington with brief references to some non-Victorian localities (pp. 225 and 226).
- Tate, R. and Dennant, J., 1895. Correlation of the marine Tertiaries of Australia. Part 2, Victoria (continued). Special notes on the Eocene beds at Cape Otway and River Aire, with general remarks. *Transactions of the Royal Society of South Australia* 19(1): 108–121.
 Includes table of fossils from Cape Otway, in which *Leiocidaris australiae* Duncan is the only echinoid listed (p. 115). Mentions echinoids in general from the Spring Creek section and adjacent areas [Jan Juc] but does not name any species (pp. 118–120).

- Tate, R. and Dennant, J., 1896. Correlation of the marine Tertiaries of Australia. Part 3., South Australia and Tasmania, with general remarks and appendices. *Transactions of the Royal Society of South Australia* 20(1): 118–148, pl. 2.
- Lists common fossils including *Laganum platymodes* from Halletts Cove (p. 121), and Port Willunga jetty (p. 123); includes palaeontology summary notes (p. 125); lists Eocene echinoids from Aldinga and Adelaide with occurrence at other localities (p. 130); lists Table Cape fossil echinoids (p. 132); includes echinoids in table of Lower Maude fossils collected by Dennant and Mulder (p. 146).
- Tepper, O., 1879. Introduction to the cliffs and rocks at Ardrossan, Yorke's Peninsula. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia* 2: 71–79.
- Refers to *Fibularia gregata* Tate [a nomen nudum] and abundant echinoderms occurring between Rogue's Point and Muloowurtie Point (p. 76). [Note: the species *Fibularia gregata* was not described by Tate until 1885].
- Termier, H. and Termier, G., 1953. Classe des échinides. Pp. 857–947 (French) in J. Piveteau (ed.), *Traité de Paléontologie*. Masson et Cie, Paris.
- In the section "Étude systématique", a brief description is given of most echinoid genera known at the time, with details of the author, date and time range. There are no references to specific names or geographic range, except where species are figured. No Australian species are illustrated, although the genus *Monostychia* is listed (p. 924).
- Thomas, G. A., 1965. An echinoid from the Lower Carboniferous of northwest Australia. *Proceedings of the Royal Society of Victoria* 79(1): 175–178, pl. 25.
- Describes and figures *Oligoporus* (?) sp. from the Septimus Limestone (? Early Visean), Mt Septimus, Bonaparte Gulf Basin, N.W. Australia (p. 176, pl. 25/1–2).
- Valenciennes, A., 1846. [Figures of echinoids]. In M. Abel du Petit-Thouars, *Voyage autour du monde sur la fregate la Vénus, pendant les années 1836–1839, Atlas de Zoologie*. Gide et Cie, Paris, 79 pls (French).
- Figures *Amblypneustes formosus* sp. nov. (Zoophytes pls 2/2, 2a–d), an extant species subsequently recorded as a fossil in 'marine' limestone, near Robe, South Australia and the Roe Calcarenite, near Madura, Western Australia (Foster and Philip 1980).
- Walker, C. A. and Ward, D. J., 1992. *Fossils* (Collins Eyewitness Handbooks). Collins Angus and Robertson Publishers Pty Limited, a division of Harper Collins Publishers (Australia) Pty Limited : Pymble, N.S.W. 320 pp.
- Briefly describes the genera *Coleopleurus**, with illustration of *Coleopleurus** *paucituberculatus* Gregory [= *Murrayvechinus*], p.179; and *Lovenia*, with illustration of *Lovenia forbesi* (Woods), p.185. [* incorrect spelling of the genus *Coelopleurus* A. Agassiz, 1840.]
- Webster, G. D. and Jell, P. A., 1992. Permian echinoderms from Western Australia. *Memoirs of the Queensland Museum* 32(1): 311–373.
- Records and figures *Cidaroid* indet. spine bases and fragmentary interambulacral plates from the type section of the Callythara Formation, Carnarvon Basin, W.A. (p. 369, fig. 31).
- Whatmough, R. J., 1982. The Cainozoic in the mid-north (6th. June 1982) with Mr Neville Alley. *Bulletin of the Field Geology Club of South Australia* 11(8): 7–11.
- Records *Lovenia forbesi* in creek bank near River Light, N. of Redbanks, South Australia. Also notes presence of other (unnamed) echinoids.
- White, M. E., 1990. *The nature of hidden worlds*. Reed Books Pty Ltd : Balgowlah, N.S.W. 256 pp.
- Illustrates an unnamed echinoid "from South Australia of Jurassic age" (p. 144) and *Lovenia forbesii* from Victoria (p. 201) [Note: the unnamed echinoid is clearly *Monostychia australis* of Early Miocene age; and *Lovenia forbesii* a specimen of *L. woodsii*]
- Whitehouse, F. W., 1924. Some Jurassic fossils from Western Australia. *Journal of the Royal Society of Western Australia* 11(1): 1–13, pls 1–2.
- Records and figures a spine of *Cidaris* sp. with other fossils collected at a watering stop on the Geraldton - Cue railway line [now referred to as the 'Bringo Railway Cutting'], 19 miles east of Geraldton (p. 1, pl. 1/a–b).
- Wilkins, R. W. T., 1963. Relationships between the Mitchellian, Cheltenhamian and Kalimnan Stages in the Australian Tertiary.
- Proceedings of the Royal Society of Victoria* 76: 35–59.
- Notes occurrence of *Clypeaster* in beds at Mississippi Creek road cutting (p. 42); McRae's Kiln, Toorloo Arm (p. 46); and with occasional *Arachnoides* at Toorloo Arm road cutting (p. 45). [No reference to echinoids in faunal list (Appendix)].
- Wilkinson, C. S., 1865. Report [relative to the Cape Otway country] dated 13th. March, 1865. Pp. 21–28 in *Geological Survey of Victoria, Report of the Director of the Geological Survey of Victoria for the period from June 1863 to September 1864, with appendices*. Parliamentary Papers 1864–1865.
- Notes echini spines and *Spatangus forbesii* from the upper beds at Spring Creek, Torquay (p. 23); and *Spatangus forbesii* from mouth of Curdie's Inlet (p. 24). [Note: reference to fossils "labelled No. 5" from Castle Cove, Victoria (p. 23), is presumably the locality referred to by Duncan (1877) when describing *Echinobrissus australiae* and *Rhynchopygus dysasteroides*].
- Woods J. E. Tenison, 1859. Remarks on a Tertiary deposit in South Australia. *Transactions of the Philosophical Institute of Victoria* 3: 85–94.
- Notes - "The *Spatangus forbesii* occurs at both Portland and Mount Gambier" (p. 91).
- Woods, J. E. Tenison, 1860. On some Tertiary rocks in the Colony of South Australia. *Quarterly Journal of the Geological Society of London* 16(3): 253–260.
- Notes *Spatangus forbesii* and some echinoderms (*Eupatagus*, *Echinolampas* and *Clypeaster*) from S.E. South Australia (p. 256).
- Woods J. E. Tenison, 1862. *Geological observations in South Australia, principally in the district south-east of Adelaide*. Longman, Green, Longman, Roberts and Green, London (H. T. Dwight, Melbourne, Victoria), xviii + 404 pp.
- Figures *Spatangus forbesii* from Mount Gambier (pp. 75, 83); '*Clypeaster*' and '*Echinolampas*' from Mt. Gambier (p. 77); spine of *Cidaris* from Mt. Gambier (p. 81); includes 6 genera of echinoids in a faunal list (p. 77), and refers to *Spatangus forbesii* from Portland (p. 121). [Note: figured '*Clypeaster*' is a *Monostychia*, and '*Echinolampas*' a *Cyclaster*]
- Woods, J. E. Tenison, 1865. On some Tertiary deposits in the Colony of Victoria, Australia. *Quarterly Journal of the Geological Society of London* 21(4): 389–394.
- Notes echinidae common at Mount Gambier, particularly *Echinolampas* and *Spatangus*, and rare at Hamilton (pp. 392–393). Also notes species differ between Mount Gambier and Hamilton.
- Woods, J. E. Tenison, 1867. The Tertiary rocks of South Australia, Part IV. - Fossil Echinidae. *Papers of the Adelaide Philosophical Society 1865–1866*: 2 pp, figs 1–3.
- Describes and figures *Echinolampas gambierensis* sp. nov. (fig. c) and *Hemaster archeri* sp. nov. (fig.2a–d); figures *Hemipatagus forbesi* Woods and Duncan (fig.3a–d). [Note: the drawing in fig. 3 is clearly that of *Lovenia woodsii* and not *L. forbesii* (refer Duncan, 1864).]
- Woods, J. E. Tenison, 1876. On some Tertiary fossils from Table Cape. *Papers and Proceedings and Report of the Royal Society of Tasmania for 1875*: 13–26, figs 1–4 (3 pls).
- Refers to *Hemipatagus forbesii* (Duncan), among fossils in the Museum of the Society, alleged to have been collected at Table Cape, Tasmania (pp. 14–15).
- Woods, J. E. Tenison, 1877. Notes on the fossils referred to in the foregoing paper [Johnston, R. M., 1877]. *Papers and Proceedings and Report of the Royal Society of Tasmania for 1876*: 91–116.
- Notes *Micraster brevistella* Laube (p. 116); describes *Micraster etheridgei* sp. nov. and *Hemipatagus woodsii* var. A. (p. 116). [Note: the above specific names were given by Woods to descriptions made by Johnston (1877), however the new species have always been attributed to Johnston by subsequent authors]
- Woods, J. E. Tenison, 1878a. On the Tertiary deposits of Australia. *Journal and Proceedings of the Royal Society of New South Wales* (1877) 11: 65–82.
- Reviews Australian Tertiary deposits and refers to previous manuscripts containing descriptions of echinoids (pp. 68–69, 75). Notes occurrence of *Lovenia forbesii* at Portland, Victoria (p. 74) and *L. forbesii* and *Arachnoides australis* at Kadina, Moonta and Wallaroo mines on Yorke's Peninsula (p. 76).
- Woods, J. E. Tenison, 1878b. Palaeontological evidence of Australian

Tertiary formations. *Journal and Proceedings of the Royal Society of New South Wales* (1877) 11: 113–128.

Includes discussions on 'Echini' present in the Tertiary rocks of Victoria, south-eastern South Australia and north Tasmania with references to recent Australian forms reputedly found in the fossil record (p. 116). Also discusses and compares fossil forms with extant species recorded from Australian waters and overseas, in particular Malta (pp. 121–122, 125).

Woods, J. E. Tenison, 1878c. The Echini of Australia (including those of the Chevert Expedition). *The Proceedings of the Linnean Society of New South Wales* 2(2): 145–176.

Comments (p. 148) ... "I cannot find that there is much connection between our tertiary fossil fauna, and what we see in the present Australian seas...". Also comments (p. 169) that *Echinanthus testudinarius* Gray, "Is a fossil on the Murray River beds." [Remainder of paper discusses only Recent species.]

Wright, T. and Adams, A. L., 1864. On the fossil echinidae of Malta with additional notes on the Miocene Beds of the Island and the stratigraphical distribution of species therein. *Quarterly Journal of the Geological Society of London* 20: 470–491, pl. 21–22.

Notes and figures *Pygorhynchus vassali* from Malta (p. 479, pl. 22/6ac). [Note: Duncan (1877) incorrectly states that this species occurs east of the Glenelg River. References to *P. vassali* repeated in Etheridge (1875), Duncan (1887), Johnston (1888) and Tate (1888). These specimens have since been referred to either *Notolampas flosculus* Philip, 1963, or *Studeria elegans* (Laube, 1869).]

Zittel, K. A. von, 1865*. Fossile mollusken und echinodermen aus Neu-Seelan. Pp. 15–68, pls 6–15 (German) in F. von Hochstetter, M. Hornes and F. R. von Hauer (eds.), *Palaontologie von Neu-Seelan. Beitrage zur Kenntniss der Fossilen Flora und Fauna der Provinzen Ackland und Nelson. Novara-Expedition Geologischer Thiel* 1(2). [* date quoted in British Museum Library Catalogue as volume does not give a publication date]

Refers to *Spatangus forbesi* Tenison Woods, 1862, in discussion on new species of *Hemipatagus* from New Zealand (p. 64).

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Mortensen, T. (2)
- 1929 Brighton, A. G.
- 1930 Brighton, A. G.
- 1934 Chapman, F.
Chapman, F. and Crespin, I.
Chapman, F. and Cudmore, F. A.
Davies, A. M.
- 1935 Chapman, F. and Crespin, I.
Davies, A. M.
Mortensen, T.
- 1936 Colliver, F. S.
- 1937 Colliver, F. S.
- 1938 Clark, H. L.
Kenny, J. P. L.
- 1940 Mortensen, T.
- 1941 Nye, P. B.
Singleton, F. A.
- 1943 Baker, G.
Crespin, I. (2)
Gill, E. D.
Glaessner, M. F. and Parr, W. J.
Mortensen, T. (2)
- 1944 Baker, G.
Crespin, I.
- 1946 Clark, H. L.
- 1947 Gill, E. D.
- 1948 Clark, E. de C., Teichert, C. and McWhae, J. R. H.
Mortensen, T. (2)
- 1949 Carrol, D.
Fell, H. B.
- 1950 David, T. W. E.
King, D.
Mortensen, T.
- 1951 Mortensen, T.
- 1952 Gill, E. D.
Sherrard, K.
Sprigg, R. C.
- 1953 Fell, H. B.
Glaessner, M. F.
Reynolds, M. A.
- Termier, H. and Termier, G.
- 1955 Durham, J. W.
Neaverson, E.
Raggatt, H. G. and Crespin I.
- 1956 Brunnschweiler, R. O.
- 1957 Ludbrook, N. H.
Philip, G. M.
- 1958 Glaessner, M. F. and Wade,
Ludbrook, N. H. (2)
McWhae et al.
- 1959 Jones, P. J.
- 1961 Brunnschweiler, R. O.
Ludbrook, N. H.
- 1962 Kier, P. M.
Philip, G. M.
- 1963 Bowler, J. M.
Carter, A. N.
Fell, H. B.
Philip, G. M. (3)
Wilkins, R. W. T.
- 1964 Brown, I. A.
Fell, H. B.
Philip, G. M.
- 1965 Crawford, A. R.
Philip, G. M. (2)
Roman, J.
Talent, J. A.
Thomas, G. A.
- 1966 Bock, P. E. and Glenie, R.
Durham, J. W. et al.
Philip, G. M.
- 1967 Brown, I. A.
Kenley, P. R.
- 1968 Cockbain, A. E.
Hill, D., Playford, G. and Woods, J. T. (eds).
Jenkin, J. J.
Singleton, O. P.
- 1969 Ludbrook, N. H.
Philip, G. M.
- 1970 Fleming, P. J. G.
Foster, R. J (2)
Hocking, J. B.
Philip, G. M.
Philip, G. M. and Foster, R. J.
Stuart, W. J. Jnr.
- 1971 Davies, A. M.
Fletcher, H. O.
Kenley, P. R.
Philip, G. M.
Philip, G. M. and Foster, R. J.
- 1972 Quilty, P. G.
- 1973 Gostin, V. A.
Singleton, O. P.
- 1974 Foster, R. J.
Quilty, P. G.
- 1975 Davies, A. M.
Henderson, R. A.
Playford, P. E. et al.
Ripper, D. T.
- 1976 Abele, C.
Abele, C. et al.
Carmichael, E.
Corbett, D.
Foster, R. J. and Philip, G. M. (2)
Playford, P. E., Cockbain, A. E. and Low, G. H.
Pritchard, G. B.
- 1978 Foster, R. J. and Philip, G. M.
Kier, P. M. and Lawson, M. H.
Macumber, P. G.
Philip, G. M.

- 1979 Abele, C.
Cooper, B. J.
Daily, B. et al.
- 1980 Aslin, D.
Foster, R. J. and Philip, G. M.
McNamara, K. J. and Philip, G. M. (2)
Rose, E. P. F. and Olver J. B. S.
- 1981 Anon. (Holmes, F. C.)
- 1982 Whatmough, R. J.
- 1983 Bartrop, S.
Beardsmore, T.
Milnes, A. R. et al.
Sadler, T., Pledge, N. S. and Morris, B.
- 1984 McNamara, K. J. and Philip, G. M.
Smith, A. B.
- 1985 Carter, A. N.
Cooper, B. J.
Henderson, R. A. and
McNamara, K. J.
Kruse, P. M. and Philip, G. M.
McNamara, K. J. (2)
Murray, J. W.
Pledge, N. S.
Sadler, T. and Pledge, N. S.
- 1986 Carmichael, E.
McNamara, K. J.
McNamara, K. J., Philip, G. M. and Kruse, P. D.
- 1987 Hocking, R. M., Moors, H. T. and van de Graaff, J. E.
Holmes, F. C. (2)
McNamara, K. J. (4)
- 1988 Abele, C. (2)
Abele, C. et al.
Bolger, P.
Holmes, F. C.
Jenkin, J. J.
McNamara, K. J.
Rosengren, N.
- 1989 Holmes, F. C.
McNamara, K. J. (2)
McNamara, K. J. and Ah Yee, C.
Mooi, R.
- 1990 Archbold, N. W.
Hocking, R. M. (3)
McNamara, K. J.
Pledge, N. S. and Sadler, T.
White, M. E.
- 1991 Bell, K. N.
Brown, G. M. and Stephenson, A. E.
Holmes, F. C. (2)
McNamara, K. J. (2)
McNamara, K. J. and Friend, D.
- 1992 McKinney, M. L. et al.
McNamara, K. J. (2)
McNamara, K. J. and Brimmell, K.
Walker, C. A. and Ward, D. J.
Webster, G. D. and Jell, P. A.
- 1993 Holmes, F. C.
McNamara, K. J.

List of Genera and Species

Junior synonyms of currently accepted taxa (as originally published) are inset after the primary listing. Subsequent references are included only if authors have changed the generic name, or cited material has been redescribed as belonging to two or more separate species or subspecies. These latter entries are indicated by "(part)" after the author and date.

Junior synonyms are also listed alphabetically in their original combination with a reference to the currently accepted taxa.

Extant species, not recorded from the fossil record, are not listed.

The following abbreviations are used to indicate the families to which listed species belong, based on the Treatise on Invertebrate Paleontology, Part U, Echinodermata 3(1 and 2). [Note: only families represented in the Australian fossil record are included]

APA.	Apatopygidae	FOS.	Fossilasteridae
ARA.	Arachnoididae	HEM.	Hemiasteridae
ARB.	Arbaciidae	HOL.	Holasteridae
ARC.	Archaeocidaridae	LAG.	Laganidae
BRI.	Brissidae	LEP.	Lepidocentridae
CAS.	Cassidulidae	LOV.	Loveniidae
CID.	Cidaridae	NEO.	Neolampadidae
CLT.	Clypeasteridae	PAL.	Palaechinidae
CLY.	Clypeidae	PER.	Pericosmidae
COR.	Corystidae	PLI.	Pliolampadidae
DIA.	Diadematidae*	SAL.	Saleniidae
ECL.	Echinolampadidae	SCH.	Schizasteridae
ECM.	Echinometridae	SPA.	Spatangidae
ECN.	Echinoneidae	STR.	Strongylocentrotidae
FAU.	Faujasidae	TEM.	Temnopleuridae
FIB.	Fibulariidae	TOX.	Toxopneustidae*

* Philip (1965) described and figured fragments which indicate the occurrence of generically indeterminate representatives of these families in the Australian fossil record.

abductus, *Schizaster* (*Schizaster*)

aldingensis, *Prenaster*

Amblypneustes formosus Valenciennes, 1846 (TEM)

Amblypneustes sp. of Foster and Philip, 1980 (TEM)

Ammotrophus crassus (H.L.Clark, 1938).—Mortensen, 1948 (ARA)

: *Hesperaster crassus* H.L.Clark, 1938

Amoraster paucituberculata McNamara and Ah Yee, 1989 (BRI)

Amoraster tuberculata McNamara and Ah Yee, 1989 (BRI)

annulatus, *Microcyphus*

anomalus, *Eupatagus*

anomala, *Maretia* [refer *Eupatagus anomalus*]

antiaustralis, *Protenaster*

antiquus, *Strongylocentrotus*

Apatopygus vincentinus (Tate, 1891).—Philip, 1970 (APA)

: *Echinobrissus Vincentinus* Tate, 1891

: *Nucleolites vincentinus*.—H.L.Clark, 1946

apokryphos, *Psephoaster*

Apoxyptalum chenjafr McNamara, 1993 (BRI)

Archaeocidaris selwyni Etheridge, 1892 (ARC)

archeri, *Cylaster*

Australanthus longianus (Gregory, 1890).—Bittner, 1892 (FAU)

: *Cassidulus longianus* Gregory, 1890

australiae, *Brochopleurus* [refer *Ortholophus* and

Paradoxechinus species]

australiae, *Cibaster* (*Duncaniaster*) [refer *Corystus dysasteroides*]

australiae, *Duncaniaster* [refer *Corystus dysasteroides*]

australiae, *Eurhodia*

australiae, *Galeraster* [refer *Corystus dysasteroides*]

australiae, *Granobrissoidea*

australiae, *Holaster* [refer *Corystus dysasteroides*]

australiae, *Stereocidaris* [refer also *Austrocidaris*, *Stylocidaris* and *Phyllacanthus* species]

australis, *Brissopsis*

australis, *Echinocorys*

australis, *Monostychia*

australis var. *elongata*, *Monosatychia*

australis, *Protenaster*

Austrocidaris operata Philip, 1964 (CID)

: *Stereocidaris australiae* (Duncan).—Chapman and Cudmore, 1934 (part.)

: *Goniocidaris prunispinosa* Chapman and Cudmore.—Chapman and Cudmore, 1934 (part.)

- bellissae*, *Giraliaster*
bitneri, *Ortholophus*
brevis, *Peraspatangus*
brevistella, *Cyclaster* [refer *Cyclaster archeri*]
brevistella, *Micraster* [refer *Cyclaster archeri*]
Breynia aff. *carinata* d'Archiac and Haime, 1853.—
 McNamara, 1988 (LOV)
Brissopsis australis McNamara, Philip and Kruse, 1986
 (BRI)
Brissopsis praeluzonica Fell, 1964 (BRI)
Brissopsis tatei Hall, 1907 (BRI)
Brissus fosteri McNamara, Philip and Kruse, 1986 (BRI)
bullarensis, *Cardabia*
- callidus*, *Hemiaster* (*Bolbaster*)
Cardabia bullarensis Foster and Philip, 1978 (COR)
carinatus, *Schizaster* (*Paraster*)
Cassidulus floescens Gregory, 1892 (CAS)
 : *Procassidulus floescens* .— Lambert and Thiéry, 1921
Cavanechinus warreni Brown, 1967 (LEP)
celsus, *Pericosmus*
cetus, *Eupatagus*
chapmani, *Stylocidaris* (?)
chenjafra, *Apoxyptalum*
clarkii, *Chondrocidaris* [refer *Menocidaris* and *Stereocidaris*
 species]
clarkii clarkii, *Phyllacanthus*
clarkii impensus, *Phyllacanthus*
Clypeaster gippslandicus McCoy, 1879 (CLT)
 : *Echinanthus testudinarius* Duncan (non Gray), 1877
Clypeus cf. *ichelini* (Wright, 1854).— Rose and Olver, 1980
 (CLY)
collabus, *Eupatagus*
compressus, *Pericosmus* [refer also other *Pericosmus* species
 and *Meoma tuberculator*]
compta, *Lenicyamida*
compta, *Menocidaris*
comptoni, *Goniocidaris*
concinna, *Pisolampas*
concinna, *Echinobrissus* [refer *Pisolampas concinna*]
coranguinum, *Eupatagus* [refer *Gillechinus cudmorei*]
Corystus dysasteroides (Duncan, 1877).— Pomel, 1883
 (COR)
 : *Rhynchopygus dysasteroides* Duncan, 1877
 : *Holaster australiae* Duncan, 1877
 : *Holaster difficilis* Duncan, 1887
 : *Galeraster Australiae* Cotteau, 1890
 : *Lampadocorys Australiae* .— Lambert, 1893
 : *Duncaniaster Australiae* .— Lambert, 1896
 : *Cibaster (Duncaniaster) Australiae* .— Lambert and
 Thiéry, 1924
crawfordi, *Pericosmus* (part.) [refer *Pericosmus compressus*]
Cryptechinus humilior (Bittner, 1892).— Philip, 1969
 (TEM)
 : *Psammechinus* (?) *humilior* Bittner, 1892
 : *Psammechinus Woodsi* .— Tate, 1892 (part.)
 : *Echinopsis humilior* .— Lambert and Thiéry, 1910
 : *Pseudechinus woodsi* .— H.L.Clark, 1946 (part.)
 : (non) *Psammechinus Woodsi* Laube, 1869
cudmorei, *Gillechinus*
cudmorei, *Stereocidaris*
Cyamida paucipora Brunnschweiler, 1961 (FIB)
Cyclaster archeri (Tenison Woods, 1867).— Lambert and
 Thiéry, 1924 (BRI)
 : *Hemiaster Archeri* Tenison Woods, 1867
 : *Micraster brevistella* Laube, 1869
 : *Hemiaster posita* Hutton, 1873
 : *Brissopsis* (sic) *Archeri* .— Tate, 1885
 : *Cyclaster Morgani* Cotteau, 1889
 : *Cyclaster lycoperdon* Bittner, 1892
 : *Micraster Archeri* .— Tate, 1892
 : *Cyclaster posita* .— Tate, 1894
decipiens, *Eupatagus* [refer *Meoma tuberculata*]
decipiens, *Macropneustes* [refer *Meoma tuberculata*]
decipiens, *Meoma* [refer *Meoma tuberculata*]
decipiens, *Schizobrissus* [refer *Meoma tuberculata*]
Deliocidaris prunispinosa (Chapman and Cudmore, 1928).—
 Philip, 1964 (CID)
 : *Goniocidaris prunispinosa* Chapman and Cudmore in
 Chapman, 1928 (part.)
dennanti, *Echinoneus*
depressus, *Peraspatangus*
difficilis, *Holaster* [refer *Corystus dysasteroides*]
dolosus, *Hemiaster* (*Bolbaster*)
duncani duncani, *Phyllacanthus*
duncani, *Echinolampas* [refer *Echinolampas laubei*]
duncani gambierensis, *Phyllacanthus*
dysasteroides, *Corystus*
- Echinocorys australis* Foster and Philip, 1978 (HOL)
 : *Echinocorys sulcatus* Goldfuss.— Brunnschweiler, 1956
Echinocorys stomias McNamara, 1987 (HOL)
Echinocyamus planissimus H.L.Clark, 1938 (FIB)
Echinolampas gambierensis Tenison Woods, 1867 (ECL)
Echinolampas gregoryi corrugata McNamara and Philip, 1980
 (ECL)
Echinolampas gregoryi gregoryi McNamara and Philip, 1980
 (ECL)
Echinolampas laubei nom. nov. McNamara, 1987 (ECL)
 : *Echinolampas duncani* McNamara (non Cotteau), 1987
 : *Echinolampas ovulum* .— Duncan, 1887 .— Gregory,
 1890
Echinolampas morgani Cotteau, 1890 (ECL)
Echinolampas ovulum Laube, 1869 (ECL)
Echinolampas posterocrassa curtata McNamara and Philip,
 1980 (ECL)
Echinolampas posterocrassa posterocrassa
 Gregory, 1890 (ECL)
 : *Echinolampas posterocrassus* Gregory, 1890
 : *Progonolampas novae-hollandiae* Bittner, 1892
Echinolampas tatei Lambert, 1898 (ECL)
 : *Conoclypeus rostratus* Tate, 1893
 : *Plesiolampas rostratus* .— Tate, 1898
Echinolampas aff. *tatei* .— McNamara and Philip, 1980
 (ECL)
Echinolampas westraliensis (Crespin, 1943).— McNamara
 and Philip, 1980b (ECL)
 : *Conoclypeus westraliensis* Crespin, 1943
 : *Hypsoclypus westraliensis* .— Brunnschweiler, 1961
Echinometra mathaei (Blainville, 1825).— Blainville, 1830
 (ECM)
 : *Echinus mathaei* Blainville, 1825
Echinoneus dennanti Hall, 1907 (ECH)
elegans, *Studeria*
etheridgei, *Monostychia*
Euclidaris strombilata felli Philip, 1963 (CID)
- Eupatagus anomalus* (Duncan, 1877).— Kruse and
 Philip, 1985 (BRI)
 : *Maretia anomala* Duncan, 1877
Eupatagus cetus Kruse and Philip, 1985 (BRI)
Eupatagus collabus Kruse and Philip, 1985 (BRI)
 : *Eupatagus* sp. nov. cf. *australiae* (Cotteau, 1889)
 Philip, 1970
Eupatagus ludbrookae Kruse and Philip, 1985 (BRI)
Eupatagus murrayensis Laube, 1869 (BRI)
 : *Euspatangus Murrayensis* .— Bittner, 1892
 : *Brissoides murrayensis* .— Lambert and Thiéry, 1924
Eupatagus cf. *murrayensis* Laube.— Kruse and Philip, 1985
 (BRI)
Eupatagus planulatus Kruse and Philip, 1985 (BRI)

- Eupatagus rotundus* Duncan, 1877 (BRI)
: *Euspatangus rotundus* .— Bittner, 1892
: *Brissoides rotundus* .— Lambert and Thiéry, 1924
- Eupatagus wrighti* Laube, 1869 (BRI)
: *Brissoides Wrighti* .— Lambert and Thiéry, 1924
- Eurhodia australiae* (Duncan, 1877).— Philip, 1970 (PLI)
: *Echinobrissus australiae* Duncan, 1877
: *Cassidulus australiae* .— Tate, 1898
: *Nucleolites australiae* .— H.L.Clark, 1946
- Evechinus palatus* Philip, 1969 (ECM)
exiguus, *Fossilaster*
- Fellaster incisa* (Tate, 1893).— Foster and Philip, 1970 (ARA)
: *Arachnoides incisa* Tate, 1893
: *Echinarachnius incisis* .— Lambert and Thiéry, 1925
- Fibularia gregata* Tate, 1885 (FIB)
: *Fibularia Tatei* Bittner, 1892
: *Echinocyamus gregatus* .— Lambert and Thiéry, 1914
- florescens*, *Cassidulus*
flosculus, *Notolampas*
folium, *Clypeaster* [refer *Monostychia australis*]
forbesii, *Lovenia*
formosus, *Amblypneustes*
Fossilaster exiguus Philip and Foster, 1971 (FOS)
Fossilaster halli Lambert and Thiéry, 1925 (FOS)
fosteri, *Brissus*
fosteri, *Schizaster* (*Schizaster*)
fosteri, *Stereocidaris*
- gambierensis*, *Echinolampas*
gigas, *Victoriaster*
Gillechinus cudmorei Fell, 1964 (BRI)
: *Eupatagus cor-anguinum* Tate (ms.).— Pritchard, 1892
: *Brissopatagus cudmorei* .— Philip, 1966
- gippslandicus*, *Clypeaster*
Giraliaster bellissae Foster and Philip, 1978 (HOL)
Giraliaster jubileensis Foster and Philip, 1978 (HOL)
Giraliaster sulcatus (Hutton, 1873).— Foster and Philip, 1978 (HOL)
: *Amphidotus sulcatus* Hutton, 1873 (New Zealand only)
: *Cardiaster latecordatus* Tate, 1891
- Giraliaster tertarius* (Gregory, 1890).— Foster and Philip, 1978 (HOL)
: *Cardiaster tertarius* Gregory, 1890
: *Holaster tertarius* .— Lambert and Thiéry, 1924
- globosa*, *Salenia* [refer *Salenidia tertaria*]
Goniocidaris comptoni (Glauert, 1923).— McNamara, 1986 (CID)
: *Cidaris comptoni* Glauert, 1923
- Goniocidaris murrayensis* Chapman and Cudmore, 1934 (CID)
: *Goniocidaris pentaspinosa* Chapman and Cudmore, 1928 (part.) and Chapman and Cudmore, 1934 (part.)
: *Goniocidaris prunispinosa* Chapman and Cudmore, 1934 (part.)
- Goniocidaris* (?) *pentaspinosa* Chapman and Cudmore, 1928 (part.) (CID)
Goniocidaris praecipua Philip, 1964 (CID)
Goniocidaris tubaria hallettensis nom. nov. Philip, 1964 (CID)
: *Goniocidaris mortenseni* Chapman and Cudmore, 1934
- Goniosigma murrayensis* (Philip, 1969).— Philip, 1971 (TEM)
: *Asaphechinus murrayensis* Philip, 1969
- Goniosigma princeps* (Philip, 1969).— Philip, 1971 (TEM)
: *Asaphechinus princeps* Philip, 1969
- Goniosigma singletoni* (Philip, 1969).— Philip, 1971 (TEM)
: *Asaphechinus singletoni* Philip, 1969
- Goniosigma tasmanensis* (Philip, 1969).— Philip, 1971 (TEM)
: *Asaphechinus tasmanensis* Philip, 1969
- Grammechinus meridionalis* Philip, 1969 (TEM)
Granobrissoides australiae (Cotteau, 1889).— Lambert, 1920 (BRI)
: *Gualtieria Australiae* Cotteau, 1889
- granulosus*, *Paradoxechinus*
gregata, *Fibularia*
gregatus, *Echinocyamus* [refer *Fibularia gregata*]
gregoryi corrugata, *Echinolampas*
gregoryi gregoryi, *Echinolampas*
- halli*, *Fossilaster*
halli, *Schizaster* (*Schizaster*)
Heliocidaris ludbrookae Philip, 1964 (ECM)
Hemiaster (Bolbaster) callidus McNamara, 1987 (HEM)
Hemiaster (Bolbaster) dolosus McNamara, 1987 (HEM)
Hemiaster (Bolbaster) planedeclevis Gregory, 1890 (HEM)
Hemiaster (Bolbaster) subidus McNamara, 1987 (HEM)
Hemiaster (Bolbaster) verecundus McNamara, 1987 (HEM)
Hemiaster sweeti (Etheridge, 1892).— Hill, Playford and Woods, 1968 (HEM)
: *Micraster Sweeti* Etheridge, 1892
- hentyi*, *Irenechinus* [refer *Ortholophus pulchellus*]
hispida, *Stereocidaris* (?)
hoffmanni, *Spatangus* [refer *Lovenia forbesii*]
humilior, *Cryptechinus*
- incisa*, *Fellaster*
incisus, *Echinarachnius* [refer *Fellaster incisa*]
inermis, *Stereocidaris*
intricata, *Stereocidaris*
irregularis, *Phyllacanthus*
- jubileensis*, *Giraliaster*
- klydonos*, *Psephoaster*
- latecordatus*, *Cardiaster* [refer *Giraliaster sulcatus*]
laubei, *Echinolampas*
laubei, *Spatagobrissus*
Lenicyamida compta Brunnschweiler, 1961 (FIB)
Lepedocentroid indet. Talent, 1965
lesueri augusta, *Peronella*
lineatus, *Ortholophus* [refer also *Ortholophus bittneri*]
Linthia pulchra McNamara, 1985 (SCH)
lissos, *Psephoaster*
longianus, *Australanthus*
loveni, *Monostychia*
Lovenia forbesii (Tenison Woods, 1862).— Duncan, 1877 (LOV)
: *Spatangus hoffmanni* Sturt (non Goldfuss), 1833
: *Spatangus forbesii* Tenison Woods, 1862
: *Hemipatagus forbesi* .— Duncan, 1864
: *Sarsella forbesii* .— Bittner, 1892
- Lovenia woodsii* (Etheridge, 1875).— Duncan, 1877 (LOV)
: *Hemipatagus woodsii* Etheridge, 1875
- ludbrookae*, *Eupatagus*
ludbrookae, *Heliocidaris*
lycoperdon, *Cyclaster* [refer *Cyclaster archeri*]
- maccoyi*, *Pericosmus*
mathaei, *Echinometra*
Menocidaris compta Philip, 1964 (CID)
: *Chondrocidaris clarkii* Chapman and Cudmore, 1934 (radioles part.)
- Meoma tuberculata* Hutton, 1873 (BRI)
: *Pericosmus tuberculatus* .— Hutton, 1888
: *Pericosmus compressus* (Duncan).— Gregory, 1890
: *Eupatagus decipiens* Tate, 1891

- : *Macropneustes decipiens* — Gregory, 1892
 : *Eupatagus (?) tuberculatus* — Tate, 1894
 : *Meoma decipiens* — Tate and Dennant, 1896
 : *Schizobrissus decipiens* — Foster, 1970
- merionalis, Grammechinus**
Microcyphus annulatus Mortensen, 1904 (TEM)
mirabilis, Pentechinus
Monostychia australis Laube, 1869 (ARA)
 : *Scutella* sp. Sturt, 1833
 : *Clypeaster folium* Duncan (non Agassiz), 1864
 : *Arachnoides australis* — Duncan, 1877
 : *Clypeaster (Monostychia) australis* — Duncan, 1887
Monostychia australis var. *elongatus* (Duncan, 1877).—
 Pomel, 1883 (ARA)
 : *Arachnoides elongatus* Duncan, 1877
 : *Clypeaster (Monostychia) australis* var. *elongata* —
 Duncan, 1887
Monostychia etheridgei (Johnston, 1877).— Johnston, 1888a
 (ARA)
 : *Micraster etheridgei* Johnston*, 1877 [* see 'Note' in
 bibliography - Woods, 1877]
Monostychia loveni (Duncan, 1877).— McCoy, 1879 (ARA)
 : *Arachnoides Loveni* Duncan, 1877
 : *Clypeaster (Monostychia) loveni* — Duncan, 1887
mooraboolensis, Linthia [refer *Victoriaster gigas*]
morganensis, Ortholophus
morgani, Cyclaster [refer *Cyclaster archeri*]
morgani, Echinolampas
morgani, Scutellinoides
mortenseni, Goniocidarid [refer *Goniocidarid tubaria*
hallettensis]
Murravechinus paucituberculatus (Gregory, 1890).— Philip,
 1965b (ARB)
 : *Coelopleurus paucituberculatus* Gregory, 1890
 : *Murravechinus spinosus* Tate (ms.), 1891
murravica, Sismondia
murrayensis, Eupatagus
murrayensis, Goniocidarid
murrayensis, Goniosigma
- nelsoni, Waurnia**
Notolampas flosculus Philip, 1963 (NEO)
 : *Pygorhynchus Vassali* Wright — Tate, 1891
 : (non) *Pygorhynchus Vassali* Duncan (non Wright), 1877
novaehollandiae, Progonolampas [refer *Echinolampas*
posterocrassa posterocrassa]
novus, Paradoxechinus [refer also *Ortholophus* species]
nodus, Tatechinus
- Oligoporus (?) sp.** Thomas, 1966 (PAL)
operata, Austrocidaris
orbicularis, Peronella
Ortholophus bittneri Philip, 1969 (TEM)
 : *Coptechinus lineatus* Bittner, 1892
 : *Paradoxechinus novus* — Tate, 1892 (part.)
 : *Paradoxechinus lineatus* (Bittner).— Lambert and Thiéry,
 1910
 : *Paradoxechinus lineatus* (Duncan).— Mortensen, 1942
 (part.)
 : *Paradoxechinus novus* — Fell and Pawson, 1966
 : (non) *Temnechinus lineatus* Duncan, 1877
Ortholophus lineatus (Duncan, 1877).— Duncan, 1887 (TEM)
 : *Temnechinus lineatus* Duncan, 1877
 : *Paradoxechinus novus* — Tate, 1892 (part.)
 : *Prionechinus lineatus* — Lambert and Thiéry, 1910
 : (non) *Paradoxechinus novus* Laube, 1869
Ortholophus morganensis Philip, 1969 (TEM)
 : *Paradoxechinus novus* Laube.— Tate, 1892
 : (non) *Paradoxechinus novus* Laube, 1869
Ortholophus pulchellus (Bittner, 1892).— Philip, 1966
 (TEM)
 : *Coptechinus pulchellus* Bittner, 1892
 : *Psammechinus Woodsi* Laube.— Tate (part.), 1892
 : *Arbacina pulchella* — Lambert and Thiéry, 1911
 : *Paradoxechinus pulchellus* — Mortensen, 1943 (part.)
 : *Progonechinus pulchellus* — Mortensen, 1943
 : *Pseudechinus woodsii* — H.L.Clark, 1946 (part.)
 : *Irenechinus hentyi* Fell, 1954
Ortholophus venustus Philip, 1969 (TEM)
Ortholophus woodsii (Laube, 1869).— Philip, 1966 (TEM)
 : ? *Echinus* sp. Sturt, 1833
 : *Psammechinus Woodsi* Laube, 1869
 : *Arbacina Woodsi* — Pomel, 1883
 : *Psammechinus Woodsi* var. *fascigar* Bittner, 1892
 : *Prionechinus Woodsi* — Lambert and Thiéry, 1911
 : *Pseudechinus woodsii* — H. L. Clark, 1946 (part.)
 : *Brochopleurus australiae* Fell, 1949 (part.)
- ovulum, Echinolampas**
Palaechinus sp. Mitchell, 1898 (PAL)
palatus, Evechinus
Paradoxechinus granulatus Philip and Foster, 1971 (TEM)
Paradoxechinus novus Laube, 1869 (TEM)
 : *Brochopleurus australiae* Fell, 1949 (part.)
Paradoxechinus profundus Philip and Foster, 1971 (TEM)
Paradoxechinus stellatus Philip and Foster, 1971 (TEM)
patella, Scutellinoides
paucipora, Cyamidia
paucituberculata, Amoraster
paucituberculatus, Murravechinus
pentaspinosus, Goniocidarid (?) [refer also *Goniocidarid*
murrayensis]
Pentechinus mirabilis Philip and Foster, 1971 (TEM)
Peraspatangus brevis Philip and Foster, 1971 (SPA)
Peraspatangus depressus Philip and Foster, 1971 (SPA)
peregrinus, Zenocentrotus
Pericosmus celsus McNamara and Philip, 1984 (PER)
Pericosmus compressus (Duncan, 1877).— Gregory, 1890
 (PER)
 : *Megalaster compressus* Duncan, 1877
 : *Linthia compressus* — H.L.Clark, 1946
 : *Pericosmus crawfordi* (Hutton).— Henderson, 1975 (part.)
 : (non) *Pericosmus compressus* McCoy, 1882
Pericosmus maccoyi Gregory, 1890 (PER)
 : *Pericosmus compressus* McCoy, 1882
Pericosmus quasimodo McNamara and Philip, 1984 (TEM)
Pericosmus torus McNamara and Philip, 1984 (PER)
Pericosmus sp. 'A' and sp. 'B' McNamara and Philip, 1984
 (PER)
Peronella lesueri augusta Pledge and Sadler, 1990 (PER)
Peronella orbicularis (Leske, 1778).— A. Agassiz, 1872–4
 (LAG)
 : *Echinodiscus orbicularis* Leske, 1778
Peronella platymodes (Tate, 1893) (LAG)
 : *Laganum platymodes* Tate, 1893
Peronella ricta (Gregory, 1892).— H. L. Clark, 1946 (LAG)
 : *Laganum decagonale* var. *rictum* Gregory, 1892
- philipi, Protenaster**
Phyllacanthus clarkii clarkii (Chapman and
 Cudmore, 1934).— Philip, 1963 (CID)
 : *Chondrocidaris clarkii* Chapman and Cudmore, 1934
 (part.)
 : *Phyllacanthus duncani* Chapman and Cudmore 1934,
 (part.)
Phyllacanthus clarki impensus Philip, 1963 (CID)
 : *Phyllacanthus duncani* Chapman and Cudmore, 1934
 (part.)
Phyllacanthus duncani duncani Chapman and Cudmore, 1934
 (CID)

- : *Leiocidaris* sp. Duncan, 1887
 : *Phyllacanthus duncani* Chapman and Cudmore 1934, (part.)
 : *Stereocidaris australiae* .— Chapman and Cudmore, 1934 (part.)
 : (non) *Leiocidaris australiae* Duncan, 1877
Phyllacanthus duncani gambierensis Philip, 1963 (CID)
 : *Phyllacanthus duncani* Chapman and Cudmore, 1934 (part.)
 : *Prionocidaris scoparia* Chapman and Cudmore, 1934 (part.)
 : *Stereocidaris australiae* .— Chapman and Cudmore, 1934 (part.)
 : (non) *Leiocidaris austr]iae* Duncan, 1877
Phyllacanthus irregularis Mortensen, 1928 (CID)
Phyllacanthus serratus Philip, 1963 (CID)
 : *Phyllacanthus duncani* Chapman and Cudmore, 1934 (part.)
Pisolampas concinna Philip, 1963 (NEO)
 : *Echinobrissus concinnus* Tate (ms.)
planedeclevis, *Hemiaster (Bolbaster)*
planissimus, *Echinocyamus*
planulatus, *Eupatagus*
platymodes, *Peronella*
posita, *Cyclaster* [refer *Cyclaster archeri*]
posita, *Hemiaster* [refer *Cyclaster archeri*]
posterocrassa curta, *Echinolampas*
posterocrassa posterocrassa, *Echinolampas*
praecipua, *Goniocidaris*
praeluzonica, *Brissopsis*
preaustralis, *Protenaster*
Prenaster aldingensis Hall, 1907 (SCH)
princeps, *Goniosigma*
profundus, *Paradoxechinus*
Protenaster antiaustralis (Tate, 1885).— McNamara, 1985a (SCH)
 : *Linthia antiaustralis* Tate, 1885
Protenaster australis (Grey, 1851).— Pomel, 1883 (SCH)
 : *Desoria Australis* Gray, 1851
 : *Linthia Australis* .— Agassiz, 1872
Protenaster philipi McNamara, 1985 (SCH)
Protenaster preaustralis McNamara, 1985 (SCH)
prunispinosa, *Deliocidaris*
prunispinosa, *Goniocidaris* [refer *Austrocidaris*, *Delocidaris* and *Goniocidaris* species]
Psephoaster apokryphos McNamara, 1987 (HEM)
Psephoaster klydonos McNamara, 1987 (HEM)
Psephoaster lissos McNamara, 1987 (HEM)
Pseudechinus sp. cf. *p. albocinctus* (Hutton).— Philip, 1969 (TEM)
pulchellus, *Ortholophus*
pulchra, *Linthia*
quasimodo, *Pericosmus*
ricta, *Peronella*
rostratus, *Conoclypeus* [refer *Echinolampas tatei*]
rostratus, *Plesiolampas* [refer *Echinolampas tatei*]
rotundas, *Eupatagus*
Salenida tertiaria (Tate, 1877).— H. L. Clark, 1946 (SAL)
 : *Salenia tertiaria* Tate, 1877
 : *Pleurosalenia tertiaria* .— Pomel, 1883
 : *Salenia globosa* Tate, 1891
Schizaster (Dipneustes) fosteri McNamara and Philip, 1980 (SCH)
Schizaster (Paraster) carinatus McNamara and Philip, 1980 (SCH)
Schizaster (Paraster) tatei McNamara and Philip, 1980 (SCH)
Schizaster (Schizaster) abductus Tate, 1891 (SCH)
Schizaster (Schizaster) halli McNamara and Philip, 1980 (SCH)
Schizaster (Schizaster) aff. halli McNamara and Philip, 1980 (SCH)
Schizaster (Schizaster) sphenoides Hall, 1907 (SCH)
scoparia, *Prionocidaris* [refer *Stylocidaris* and *Phyllacanthus* species]
scoparia, *Stylocidaris* (?)
scutellaris, Willungaster
Scutellinoides morgani (Cotteau, 1891).— Durham, 1955 (FOS)
 : *Scutellina Morgani* Cotteau, 1891
 : *Fibularia (Eoscutum) Morgani* .— Lambert and Thiéry, 1914
Scutellinoides patella (Tate, 1891).— Durham, 1955 (FOS)
 : *Scutellina patella* Tate, 1891
 : *Echinocyamus (Scutellina) patella* .— Chapman, 1913
 : *Fibularia (Scutellina) patella* .— Lambert and Thiéry, 1914
selwyni, *Archaeocidaris*
serratus, *Phyllacanthus*
singletoni, *Goniosigma*
Sismondia murravica Tate, 1893 (LAG)
Spatagobrissus laubei (Duncan, 1877).— McNamara, Philip and Kruse, 1986 (BRI)
 : *Eupatagus Laubei* Duncan, 1877
 : *Brissoides Laubei* .— Lambert and Thiéry, 1924
sphenoides, *Schizaster*
spinus, *Murravechinus* [refer *Murravechinus paucituberculatus*]
stellatus, *Paradoxechinus*
Stereocidaris australiae (Duncan, 1877).— Chapman and Cudmore, 1934 (CID)
 : *Leiocidaris australiae* Duncan, 1877
 : *Cidaris (Stereocidaris) australiae* .— Tate, 1898 (part.)
 : *Cidaris (Leiocidaris) australiae* .— Chapman, 1914 [refer also *Stylocidaris* and *Phyllocanthus* species]
Stereocidaris cudmorei Philip, 1964 (CID)
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)
Stereocidaris fosteri Philip, 1964 (CID)
Stereocidaris inermis Philip, 1964 (CID)
 : *Goniocidaris inermis* Tate (ms.), 1893
Stereocidaris (?) hispida Philip, 1964 (CID)
Stereocidaris (?) intricata Philip, 1964 (CID)
Stereocidaris sp. 'A' of Philip, 1964 (CID)
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)
Stereocidaris sp. 'B' of Philip, 1964 (CID)
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)
 : *Chondrocidaris clarkii* Chapman and Cudmore, 1934 (part.)
Stereocidaris sp. 'C' of Philip, 1964 (CID)
stornias, *Echinocorys*
strombilata felli, *Eucidaris*
Strongylocentrotus antiquus Philip, 1965 (STR)
 : *Toxopneustes* sp. Tate (ms.)
Strongylocentrotus (?) sp. Philip, 1965 (STR)
Studeria elegans (Laube, 1869).— Duncan, 1889 (PLI)
 : *Catopygus elegans* Laube, 1869
 : *Pygorynchus Vassali* Duncan (non Wright), 1877
 : *Trismanthus elegans* .— Bittner, 1892
Stylocidaris (?) chapmani Philip, 1963 (CID)
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)
 : (non) *Leiocidaris australiae* Duncan, 1877
Stylocidaris (?) scoparia (Chapman and Cudmore, 1934).— Philip, 1963 (CID)
 : *Prionocidaris scoparia* Chapman and Cudmore, 1934 (part.)
Stylocidaris (?) sp. cf. *S. (?) scoparia* (Chapman and Cudmore, 1934).— Philip, 1963 (CID)
 : *Stereocidaris australiae* (Duncan).— Chapman and

- Cudmore, 1934 (part.)
 : *Prinocidaris scoparia* Chapman and Cudmore, 1934 (part.)
 : (non) *Leiocidaris australiae* Duncan, 1877
- subidus*, *Hemiaster* (*Bolbaster*)
sulcatus, *Echinocorys* [refer *Echinocorys australis*]
sulcatus, *Giraliaster*
sweeti, *Hemiaster*
- tatechinus*, *Goniosigma*
Tatechinus nudus Philip, 1969 (TEM)
 : *Psammechinus Woodsi* Laube.— Tate, 1892 (part.)
 : (non) *Psammechinus Woodsi* Laube, 1869
- tatei*, *Brissopsis*
tatei, *Echinolampas* [refer also *Echinolampas* aff. *tatei*]
tatei, *Fibularia* [refer *Fibularia gregata*]
tatei, *Schizaster* (*Paraster*)
tertiaria, *Salenidia*
tertiarius, *Giraliaster*
testudinarius, *Echinanthus* [refer *Cyclaster gippslandicus*]
torus, *Pericosmus*
tubaria, *Goniocidaris*
tubaria hallettensis, *Goniocidaris*
tuberculata, *Amoraster*
tuberculata, *Meoma*
tuberculatus, *Eupatagus* (?) [refer *Meoma tuberculata*]
tuberculatus, *Pericosmus* [refer *Meoma tuberculata*]
- vassali*, *Pygorhynchus* [refer *Notolampas flosculus* and
Studeria elegans]
venustus, *Ortholophus*
verecundus, *Hemiaster* (*Bolbaster*)
Victoriaster gigas (McCoy, 1882).— Lambert, 1920 (SCH)
 : *Pericosmus gigas* McCoy, 1882
 : *Linthia gigas* .— Pritchard, 1908
 : *Linthia mooraboolensis* Pritchard, 1908
- vincentinus*, *Apatopygus*
- warreni*, *Cavanechinus*
Waurnia nelsoni (McCoy, 1882).— McNamara and Philip,
 1984 (SCH)
 : *Pericosmus nelsoni* McCoy, 1882
 : *Linthia nelsoni* .— Pritchard, 1908
 : *Prenaster Nelsoni* .— Lambert and Thiéry, 1925
- westraliensis*, *Echinolampas*
Willungaster scutellaris Philip and Foster, 1971 (FOS)
woodsii, *Lovenia*
woodsii, *Ortholophus*
woodsii, *Psammechinus* [refer *Cryptechinus* and *Ortholophus*
 species]
woodsii, *Pseudechinus* [refer *Cryptechinus* and *Ortholophus*
 species]
wrighti, *Eupatagus*
Zenocentrotus peregrinus Philip, 1964 (ECM)

Manuscript names

The following manuscript names do not appear to have been referred to any described species : *Echinolampas Corioensis* McCoy, 1874

- Eupatagus Forbesii* McCoy, 1874
Laganum crassatinum Tate (ms.).— Pritchard, 1892
Monostychia deltoidalis Tate (ms.).— Pritchard, 1892
Monostychia Laubei Pomel, 1883
Monostychia patellus Tate (ms.).— Pritchard, 1892
Monostychia Woodsianna Mulder, 1893
Scutella marsupiata Chapman, 1916b
Scutella Tamboensis McCoy, 1874

In addition Etheridge (1878) introduced the name '*Echinolampas Australis*', attributed to Tenison Woods, 1865.

This is considered by Philip (1963) to be a *lapsus calami* for *Echinolampas gambierensis*.

Undescribed New Species

Philip, in Lowry (1970), schedules 35 species of echinoids from various localities in the Wilson Bluff, Toolinna and Abrakurrie Limestones, Eucla Basin, Western Australia, including the following new (unnamed) species:

- Aldingan
Linthia sp. nov.
Ortholophus sp. nov.

- Janjukian/Longfordian
Scutellinoides sp. nov.
Monostychia sp. nov. 'A' cf. *deltoides* Tate (ms.)
Monostychia sp. nov. 'B'
Eupatagus sp. nov. cf. *australiae* (Cotteau) [figured]
Eupatagus sp. nov. cf. *wrighti* (Laube)
Echinolampas sp. nov.
Paradoxechinus sp. nov. cf. *novus* Laube [figured]
Stylocidaris (?) sp. nov. cf. *scoparia* (Chapman and Cudmore)
Pisolampas sp. nov.
Monostychia sp. nov. 'C'

In addition *Monostychia* cf. *australis* Laube and *Monostychia* sp. nov. are recorded from the Colville Sandstone and Nullarbor Limestone, Eucla Basin, Western Australia.

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The fauna of the Pranjip-Creightons Creek system of northern Victoria

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Abstract. O'Connor, N.A. (1993). The fauna of the Pranjip-Creightons Creek system of northern Victoria. *Occasional Papers from the Museum of Victoria* 6: 54–60.

The macroinvertebrate and fish fauna are listed for ten sites on the Pranjip-Creightons Creek system of northern Victoria.

Introduction

The Pranjip-Creightons Creek system is a small lowland stream system draining the southwestern arm of the Strathbogie Ranges of north-central Victoria. The system has two main branches, the Pranjip Creek branch which consists of intermittent streams draining the peripheral slopes of the Strathbogie Ranges, and the Creightons Creek branch which consists of perennial streams arising from further within the Ranges. The headwater and midsections of the Creightons Creek branch, in particular, have been severely affected by large quantities of sand washed in from eroding creek banks along the headwaters. These sections of the stream system have a sandy substrate and little riparian vegetation. Further downstream, where the sand has yet to reach, Creightons and Pranjip Creeks have a muddy substrate, steep banks, a narrow but continuous belt of riparian river redgum

(*Eucalyptus camaldulensis*) and large quantities of submerged wood (O'Connor, 1991a, 1992). Ten sites along the system were sampled for macroinvertebrates on five occasions between winter 1984 and winter 1985 (Tables 1, 2). Details of the sampling procedures and further descriptions of study sites are given in O'Connor (1991b) and O'Connor and Lake (in press). Fish were also sampled on two occasions at each site by electrofishing (see O'Connor, 1991b for details) (Table 3). Three remaining species of aquatic vertebrates which were sighted incidentally along the system are listed here due to a paucity of published records of such observations. These were platypus (*Ornithorhynchus anatinus*) at Site 10, water rat (*Hydromys chrysogaster*) at Sites 9 and 10, and long-necked tortoise (*Chelodina longicollis*) at Sites 6 and 10.

Table 1. National map grid references and latitudes and longitudes for the ten study sites on the Pranjip-Creightons Creek system.

Site	National Map Name and no.	Grid reference	Latitude and Longitude	Site name
1	Euroa 8024	CV711107	36°56"S, 145°33"E	Creightons Creek
2	Euroa 8024	CV691153	36°53"S, 145°20"E	Tributary of Creightons Creek
3	Euroa 8024	CV690154	36°53"S, 145°20"E	Creightons Creek
4	Euroa 8024	CV687155	36°52"S, 145°20"E	Tributary of Creightons Creek
5	Euroa 8024	CV678235	36°49"S, 145°10"E	Creightons Creek
6	Nagambie 7924	CV602314	36°45"S, 145°25"E	Branjee Creek (anabranche of Creightons Creek)
7	Nagambie 7924	CV557353	36°43"S, 145°23"E	Branjee Creek
8	Nagambie 7924	CV496377	36°42"S, 145°19"E	Creightons Creek
9	Nagambie 7924	CV478383	36°42"S, 145°18"E	Pranjip Creek
10	Nagambie 7924	CV485465	36°36"S, 145°19"E	Pranjip Creek

TAXA	SITE										TAXA	SITE									
	1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10
? <i>Archaeophylax</i> sp.	-	1	1	-	-	-	-	-	-	-	<i>Chostonectes nebulosus</i> (A)	-	-	-	-	-	-	-	-	1	-
Glossosomatidae											<i>Chostonectes gigas</i> (A) Boh.	-	-	-	-	-	-	-	-	-	1
<i>Agapetus monticolus</i> Banks	1	-	-	-	-	-	-	-	-	-	<i>Platynectes decemaculatus</i> (A) Fab.	1	-	-	-	-	-	-	-	-	-
COLEOPTERA											<i>Platynectes</i> sp.1 (L)	1	-	-	-	-	-	-	-	-	-
Elmidae											? <i>Platynectes</i> sp.2 (L)	-	-	1	-	-	-	-	-	-	-
<i>Notriolus</i> sp. (A)	-	-	-	-	1	-	1	-	-	-	<i>Platynectes</i> sp.3 (L)	-	1	-	-	-	-	-	-	-	-
<i>Notriolus victoriae</i> (L) Cart. & Zeck	-	1	-	-	-	-	-	-	-	-	<i>Sternopriscus mundanus</i> (A)	-	-	1	1	1	-	1	-	-	-
<i>Notriolus victoriae</i> (A) Cart. & Zeck	-	1	-	-	-	-	1	-	-	-	<i>Sternopriscus</i> sp. (L)	-	-	1	-	-	-	-	-	-	-
<i>Notriolus quadraplagiatus</i> (A) Cart.	1	1	-	-	1	-	1	-	-	1	<i>Antiporus femoralis</i> (A) Boh.	-	-	-	-	-	1	-	-	-	-
<i>Notriolus quadraplagiatus</i> (L) Cart.	1	1	1	1	-	1	-	-	-	-	<i>Antiporus ?gilberti</i> (L) Clark	-	-	-	-	-	-	-	1	-	-
<i>Notriolus</i> near MVL43E (L)	-	-	-	-	-	-	-	-	1	-	<i>Allodessus bistrigatus</i> (A) Clark	-	-	1	-	-	-	-	-	-	1
<i>Notriolus maculatus</i> (A) Cart.	-	-	-	-	-	1	-	-	-	-	<i>Carabhydrus niger</i> (A)	-	1	-	-	-	-	-	-	-	-
<i>Notriolus maculatus</i> (L) Cart.	-	-	-	-	-	1	-	-	-	-	<i>Megaporus howitti</i> (A)	-	-	-	-	-	-	1	-	-	-
<i>Simsonia</i> MVL3ED (L)	1	1	1	1	-	1	-	-	-	1	<i>Lancetes lanceolatus</i> (A) Clark	-	-	-	-	-	-	-	1	-	-
<i>Simsonia</i> sp.1 (A)	-	1	-	-	-	-	-	-	-	-	Psephenidae										
<i>Simsonia</i> sp.2 (A)	-	-	1	-	-	-	-	-	-	-	<i>Sclerocyphon striatus</i> (L) Lea	-	1	1	1	-	-	-	-	-	-
<i>Simsonia</i> sp.1 (L)	-	1	-	-	-	-	-	-	-	-	Hydraenidae										
<i>Simsonia hopsoni</i> (L) Cart. & Zeck	-	1	-	-	-	-	-	-	-	-	<i>Octhebius</i> sp.(A)	-	-	-	-	1	-	-	-	-	-
<i>Simsonia</i> MVL12E (L)	-	-	-	-	-	1	-	-	-	-	Hydraenidae sp.1 (A)	-	-	-	-	-	1	-	-	-	-
<i>Austrolimnius</i> MVL62E (L)	1	1	1	1	1	1	1	-	-	-	Hydraenidae sp.2 (A)	-	-	-	-	-	1	-	-	-	-
<i>Austrolimnius</i> MVL10E (L)	1	2	3	1	-	-	1	-	-	-	Hydraenidae sp.3 (A)	-	-	-	-	-	-	1	-	-	-
<i>Austrolimnius hebrus</i> (A) Hinton	-	1	-	-	1	-	-	-	-	-	Hydraenidae sp.4 (A)	-	-	1	-	-	-	-	-	-	-
<i>Austrolimnius waterhousei</i> (A)	-	1	1	1	-	-	-	-	-	-	Hydraenidae sp.5 (A)	-	-	-	-	-	1	-	-	-	-
<i>Austrolimnius</i> near <i>hebrus</i> (A)	-	-	-	-	-	-	-	-	1	-	Hydraenidae sp.1 (L)	-	-	-	1	-	-	-	-	-	-
? <i>Austrolimnius</i> sp.1 (A)	-	1	-	-	-	-	-	-	-	-	Curculionidae										
<i>Austrolimnius</i> sp.2 (A)	-	-	1	-	1	-	-	-	-	-	? <i>Curculionidae</i> sp. (L)	-	-	-	-	-	-	-	-	-	2
<i>Austrolimnius</i> sp.3 (A)	-	1	-	-	1	-	-	-	-	-	Helodidae										
<i>Kingolus</i> near <i>tinctus</i> (L)	-	-	1	-	-	-	-	-	-	1	? <i>Cyphon</i> sp.1 (L)	2	2	1	1	-	-	-	-	-	-
? <i>Coxelmis</i> sp. (L)	-	-	-	-	-	-	-	-	1	-	? <i>Cyphon</i> sp.2 (L)	1	-	-	-	-	-	-	-	-	-
Hydrophilidae											? <i>Cyphon</i> sp.3 (L)	-	-	-	-	-	-	-	1	-	-
<i>Berosus</i> sp. (L)	-	-	1	1	1	-	-	-	-	-	Ptilodactylidae										
<i>Berosus queenslandicus</i> (A)	-	-	-	-	-	-	-	1	-	-	? <i>Byrrhocryptus</i> sp.1 (L)	1	-	-	-	-	-	-	-	-	-
<i>Berosus involutus</i> (A) MacLeay	-	-	-	-	-	2	-	-	-	-	Gyrinidae										
<i>Helochaeres australis</i> (A) Blackburn	-	-	-	-	-	-	-	1	-	-	<i>Macrogyrus viridisulcatus</i> (A) Mjöberg	-	-	-	-	-	-	-	-	2	-
<i>Laccopius</i> sp.1 (A)	-	-	-	-	-	1	-	-	-	-	<i>Aulonogyrus strigosus</i> (A) (Fab.)	-	-	1	-	1	1	-	-	-	2
<i>Laccopius</i> sp.2 (A)	-	-	1	1	-	-	-	-	-	-	Gyrinidae sp.1 (L)	-	-	-	-	-	1	-	-	-	2
<i>Enochrus</i> sp.1 (A)	1	-	-	-	-	-	-	-	-	-	Gyrinidae sp.2 (L)	-	-	-	-	-	-	-	-	-	1
<i>Enochrus</i> sp.2 (A)	-	-	-	1	-	-	-	-	-	-	Gyrinidae sp.3 (L)	1	-	-	-	-	-	-	-	-	-
<i>Paracymus pygmaeus</i> (A) MacLeay	-	-	-	-	-	1	-	-	-	-	Gyrinidae sp.4 (L)	-	-	-	-	-	-	-	-	1	-
Hydrophilidae sp.2 (L)	-	-	-	-	1	-	-	-	-	-	Hydrochidae										
Hydrophilidae sp.3 (L)	-	-	2	1	-	1	-	-	-	-	<i>Hydrochus</i> sp.1 (A)	-	-	-	-	-	1	-	-	-	-
Hydrophilidae sp.4 (L)	-	-	-	-	-	-	-	-	1	-	<i>Hydrochus</i> sp.2 (A)	-	-	-	-	-	1	-	-	-	-
Hydrophilidae sp.5 (L)	-	-	-	-	-	-	-	-	1	-	Limnichidae										
Hydrophilidae sp.6 (L)	-	-	-	-	-	-	-	-	1	-	Limnichidae sp. (A)	-	-	-	-	-	-	-	-	-	1
Dytiscidae											ODONATA										
<i>Necterosoma penicillatus</i> (A) Clark	-	-	-	1	-	1	-	-	-	-	Anisoptera										
<i>Necterosoma unidecimlineatum</i> (A)	-	-	-	-	-	-	-	-	1	-	Gomphidae										
<i>Necterosoma</i> sp.1 (L)	-	1	1	1	1	-	-	-	-	-	<i>Hemigomphus</i> sp.1	-	-	1	1	-	-	-	-	-	-
<i>Necterosoma</i> sp.2 (L)	-	-	1	-	-	-	-	-	1	1	<i>Hemigomphus</i> sp.2	-	-	-	1	-	-	-	-	-	-
<i>Chostonectes johnsoni</i> (A)	-	-	-	-	1	-	-	-	-	-	<i>Austrogomphus ochraceus</i> (Selys)	-	-	-	-	-	-	-	1	1	-

Table 3. Fish species and their abundance at each site. The first column for each site contains the number of fish caught by electrofishing in autumn (April 1985) and the second the number caught in spring (October 1985). The total number of fish caught in autumn was 148 and in spring, 13. Note that site 10 was too deep to sample in spring.

Species	Family*	Site									
		1	2	3	4	5	6	7	8	9	10
<i>Galaxias olidus</i>	Gal	-,-	-,-	-,-	2,-	67,3	2,6	52,-	-,-	-,-	-,-
<i>Gadopsis marmoratus</i>	Gad	-,-	-,3	-,-	-,-	-,-	-,-	-,-	-,-	-,-	1,-
<i>Nannoperca australis</i>	Kuh	-,-	-,-	-,-	-,-	1,-	-,-	-,-	-,-	-,-	-,-
<i>Hypseleotris ?klunzingeri</i>	Ele	-,-	-,-	-,-	-,-	1,-	-,-	1,-	-,-	-,-	-,-
<i>Retropinna semoni</i>	Ret	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-
<i>Perca fluviatilis</i> †	Per	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	3,-
<i>Tinca tinca</i> †	Cyp	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	1,-
<i>Cyprinus carpio</i> †	Cyp	-,-	-,-	-,-	-,-	-,-	-,-	4,-	-,-	-,1	13,-
Total		-,-	-,3	-,-	2,-	69,3	2,6	57,-	-,-	-,1	18,-

* Gal = Galaxiidae, Gad = Gadopsidae, Kuh = Kuhlidae, Ele = Eloetridae, Ret = Retropinnidae, Per = Percidae, Cyp = Cyprinidae.
† = exotic species

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