

DISCOVERY AND IDENTITY OF 110-YEAR-OLD HUTTON COLLECTION OF SOUTH AUSTRALIAN BRYOZOA

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A long-overlooked collection of bryozoans from South Australia described by Hutton in 1878 has been discovered and examined. Identifications are given for the species in the collection, with annotations. Although most of Hutton's names are junior synonyms of earlier-named species, two are senior and necessitate nomenclatural changes: *Adeonellopsis zietzii* (MacGillivray, 1889) becomes *A. baccata* (Hutton, 1878) and *Pyripora polita* (Hincks, 1880) becomes *Mychoplectra pocula* (Hutton, 1878).

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Examination of a collection of South Australian Bryozoa in the Otago Museum, Dunedin, New Zealand has yielded information on the identity of several nominal taxa that affects modern nomenclature. The collection, overlooked for 110 years, was discovered in 1988 following an enquiry from one of us (S.A.P.) as to its probable whereabouts.

Frederick Woollaston Hutton, an English-born and -educated geologist, was an important contributor to nineteenth-century New Zealand science. During his various appointments he had found it necessary to become a botanist and zoologist as well and described a wide range of organisms, including birds, fishes, molluscs, insects, worms, hydroids and Bryozoa. When, in 1876, he was appointed Professor of Natural Science at Otago University, he also had charge of the Otago Museum, which as Director and Curator he practically founded. While in this capacity, he received from Professor Ralph Tate, an Honorary Member of the Royal Society of Tasmania, a collection of bryozoans from the shores of Gulf St Vincent, South Australia. Hutton (1878) briefly described most of these, naming six as new. Unfortunately, none was illustrated and, probably for this reason, the identity of all but one of the new species has been unrealised. Further, the specimens remained unexamined in the Otago Museum for 110 years.

The collection comprises 20 species. Two are not mentioned in Hutton's (1878) paper whereas some other species mentioned in the paper are not in the collection. One to several specimens of each species was contained in a folded piece of paper with only a number to identify it. On a separate piece of paper in the same box as the specimens and in Hutton's faded inked handwriting was a key to the number with names alongside, the new species' names in pencil only (one new species-name was subsequently changed in

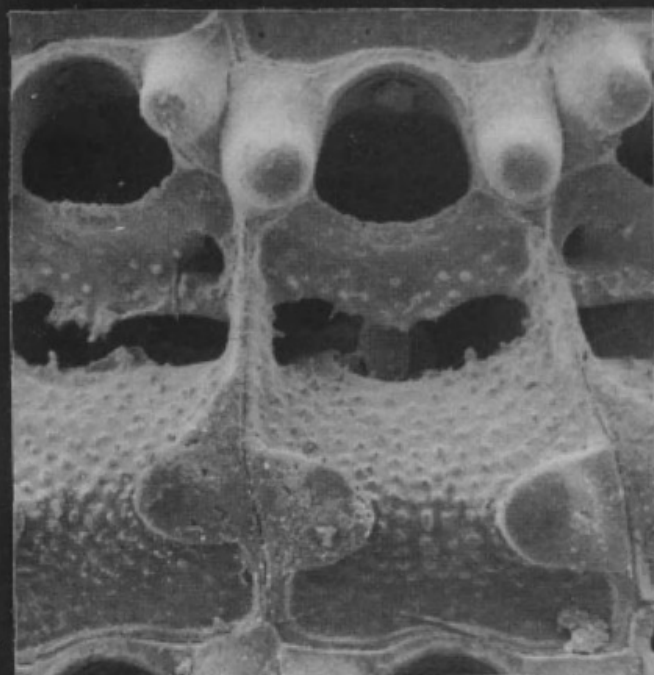
Hutton's paper but identifiable nonetheless). All of the specimens have now been labelled and registered (numbered A.88.148 to A.88.172 in the Otago Museum register). All six of Hutton's new species are represented. Hincks (1881) recognised that one was a senior synonym of a species described by himself in 1880. Now that the identities of the remaining five are known for the first time, it is apparent that two currently used names will have to drop into synonymy.

REVISION OF HUTTON'S LIST

In Hutton's (1878) three-page paper, 23 species are listed, nine of them (including the two resuscitated) accompanied by descriptive annotations. All are listed below, in the same order. For the 20 species still present in the Otago Museum collection, revised identifications are given where necessary. Registration numbers are given at the end of each entry.

1. *Caberea rudis*: *Caberea grandis* Hincks, 1881 [non *Amastigia rudis* (Busk, 1852)]. A.88.166.
2. *Membranipora lacroixi* [sic]. No specimen in collection. *M. lacroixii* Audouin, 1826 is currently regarded as a synonym of the extra-Australian *Conopeum reticulum* (Linnaeus, 1767).
3. *Membranipora* (?) *cincta*: *Diploporella alata* (Lamouroux, 1821), formerly *Thairopora cincta* (Hutton, 1878) (Fig. 1). Use of the generic name *Diploporella* MacGillivray, 1885a follows Soule *et al.* (1991), who re-separated this genus from *Thairopora*. Use of the trivial name *alata* follows Gordon & Parker (1991). *D. alata* is also a senior synonym of *Membranipora transversa* Hincks, 1880. A.88.161, holotype of *Membranipora* (?) *cincta* Hutton.

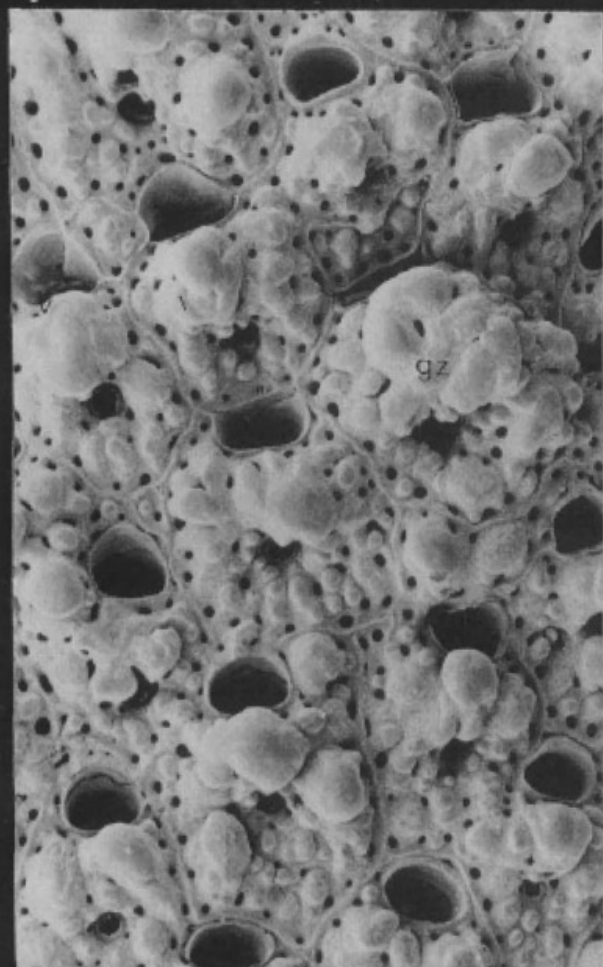
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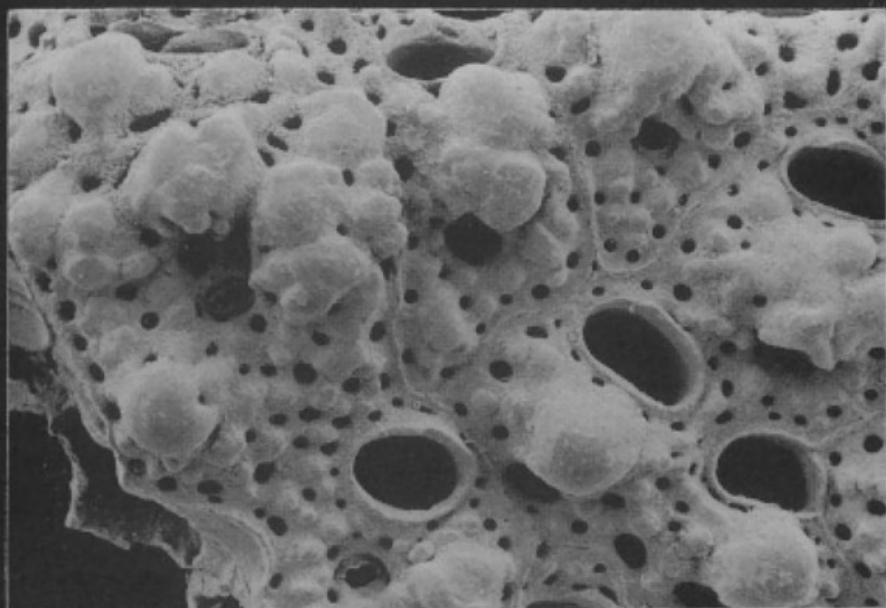


Micrographs 1, 2, 3, and 4 show the internal structure of a biological specimen, likely a cross-section of a plant stem or root. The images reveal a complex arrangement of large, dark, circular openings (pores or vessels) surrounded by a granular, textured material. Micrograph 4 includes a label 'gz' pointing to a specific feature.

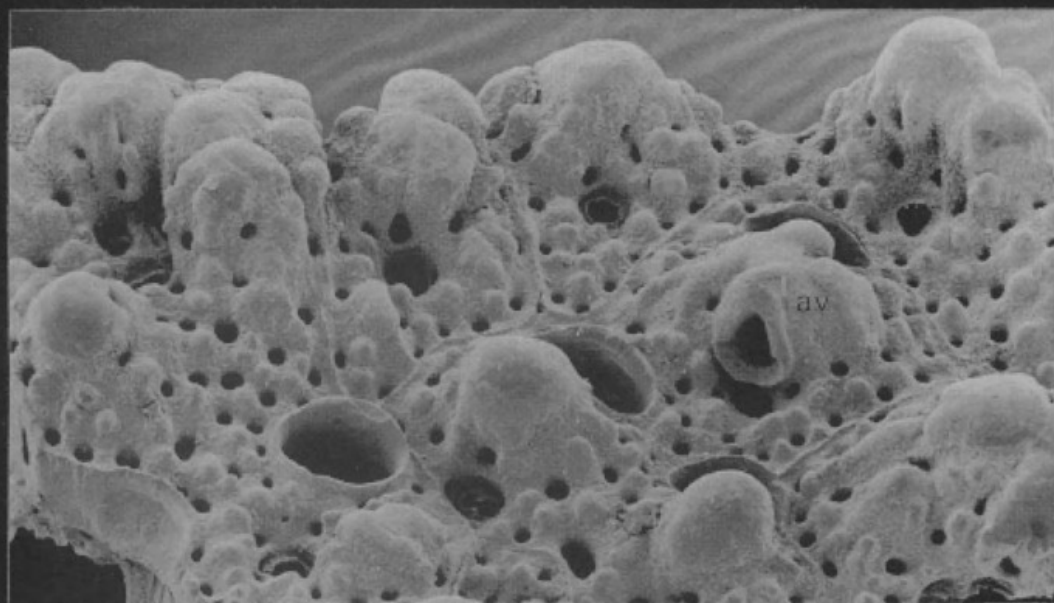
4. *Lepralia candida*: *Arachnopusia unicornis* (Hutton, 1873) [non *Fenestulina candida* (MacGillivray, 1860a)]. A.88.163.
5. *Lepralia elegans*: *Adeonellopsis sulcata* (Milne Edwards, 1836) [non *Hippoporina elegans* (MacGillivray, 1860b)]. A.88.168.
6. *Lepralia tatei*: *Didymosella larvalis* (MacGillivray, 1869). A.88.158, holotype of *Lepralia tatei* Hutton.
7. *Lepralia spicea*: *Mucropetraliella ellerii* (MacGillivray, 1869) (Fig. 2). A.88.162, holotype of *Lepralia spicea* Hutton.
8. *Lepralia baccata*: *Adeonellopsis baccata* (Hutton, 1878) (Figs 4-7). Senior synonym of *Adeonellopsis zietzii* (MacGillivray, 1889). This little-known species, purplish in life, encrusts small algae and stems of the cymodoceacean seagrass *Amphibolis*. It is strictly encrusting, unlike the similarly coloured *A. sulcata*, which can begin as an encrusting form but later gives rise to bilamellar lobes. *Adeonellopsis baccata* is also readily distinguished from other *Adeonellopsis* species by its zooidal morphology — the autozooidal spiramen is single, sometimes slightly stellate, whereas that of the female zooid is compound, generally with three pores. Avicularia are rare, and the zooidal surface is knobby, with cauliflower-like excrescences. A.88.159, holotype of *Lepralia baccata* Hutton.
9. *Lepralia pocula*: *Mychoplectra pocula* (Hutton, 1878) (Fig. 3). Senior synonym of *Membranipora polita* Hincks, 1880 and type species of the genus *Mychoplectra* Gordon & Parker, 1991. A.88.160A, lectotype and A.88.160B, paralectotype of *Lepralia pocula* Hutton (see Gordon & Parker, 1991).
10. *Cellepora agglutinans*: *Celleporaria cristata* (Lamarck, 1816). *Celleporaria agglutinans* (Hutton, 1873), widely distributed in New Zealand, is not known from Australia. In zooidal features the two species are very similar, but *C. cristata* typically forms bilamellar lobes with a crest. One of the most consistent differences between *C. agglutinans* and *C. cristata* is the insignificant or scarcely evident condyles of the autozooidal orifice in the former compared with the stout condyles in the latter (cf. Gordon 1989, plate 16D). Both species have a ligula on the crossbar of the columnar avicularium, like that in *C. fusca* (Busk, 1854), but *C. fusca* has a toothed rostrum (cf. Bock 1982, fig. 9.17d). A.88.167.
11. *Cellepora edax*: *Calyptotheca lata* (MacGillivray, 1883) [non *Hippoporidra edax* (Busk, 1859); non *Hippoporidra lusitania* (Taylor & Cook, 1981)]. A.88.156.
12. ?*Cellepora tubigera*: *Celleporaria cristata* (Lamarck, 1816) [non *Turbicellepora tubigera* (Busk, 1859)]. A.88.152, 153, 154, 170.
13. *Eschara contorta*: *Parasmittina unispinosa* (Waters, 1889a) [non *Escharoides contorta* (Busk, 1854)]. A.88.172.
14. *Eschara* (?) *huttoni*: *Calyptotheca variolosa* (MacGillivray, 1869) (Fig. 8). Senior synonym of *Schizoporella biturrita* Hincks, 1884 and *Schizoporella baccata* Maplestone, 1913 (P. E. Bock, in litt. 1988); replacement name for Hutton's original *Eschara tatei*, preoccupied (vide Tate's footnote to Hutton 1878: 24). Illustrated by SEM as *Gigantopora biturrita* in Bock (1982; see also Bock's 1987 *Corrigenda*). A.88.157, holotype of *Eschara* (?) *huttoni* Tate in Hutton.
15. *Retihernera foliacea*: *Hornera foliacea* MacGillivray, 1869. A.88.175.
16. *Retepora cellulosa*: *Triphylozoon munitum* (Hincks, 1878) (non *Retepora cellulosa* Smitt, 1868, non Linnaeus, 1758). A.88.165, 173.
17. *Retepora phoenicia* [sic]: *Petralia undata* MacGillivray, 1869 [non *Iodictyum phoeniceum* (Busk, 1854)]. A.88.171.
18. *Vinculari* [sic] *maorica*: *Cellaria australis* MacGillivray, in McCoy, 1880: 48 (non *Vincularia maorica* Stoliczka, 1865, = *Chaperia* sp., fide Brown 1958: 39). A.88.169.
19. *Idmonea radians*: *Mesonea radians* (Lamarck, 1816) (Fig. 9). *Mesonea radians* (see Hastings 1932; Bock 1982) is the correct name for this species, which has often been referred to as *Crisina radians*. The type species of *Crisina* is *Crisina normaniana* d'Orbigny 1851, Cretaceous, Europe, which is clearly distinguished from *Mesonea radians*, a Recent species, by the distribution and arrangement of pores and by the construction of the ovicell (Voigt 1984). *Mesonea* (Canu & Bassler, 1920) has pores on frontolateral faces of branches as well as dorsally, and the ovicell has smooth, membrane-covered porous areas. *Crisina* has only dorsal pores in longitudinal furrows and the ovicell lacks the porous areas (Voigt in litt., 1988). There appear to be several species from the Indian and Pacific Oceans, with a *Crisina*-like colony form, that have been attributed to *Crisina radians*. Waters (1887), Harmer (1915), and Bock (1982) have illustrated Lamarck's (1816) species, but those of Brood (1976) from East Africa, of Ryland (1984) from Fiji, and of Soule *et al.* (1987) from Hawaii are neither conspecific nor even congeneric with it. Clearly there is an amount of work to be done in sorting out the Indo-Pacific 'crisiniiform' bryozoans. A.88.164.

FIGURES 1-4. 1. Part of holotype, A.88.161, of *Membranipora* (?) *cincta* Hutton, = *Diploporella alata* (Lamouroux), × 105. 2. Part of holotype, A.88.162, of *Lepralia spicea* Hutton, = *Mucropetraliella ellerii* (MacGillivray), × 80. 3. Part of paralectotype, A.88.160B, of *Lepralia pocula* Hutton, = *Mychoplectra pocula*, × 80. 4. Part of holotype, A.88.159, of *Lepralia baccata* Hutton, = *Adeonellopsis baccata*, showing one gonozooid (gz) surrounded by several autozooids, × 72. (All specimens from Otago Museum).

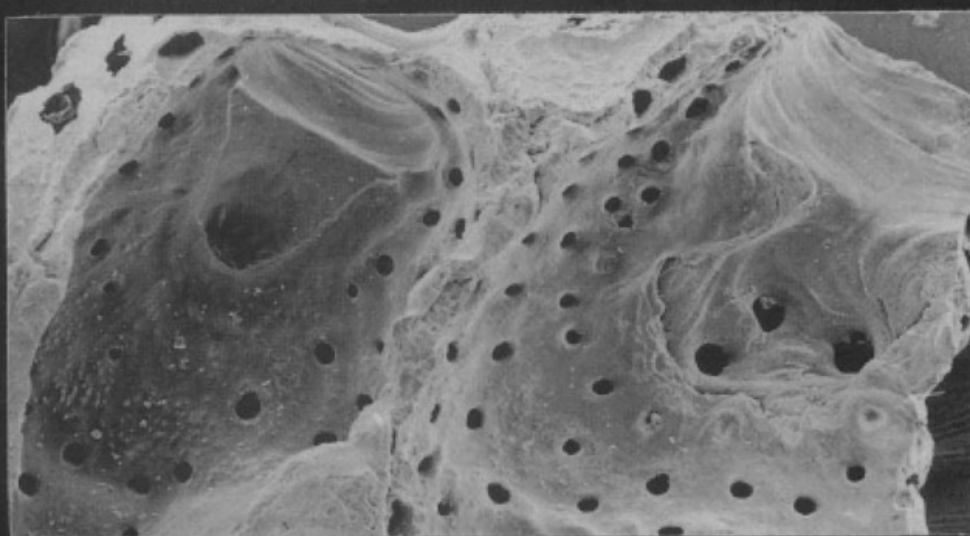
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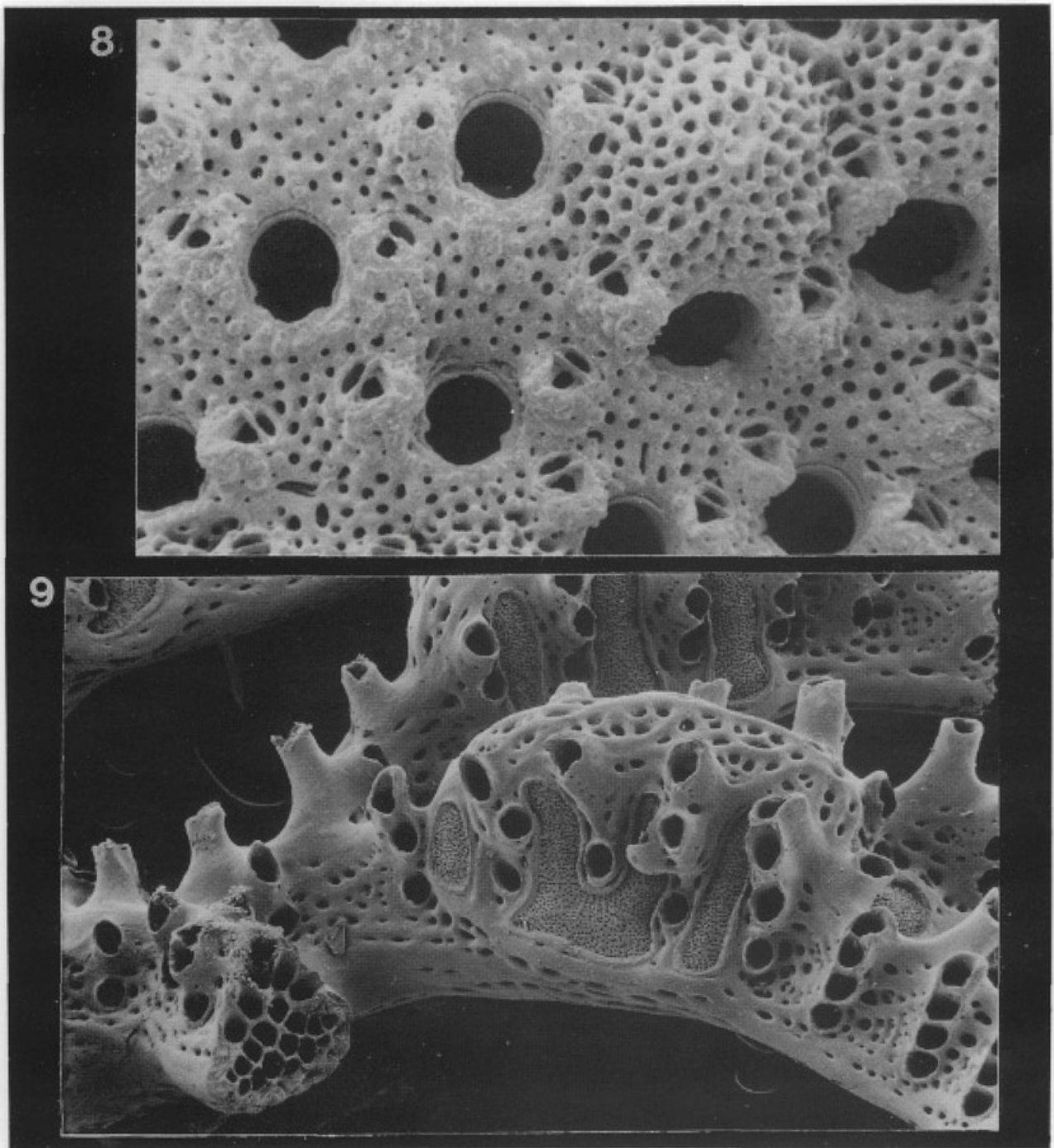


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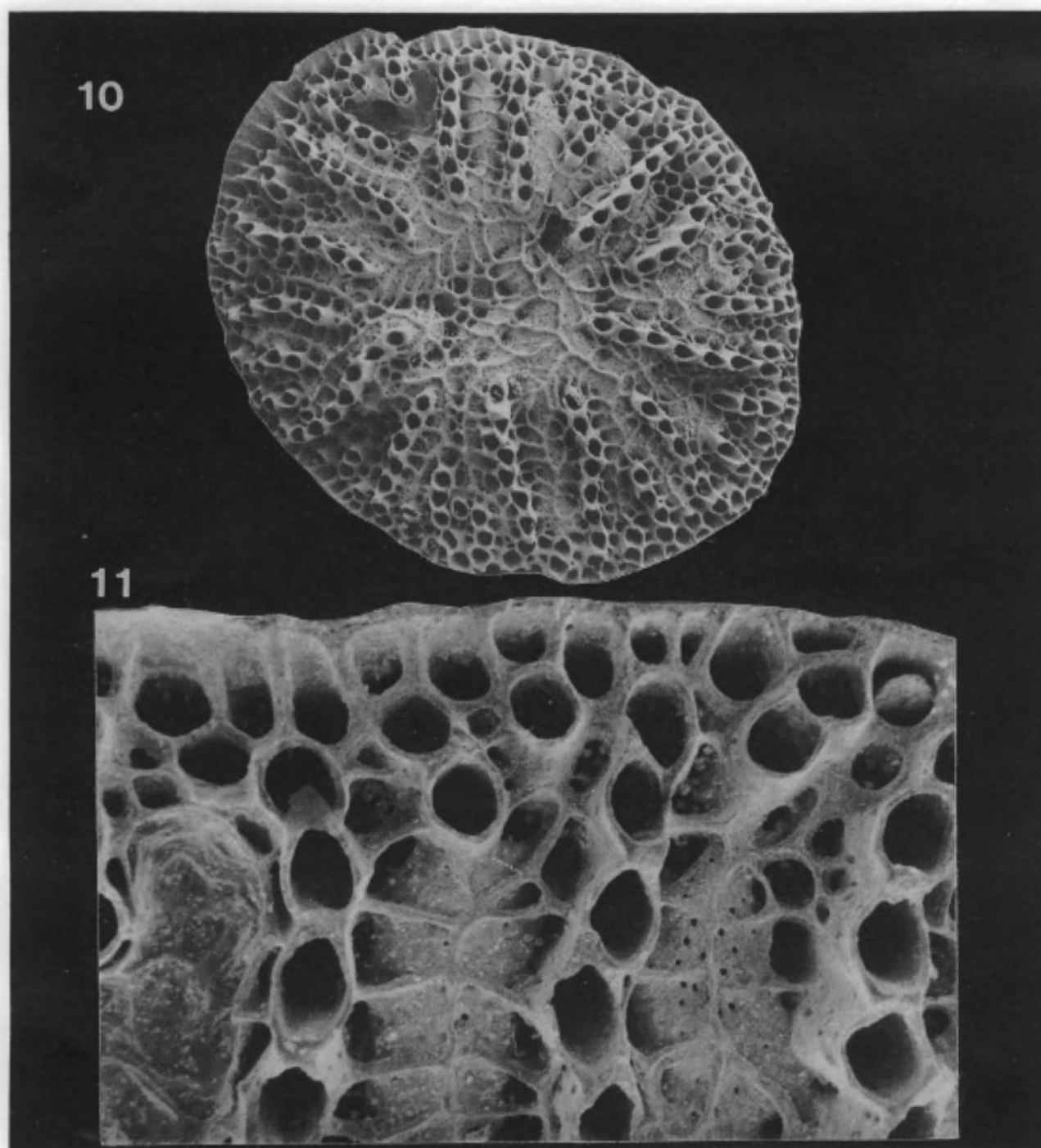
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FIGURES 8 AND 9. 8. Part of holotype of *Eschara* (?) *huttoni* Tate in Hutton, A.88.157, = *Calypotheca variolosa* (MacGillivray), $\times 55$. 9. *Mesonea radians* (Lamarck), part of specimen A.88.164, showing brood chamber and peristome, $\times 53$. (Both specimens from Otago Museum).

FIGURES 5-7. 5. Part of syntype, SAM L460 of *Adeonellopsis zietzii* MacGillivray, = *A. baccata* (Hutton), showing a gonozooid (at left), with characteristic compound spiramen and several autozooids with simple spiramen; 6 is of the same specimen as in 5, but tilted to show an autozooidal avicularium (av), both $\times 105$ (specimen from South Australian Museum). 7. Part of holotype, A.88.159 of *Adeonellopsis baccata* (Hutton) showing the interior of the frontal shields of an autozooid (left) and a gonozooid (right), $\times 205$.



FIGURES 10 AND 11. *Lichenopora victoriensis* Waters, specimen A.88.148, Otago Museum, showing the ramifying brood chamber (part magnified in 11), $\times 56$, $\times 300$.

20. *Pustulipora porcellanica*. No specimen in collection. Currently, this Hutton (1873) species is known only from New Zealand, as *Galeopsis porcellanicus* (Gordon, 1989). To date, the only species of *Galeopsis* definitely recorded for South Australia is *G. longirostris* (MacGillivray, 1885b) (specimens in South Australia Museum).

21. *Tubulipora flabellaris*. No specimen in collection. *Tubulipora flabellaris* (Fabricius, 1780) is an arctic-boreal species, unlikely to occur in Australia (Hayward & Ryland, 1985). There are several samples of *Tubulipora* from South Australia in the South Australian Museum, none identified to species. Six species of the genus have been reported from Victoria.

22. *Discoporella novae-zealandiae* [sic]: *Lichenopora victoriensis* Waters, 1889b [non *Lichenopora novaezealandiae* (Busk, 1875)] (Figs 10, 11). A.88.148, 150.

23. *Discoporella fimbriatae* [sic]: *Lichenopora echinata* (MacGillivray, 1884) [non *Discoporella fimbriata* (Busk, 1875)]. (Cf. Waters 1889b: 282 – "A 'Challenger' specimen from Tristan da Cunha was submitted to me named *L. fimbriata*. This is *L. echinata* with an ovicell, so that the name *fimbriata* must be dropped"). A.88.149, 151.

Two additional species, not mentioned in Hutton's (1878) paper, are represented in the collection. These are *Steginoporella chartacea* (Lamarck, 1816), syn. *S. truncata* (Harmer, 1900) (A.88.174) and *Rhynchozoon* sp., possibly *R. delicatulum* (MacGillivray, in McCoy 1890: 356) (A.88.155). For the priority of

Steginoporella chartacea over *S. truncata* see d'Hondt 1979: 18, 20.

Two of Hutton's (1878) names are senior synonyms of later-described species. Thus, *Adeonellopsis zietzii* MacGillivray, 1889 becomes *A. baccata* (Hutton, 1878), and *Pyrporea polita* (Hincks, 1880) becomes *Mychoplectra pocula* (Hutton, 1878).

ACKNOWLEDGMENTS

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