

THE S I S P L A T E S

PLATE 1



PLATE I

Fig. a. Cribrilaria radiata (Moll) x 26. Station TN.90.

Fig. b. Cribralaria elevata (MacGillivray) x 25.
Locality : Snapper Point, Victoria. (Miocene)
Fossil Collection, National Museum Victoria.

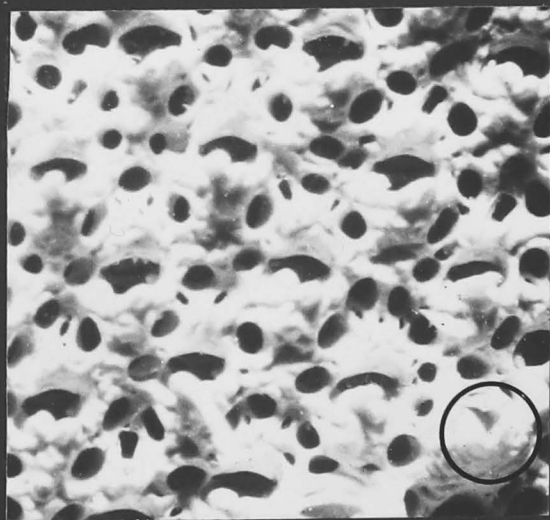
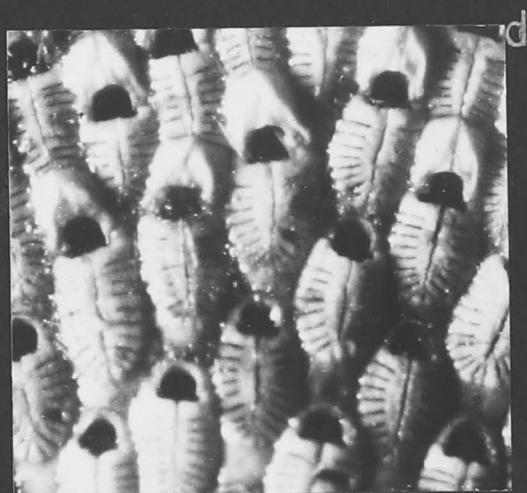
Fig. c. Figularia carinata (Waters) x 34. Station 934.
Note the calcareous opercula closing the orifices.

Fig. d. Figularia spinea Brown x 35.
Locality : Stewart Island. U.Z.M. (Mortensen
Collection).

Fig. e. Membraniporella bifurca n.sp. Paratype. x 25.
Station 934.

Fig. f. Reginella vas (Brown) x 35. Station 934.
Each zooecium lies adjacent to the orifice of a
cyclostomatous zoid.

Fig. g. Arachnopusia unicornis (Hutton) x 30. Station 934.
Gigantic avicularium encircled. Fertile colony.



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PLATE 2

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PLATE 2

- Fig. a. Discopora neozelanica (Livingstone) x 22.
Station 934. Small frontal avicularia are
encircled.
- Fig. b. Discopora neozelanica (Livingstone) x 22.
Station 934. To show the gigantic sub-oral
avicularium.
- Fig. c. Umbonula bicuspis (Hincks) x 26.
Locality : Stewart Island (A.M. Cat. No. G.564)
To show the nature of the ovicells.
- Fig. d. Escharoides excavata (MacGillivray) x 24.
Station 934.

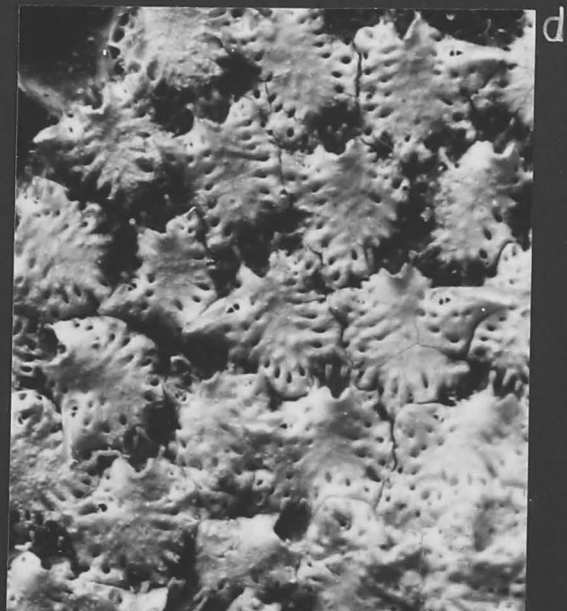
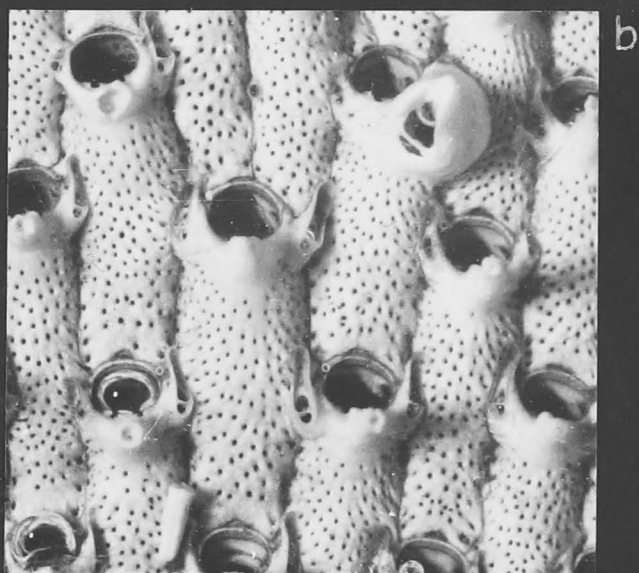


PLATE 3

PLATE 3

Petalostegus spinosus n.sp. Holotype. x 28. Station TN.144.

- Fig. a. Secondary branches.
- b. Primary branch, note the long stems.
- c. Secondary branch, basal view to show the prominent lateral and basal spines, which project from each zooecium.
- d. Ovicell. x 58. Frontal view. The median suture dividing the outer layer of the ectooecium, is visible.
- e. Ovicell, lateral view. To show the projecting sub-oral plate. Note also the frontal and basal spinose processes.
- f. Ovicell, apical view. Note the large circular perforation, which exposes the inner layer of ectooecium.
- Fig. g. Vittaticella elegans (Busk) x 25. Station 934. Note the hollow conical spine, which sometimes replaces the scapular avicularium.
- Fig. h. Vittaticella constans n.sp. x 25. Station TN.91.
- Fig. i. Scuticella ventricosa (Busk) x 22. Station TN.144.
- Fig. j. Scuticella fusiformis n.sp. Paratype. x 22. Station 934.

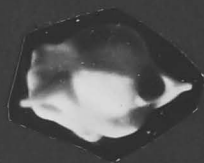


PLATE 4

PLATE 4

- Fig. a. Cornuticella cornuta (Busk) x 25. Station TN.144.
Note the long, retrocedent scapular processes.
- Fig. b. Cornuticella trapezoideus n.sp. Paratype. x 20.
Station TN.144.
- Fig. c. Costaticella hastata (Busk) x 25. Station TN.144.
Note the ovicell.
- Fig. d. Costaticella hastata (Busk) x 25. Station TN.144.
Zooecia and biglobuli.
- Fig. e. Pterocella alata (Wyville Thomson) x 25.
Station TN.144. To show the suprascapular spines.
- Fig. f. Pterocella alata (Wyville Thomson) x 25.
Young zooecia. The suprascapular chamber is
widely open, the alate appearance of the zooecia
is due to the lateral expansion of their scapular
processes.
- Fig. g. Pterocella alata (Wyville Thomson) x 25.
To show the gibbous basal wall.
- Fig. h. Pterocella alata (Wyville Thomson) x 28.
Old zooecia. Scapular processes are absent
altogether.
- Fig. i. Cribricellina cribraria (Busk) x 30.
Station TN.144.
- Fig. j. Calwellia uniserialis n.sp. Paratype. x 25.
Station TN.91.

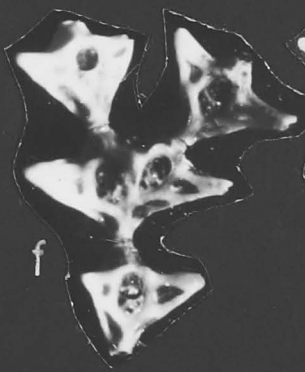
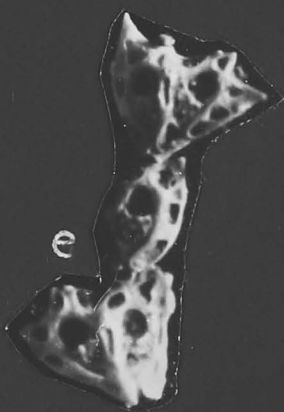
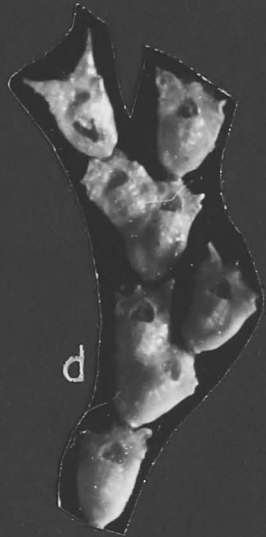
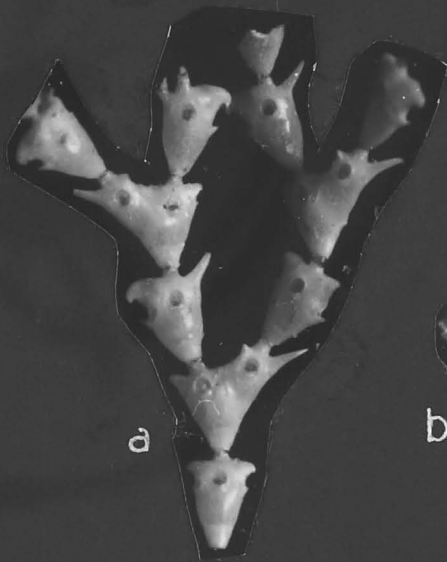


PLATE 5

PLATE 5

Fig. a. Euthyroides jellyae Levinsen x 30. Station TN.144.

Fig. b. Chorizopora brongniarti (Audouin) x 32.
Station 934.

Fig. c. Retevirgula neozelanica n.sp. Paratype. x 25.
Station 934.

Fig. d. Chorizopora papillata n.sp. Paratype. x 27.
Station 934.

Fig. e. Chorizopora foramen n.sp. Paratype. x 30.
Station TN.90. Zooeciules indicated.

Fig. f. Hippothoa hyalina (Linnaeus) x 40.
Station TN.134. Male zooids regenerated
from fertile zooecia are encircled.

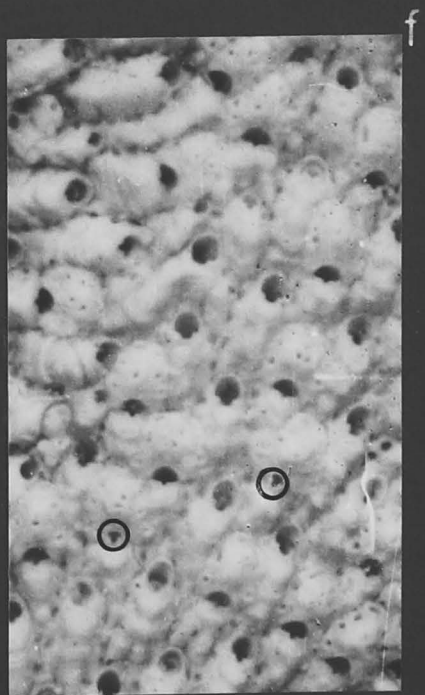
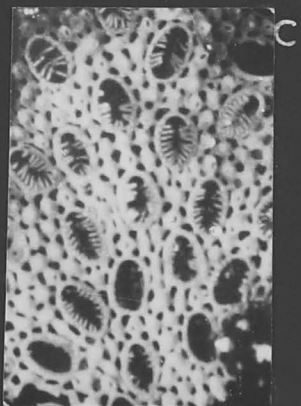
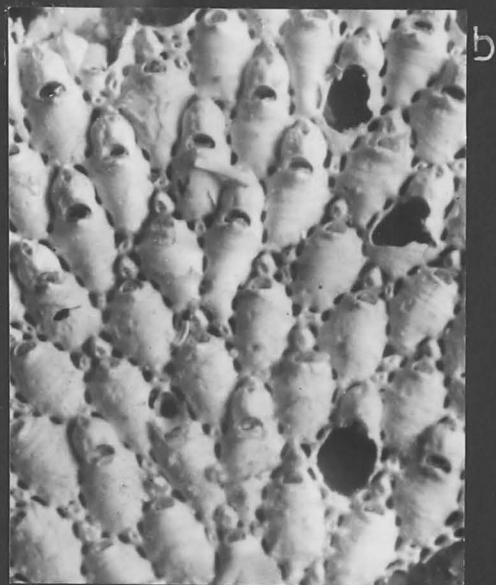


PLATE 6

PLATE 6

- Fig. a. Arthropoma circinatum (MacGillivray) x 33.
Station TN.90. Mucronate form.
- Fig. b. Arthropoma divisoporum (Waters) x 40.
Station TN.134.
- Fig. c. Arthropoma biseriale (Hincks) x 20.
(A.M. Cat. No. U.1731) Locality : Port Jackson,
New South Wales. Old zooecia. Note the coarsely
perforated frontal wall.
- Fig. d. Schizomavella punctigera (MacGillivray) x 37.
Station 934.
- Fig. e. Schizomavella mucronifera n.sp. Holotype. x 30.
Station 935. A large bifurcated mucronate
avicularium is encircled.

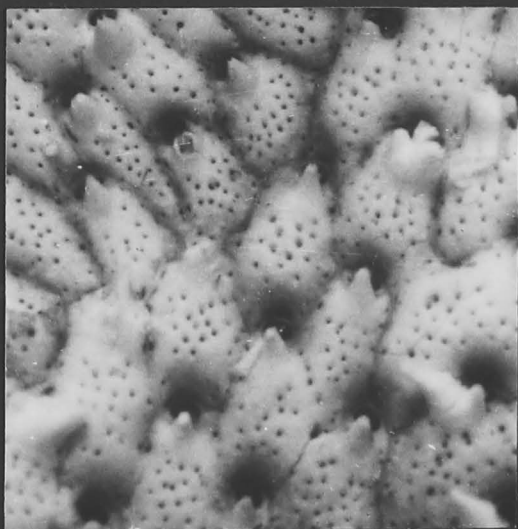
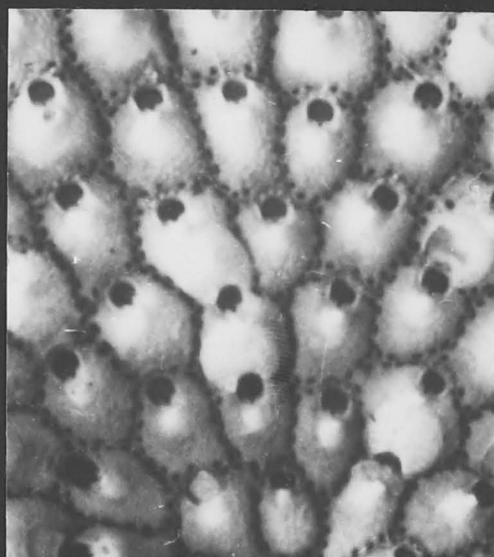
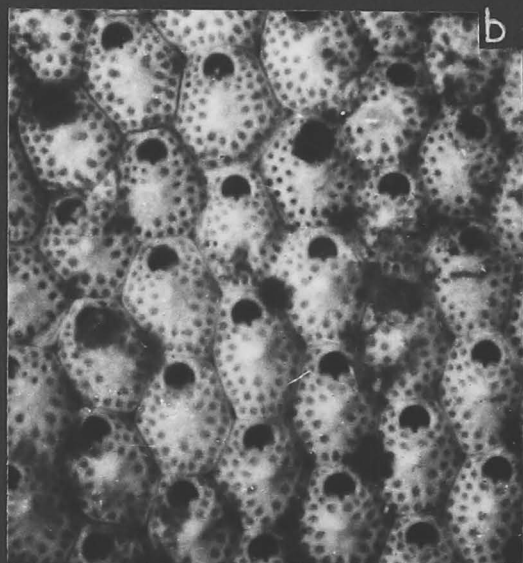
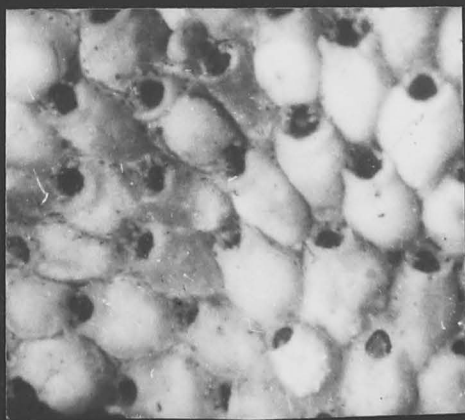
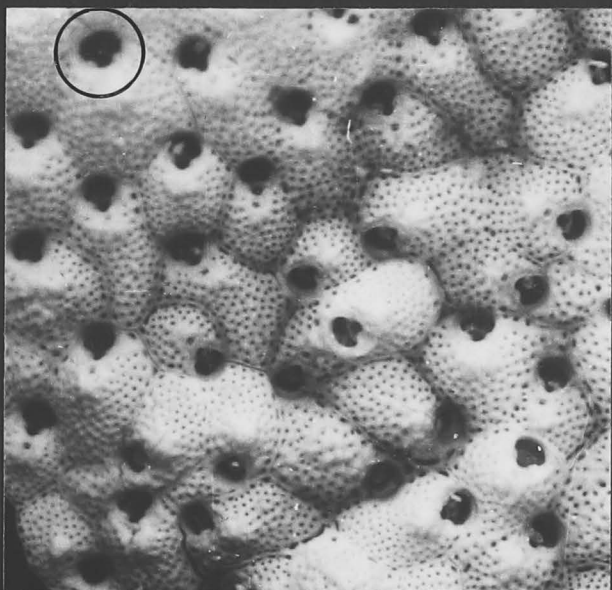


PLATE 7

PLATE 7

- Fig. a. Schizomavella spectabilis (Hincks) x 24.
(A.M. Cat. No. G.557). Locality : Stewart Island.
- Fig. b. Schizomavella immersa n.sp. Paratype. x 30.
Station TN.134. Fertile orifice indicated.
- Fig. c. "Schizoporella" globosa n.sp. Paratype. x 40.
Station 934.
- Fig. d. "Schizoporella" terrae-novae n.sp. Paratype. x 34.
Station 935. Zoecium with proximal frontal
avicularium encircled.



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PLATE 8

- Fig. a. Escharina waiparaensis Brown x 30. Station 934.
To show the prominent lateral convexities
developed on some zooecia.
- Fig. b. Escharina incognita n.sp. Paratype. x 26.
Station 934. Note the slit-like pores situated
at the lateral margins, slightly proximal to
the orifice. These are interpreted to be
vestigial heterozooecia.
- Fig. c. Chiastosella watersi Stach x 25. Station TN.134.
Ovicell indicated.
- Fig. d. Chiastosella longaevitas n.sp. Paratype. x 25.
Ovicell indicated.
- Fig. e. Chiastosella splendida (Livingstone Syntype. x 30.
Locality : Three Kings Islands. U.Z.M.
(Mortensen Collection).
- Fig. f. Chiastosella splendida (Livingstone) x 30.
Station 934. Ovicell encircled.

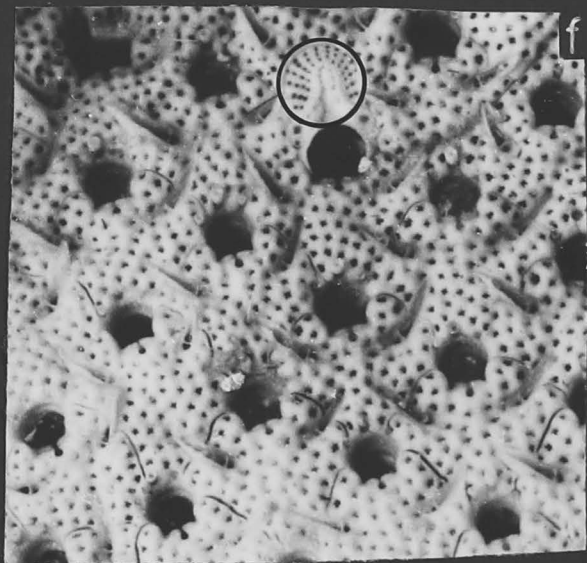
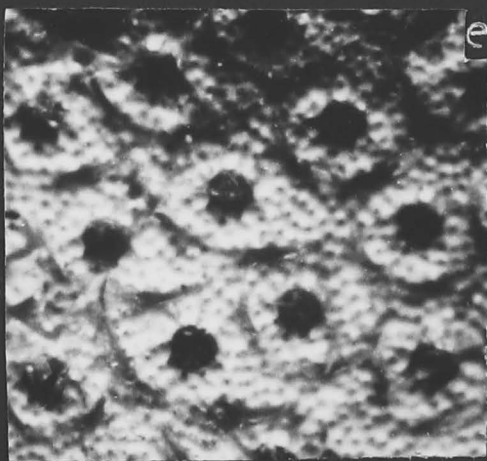
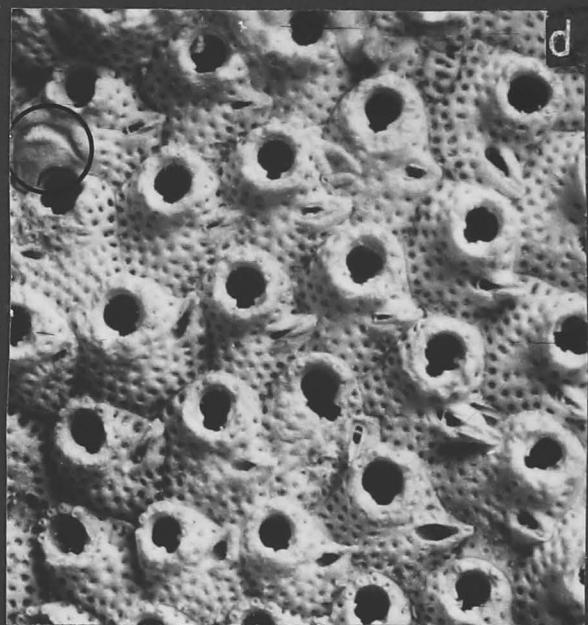
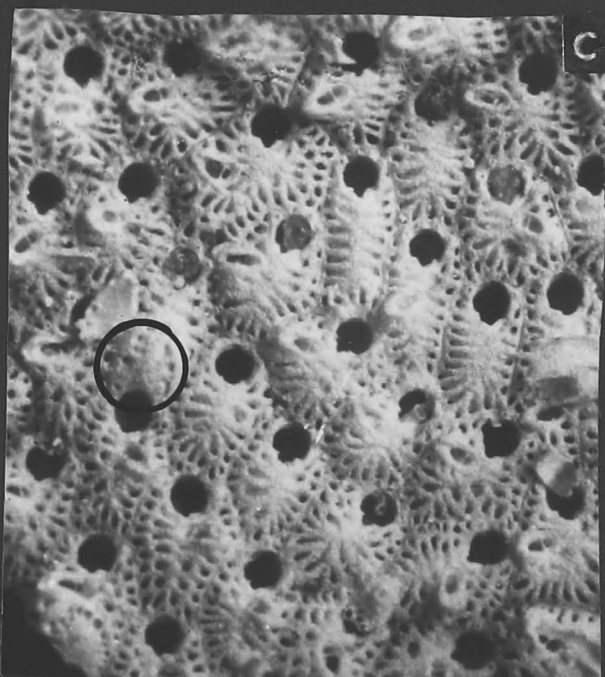
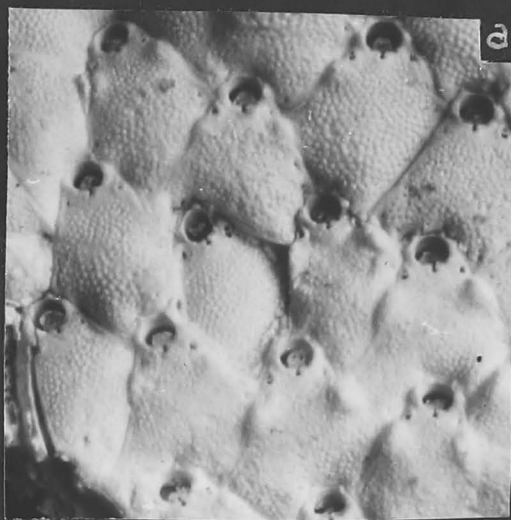


PLATE 9

PLATE 9

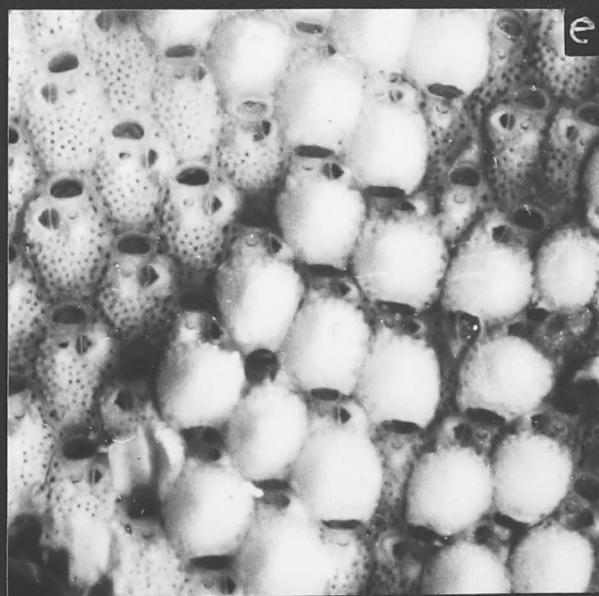
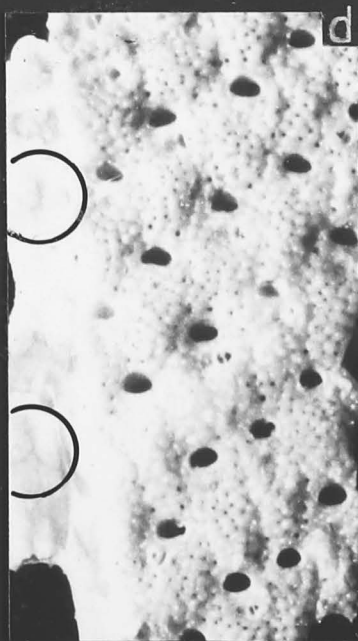
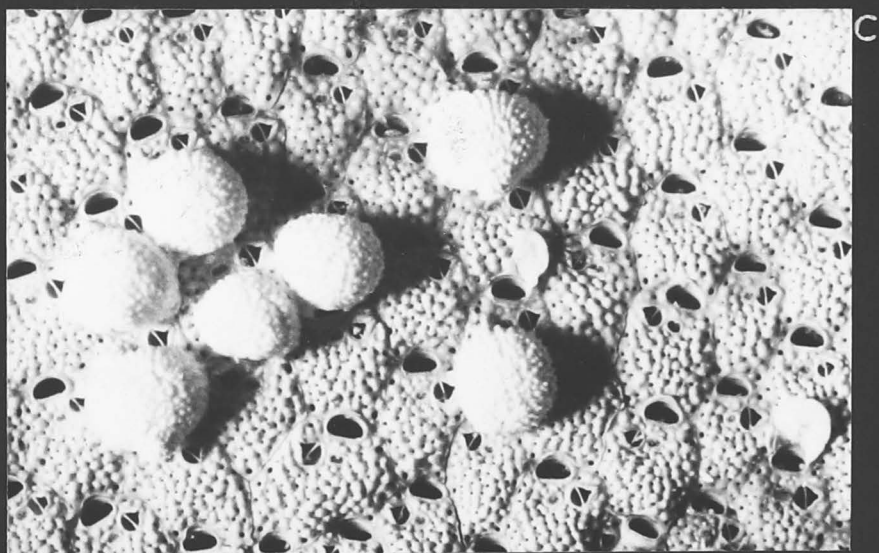
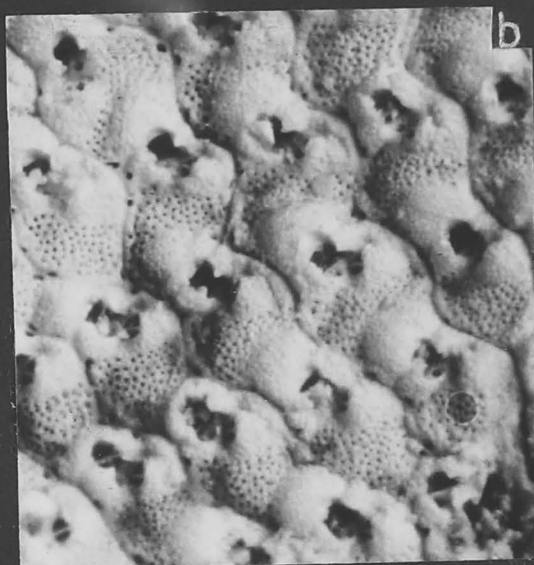
Fig. a. Microporella ciliata (Pallas) x 30. Station 941.

Fig. b. Microporella ciliata (Pallas) var. intermedia
Livingstone x 34. Station 934. Note the two
lappets projecting from the fertile peristome.

Fig. c. Microporella ordo Brown x 34. Station 934.
Note the large globular ovicells.

Fig. d. Microporella ordo Brown. Topotype. x 34.
Locality : Tainui Shellbed, Castlecliff, Wanganui
(Lower Pleistocene) Powell Collection. The
curious comma shaped excavations (encircled)
are peculiar to the fossil material only (Brown
1952a:text-fig. 191).

Fig. e. Microporella flabellaris Busk sp. x 32.
(B.M. Cat. No. 99.7.1.458) Locality : Natal.



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PLATE 10

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PLATE 10

- Fig. a. Microporella hyadesi (Jullien) x 33.
Locality : Colville Channel. U.Z.M.
(Mortensen Collection). Note the interzoecial
avicularium which has become disassociated from
the left adjacent zoecium.
- Fig. b. Fenestrulina malusi (Audouin) x 33.
Station TN.134.
- Fig. c. Fenestrulina reticulata n.sp. Paratype. x 34.
Station TN.134. Note the reticulate pattern
of secondary thickening on the frontal walls.

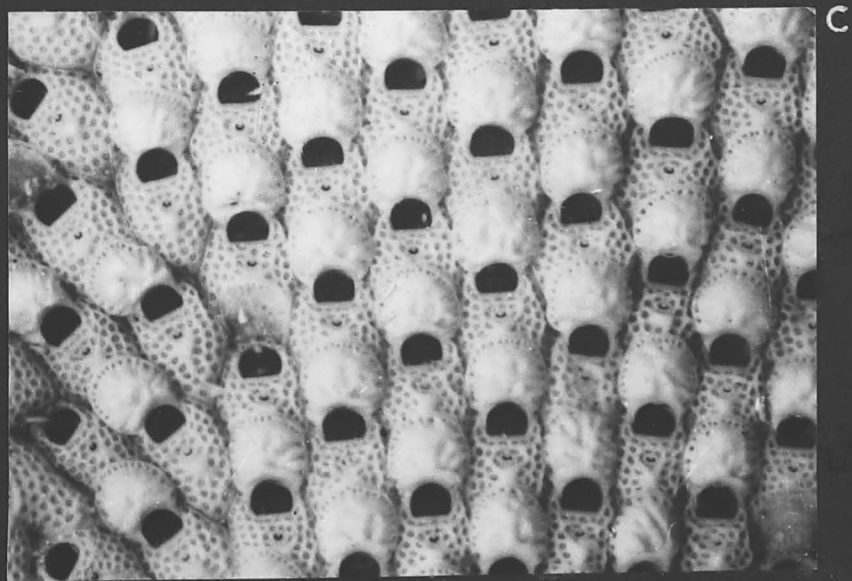
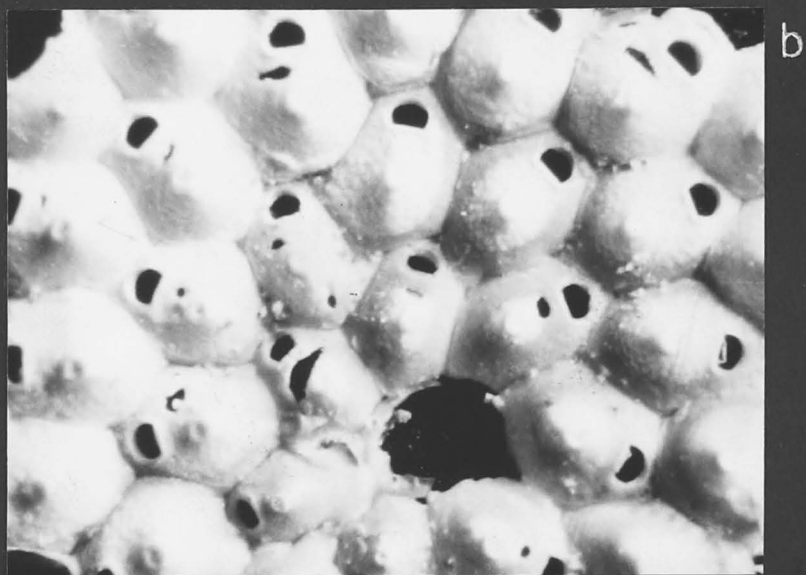
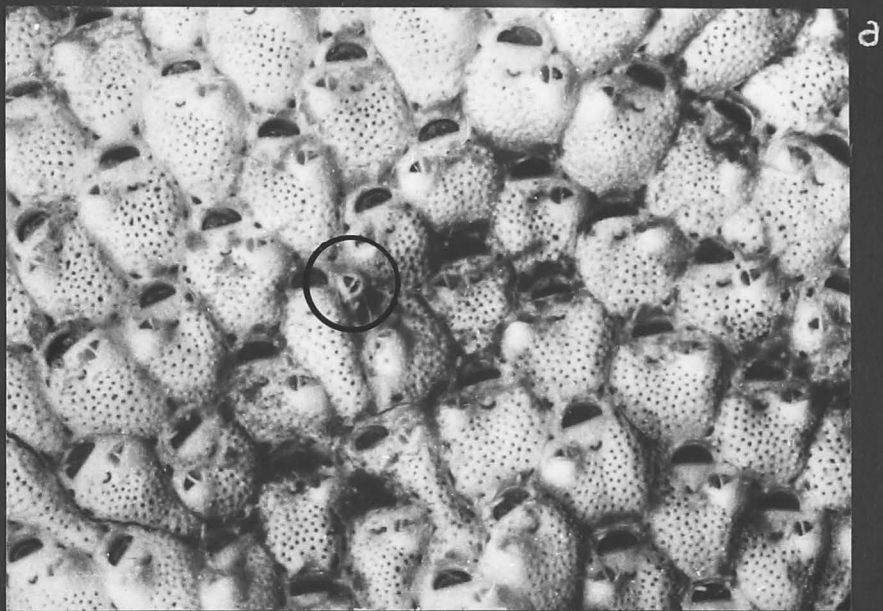


PLATE 11

PLATE 11

- Fig. a. Calloporina angustipora (Hincks) x 30.
Station 934. Note the slit-like ascopore.
- Fig. b. Calloporina angustipora (Hincks) x 30.
Station 934. Ovicells.
- Fig. c. Calloporina triporosa n.sp. Paratype. x 30.
Station TN.134.
- Fig. d. Calloporina renipuncta (MacGillivray) Lectotype.
x 34. (N.M.V. Cat. No. 63846) Locality : Port
Phillip Heads. Note the ovicells.
- Fig. e. Calloporina canaliculata (MacGillivray) x 24.
(N.M.V. Cat. No. 42913) Locality : Port Phillip
Heads.
- Fig. f. Calloporina lunipuncta (MacGillivray) Lectotype.
x 24. (N.M.V. Cat. No. 63826) Locality : Port
Phillip Heads.
- Fig. g. Calloporina lunata (MacGillivray) x 24.
(A.M. Cat. No. G.765) Locality : Port Phillip
Heads. Zoecia with unilateral avicularia situated
on the septal margins. Ovicell encircled.

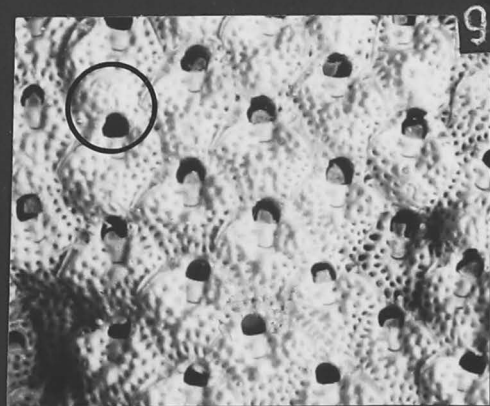
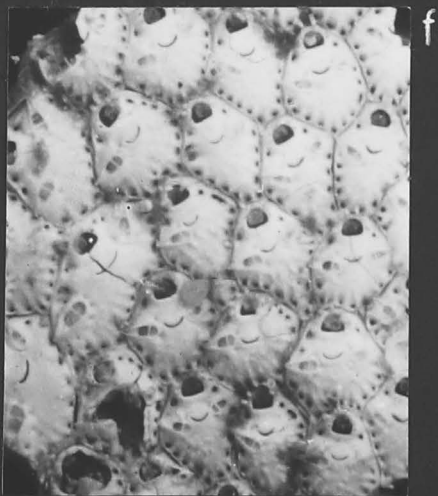
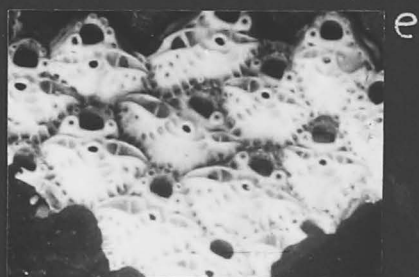
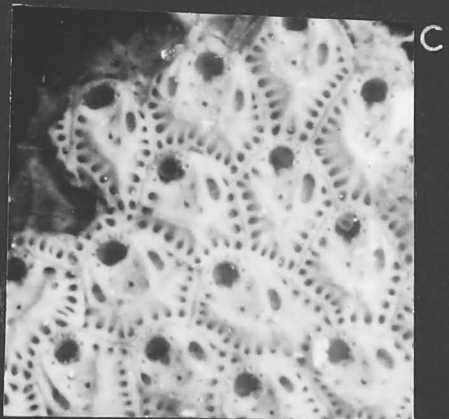
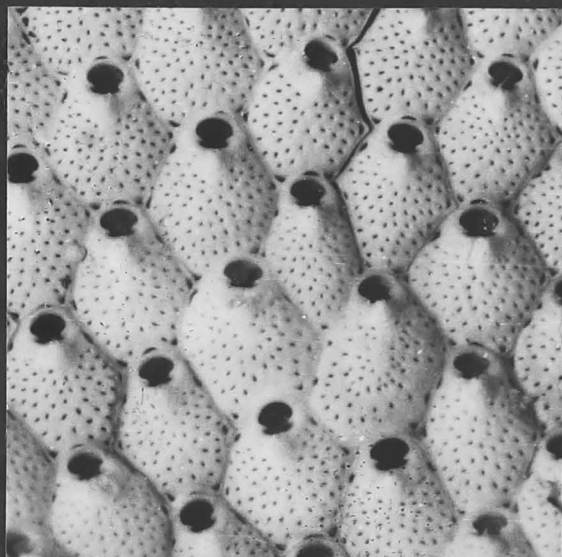


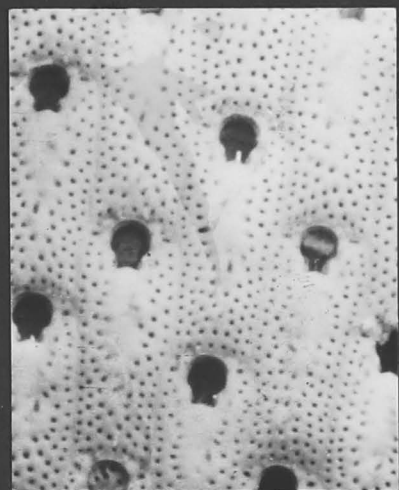
PLATE 12

PLATE 12

- Fig. a. Hippoporina cincta (Hincks) x 30. Station 934.
- Fig. b. Hippomenella vellicata (Hutton) x 24.
Station 935. Lateral oral avicularia are
reduced to tiny appendages.
- Fig. c. Hippomenella vellicata (Hutton) x 26.
Station 935. With large oral avicularia, note
also the tiny avicularia scattered over the
frontal wall.
- Fig. d. Hippomenella vellicata (Hutton) x 30.
Station 935. Ovicells. Note the stout spines.
- Fig. e. Hippomenella (?) gigantica n.sp. Paratype. x 23.
Station 934.
- Fig. f. Hippomenella bituberosa Brown x 24. Station 934.



a



b



c



d



e



f

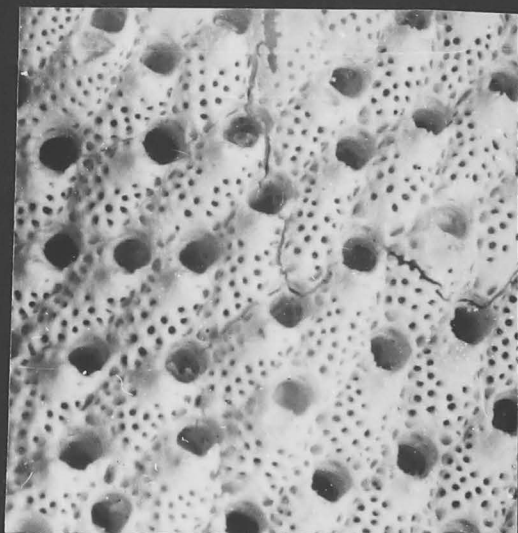
PLATE 13

PLATE 13

- Fig. a. Eurystomella foraminigera (Hincks) x 30.
(N.M.V. Cat. No. 65829) Locality : New Zealand.
- Fig. b. "Schizoporella" rostrata MacGillivray x 30.
Station TN.91.
- Fig. c. "Schizoporella" rostrata MacGillivray x 30.
Station TN.134. Ovicells.
- Fig. d. Celleporina spatula (MacGillivray) x 30.
(A.M. Cat. No. U.2704) Locality : Hauraki Gulf.
(Mortensen Collection) Ovicell encircled.
- Fig. e. "Lepralia" conspicua n.sp. Paratype. x 26.
Station 934.



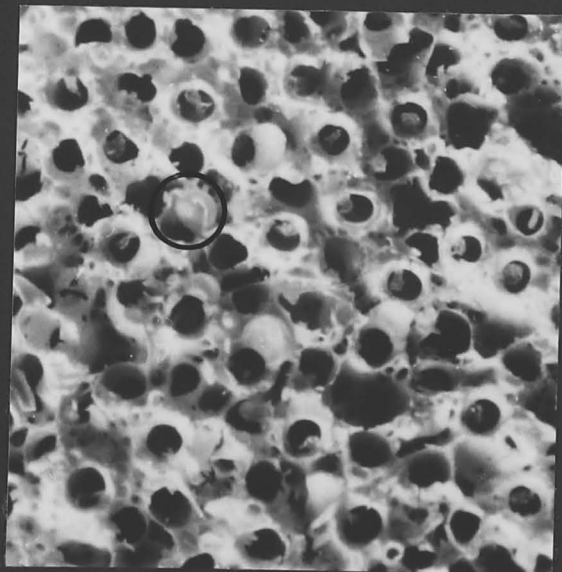
a



b



c



d



e

PLATE 14

PLATE 14

- Fig. a. Exochella tricuspis (Hincks) x 30.
Station TN.134.
- Fig. b. Escharella spinosissima (Hincks) x 33.
Station TN.90.
- Fig. c. Escharella atypica n.sp. Holotype. x 30.
Station 934. Avicularia encircled. Note
the calcified primary zooecium.
- Fig. d. Phylactellipora fistula (Brown) x 24.
Off Three Kings Islands (Waitotaran - Pliocene)
Manchester Museum.
- Fig. e. Escharella bensoni (Brown) x 30. Station 934.
Young zoarium, with ancestrula (encircled).

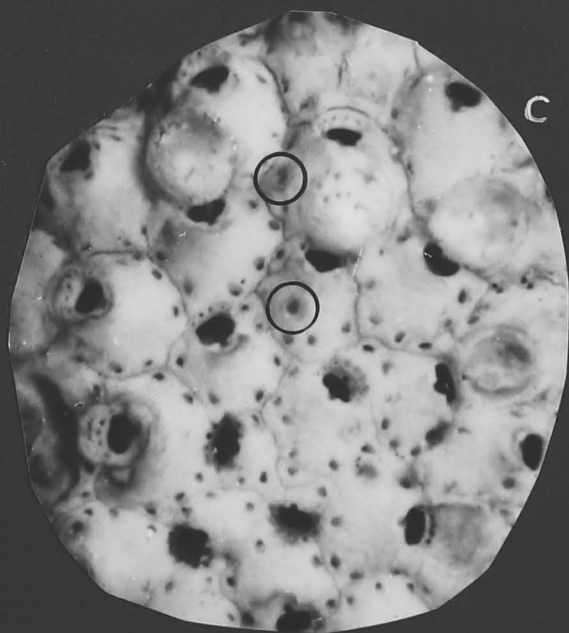
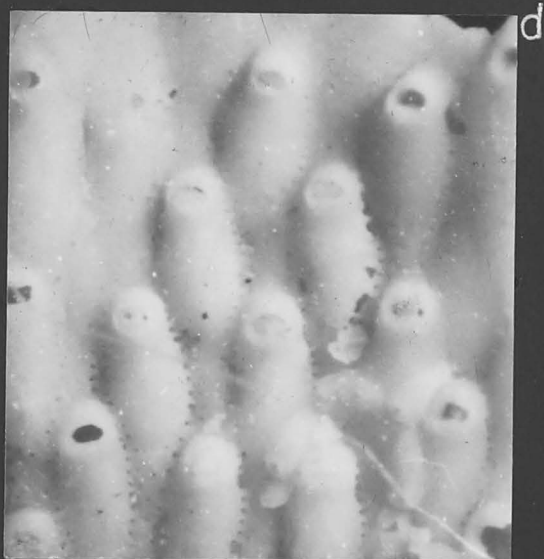
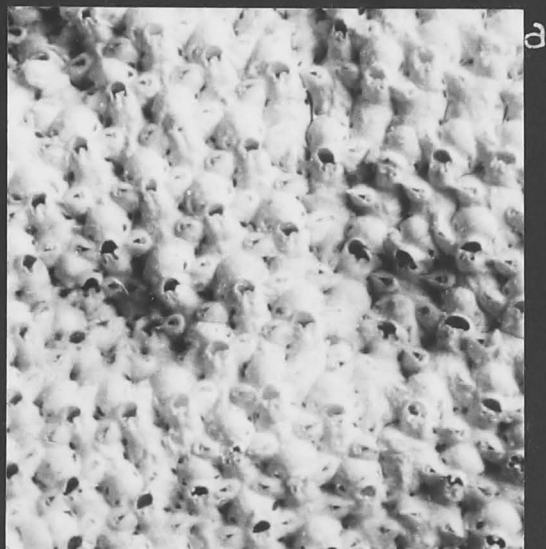


PLATE 15

PLATE 15

- Fig. a. Porella marsupium (MacGillivray) x 30.
(A.M. Cat. No. G.548) Locality : Wanganui,
New Zealand. Note the semi-circular to
pyriform shape of the secondary orifice and
the uniformly flattened aspect of the zooecia;
also the immersed ovicells.
- Fig. b. Porella antarctica n.sp. Holotype. x 30.
(A.M. Cat. No. U.2656) Locality : Commonwealth
Bay, Adelie Land. (Australasian Antarctic
Expedition 1911-14). The orifice is sub-quadrate
as a result of the development of lateral
peristomial flaps, and the zooecial frontal wall
convex. Ovicells are exposed.
- Fig. c. Porella costata n.sp. Paratype. x 33.
Station 934. To show the prominent inter-areolar
ridges.

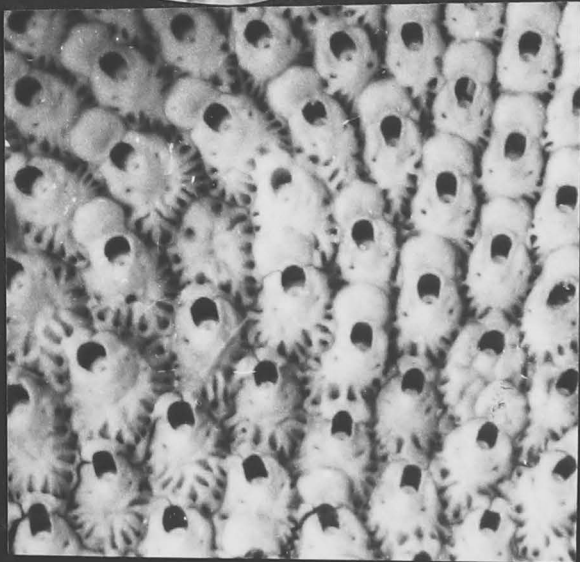
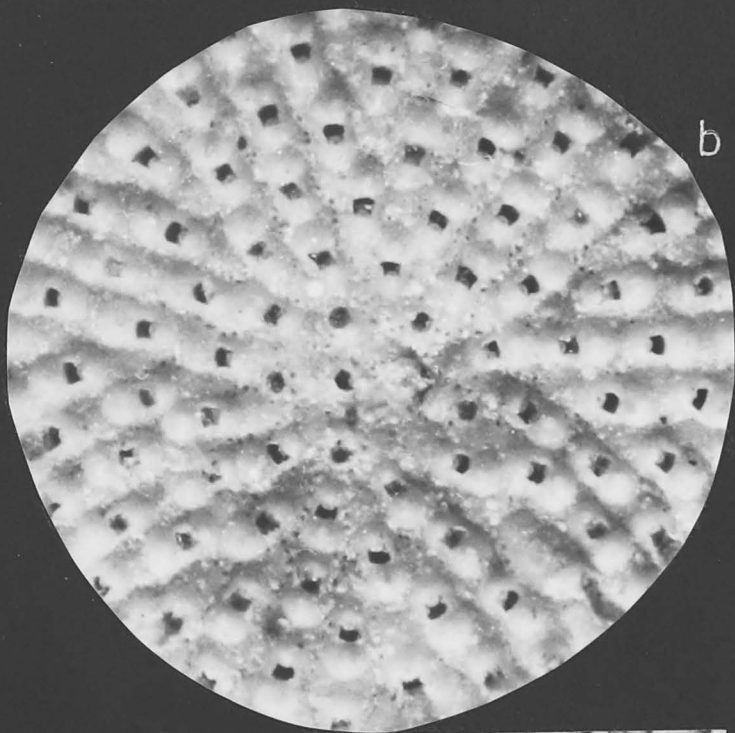
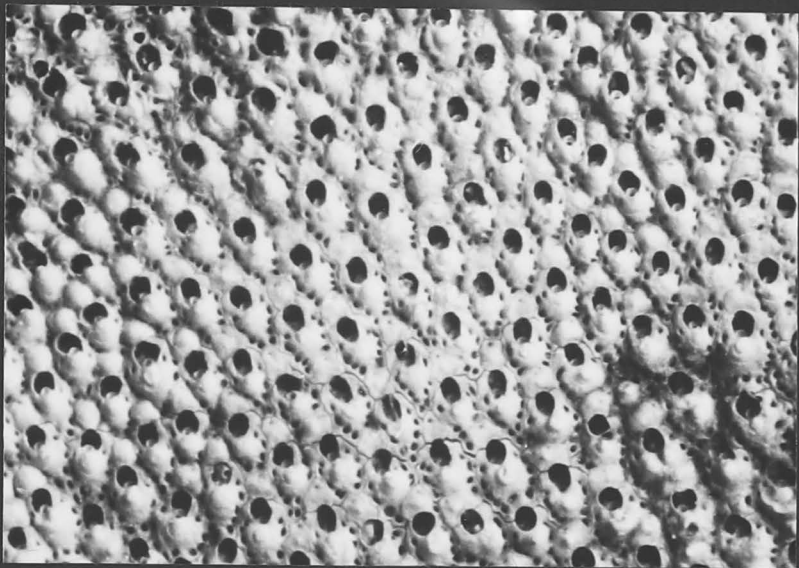
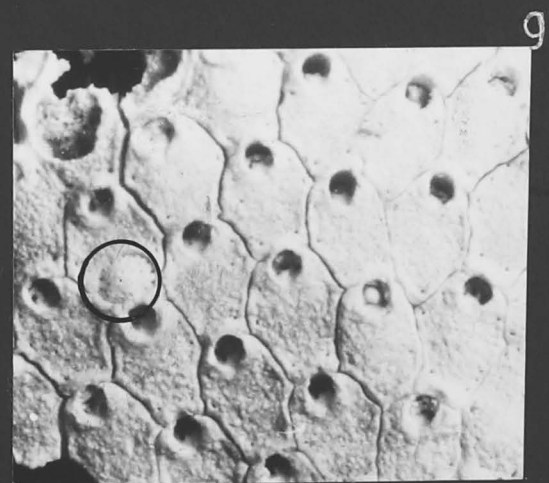
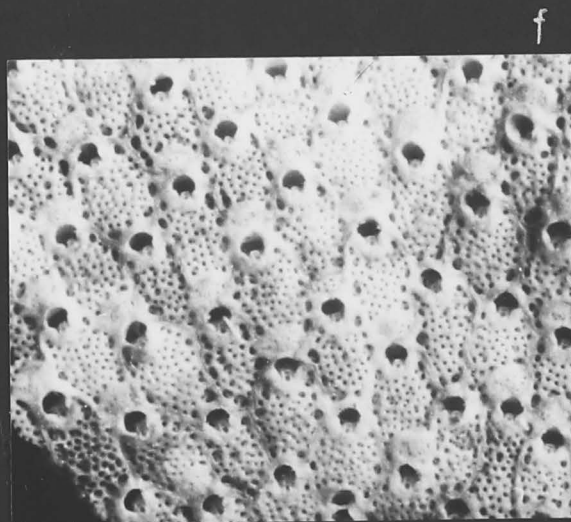
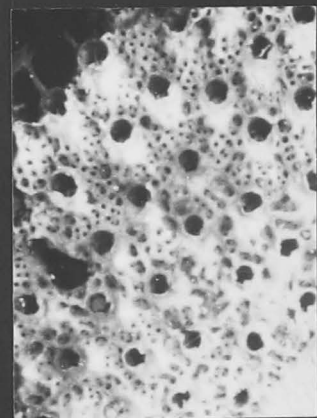
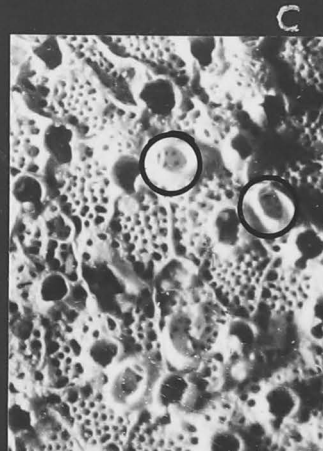
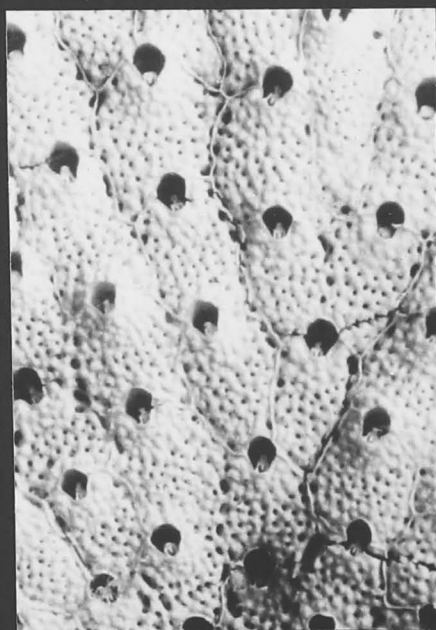
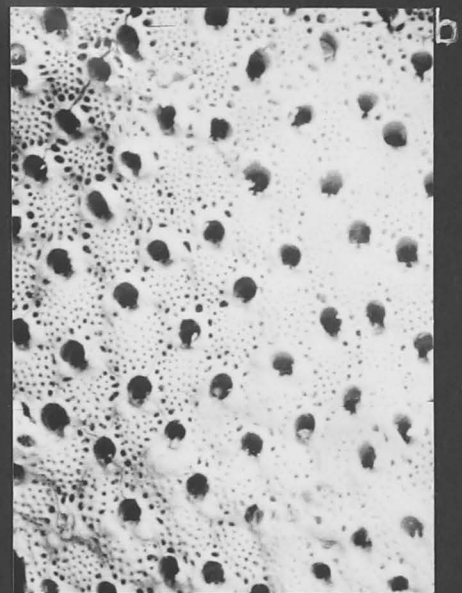
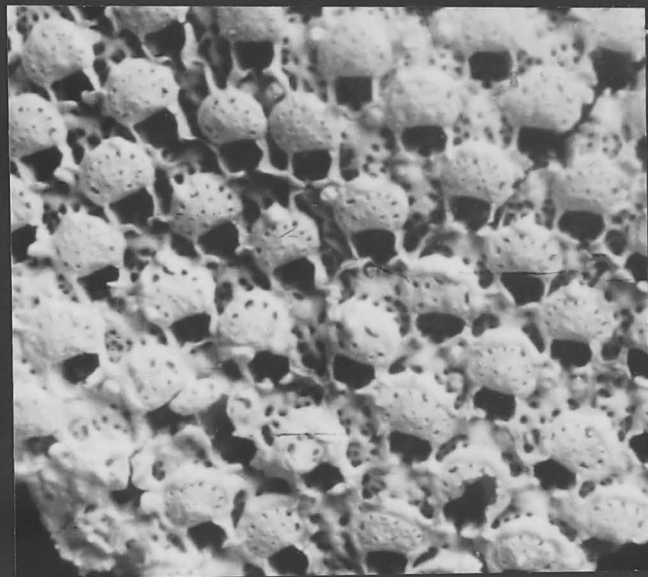


PLATE 16

- Fig. a. Smittina maplestonei (MacGillivray) Lectotype.
x 34. (N.M.V. Cat. No. H.38) Locality : Williams-
town, Victoria.
- Fig. b. Smittina maplestonei (MacGillivray) x 24.
Station TN.134.
- Fig. c. Smittina maplestonei (MacGillivray) x 35.
Station TN.134. Frontal avicularia encircled.
- Fig. d. Smittina projecta n.sp. Holotype. x 30.
(A.M. Cat. No. P.14593) Locality : Western Port,
Victoria. Note the inter-oral avicularia, each with
a prominent ligula, projecting into the rostral
opesia.
- Fig. e. Smittina minuta n.sp. Holotype. x 30.
Station TN.134.
- Fig. f. Smittina rosacea n.sp. Holotype. x 30.
Station 935.
- Fig. g. Smittina punctata n.sp. Holotype. x 26.
Station 934. An immersed ovicell is encircled.



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PLATE 17

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PLATE 17

- Fig. a. Smittina purpurea (Hincks) x 26. Station TN.134.
Fertile colony.
- Fig. b. Smittoidea livingstonei n.sp. Paratype. x 30.
Station TN.90.
- Fig. c. Smittoidea transporifera n.sp. Paratype. x 30.
Station 934. Note the ovicell perforated by a
transverse row of prominent pores.
- Fig. d. Smittoidea acarocensis (Levinsen) x 30.
Locality : Colville Channal (Mortensen Collection).
To show the immersed ovicells. Note also the
tiny ligula projecting into the rostral opesia
of the inter-oral avicularia.
- Fig. e. Rhamphostomella biperforata n.sp. Paratype. x 30.
Station 934.
- Fig. f. Parasmittina unispinosa (Waters) x 30.
Station TN.134. Note the ovicells; the thick
protruding oocial cover surrounds the
perforated outer wall of ectooecium.
- Fig. g. Parasmittina macgillivrayi n.sp. Holotype. x 30.
(N.M.V. Cat. No. 62918) Locality : Port Phillip
Heads.

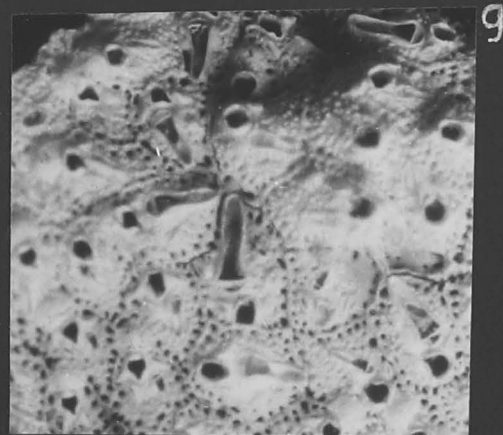
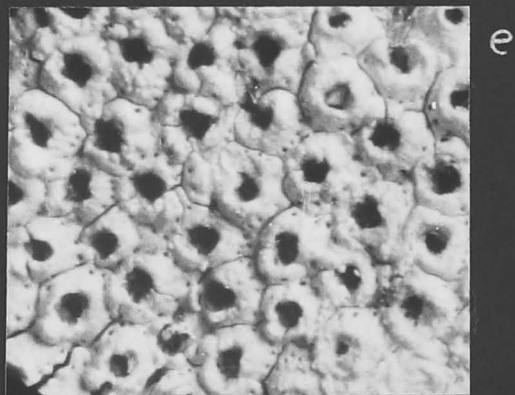
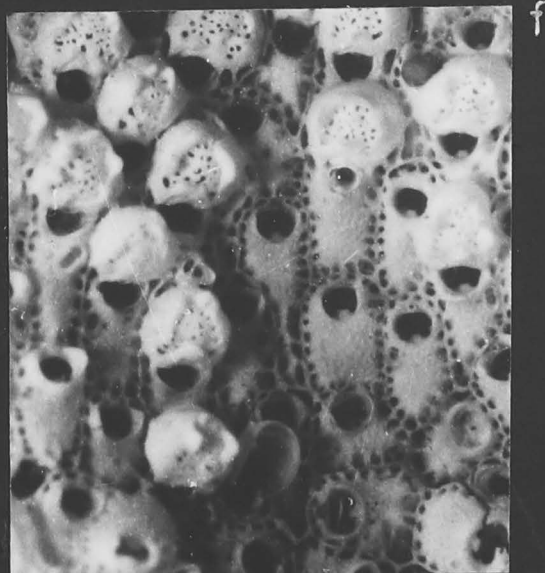
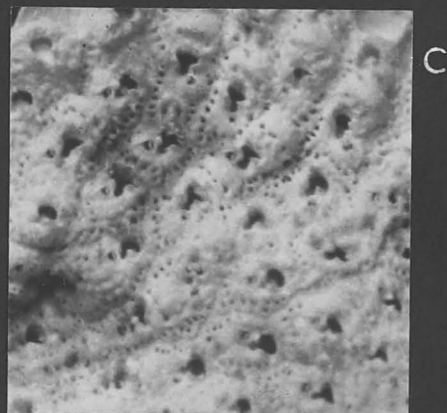
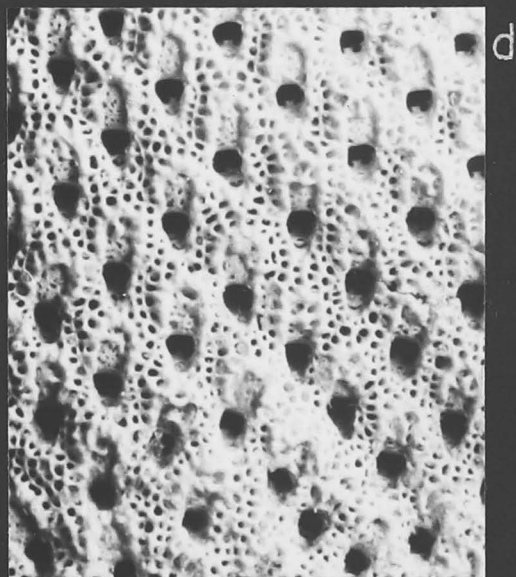
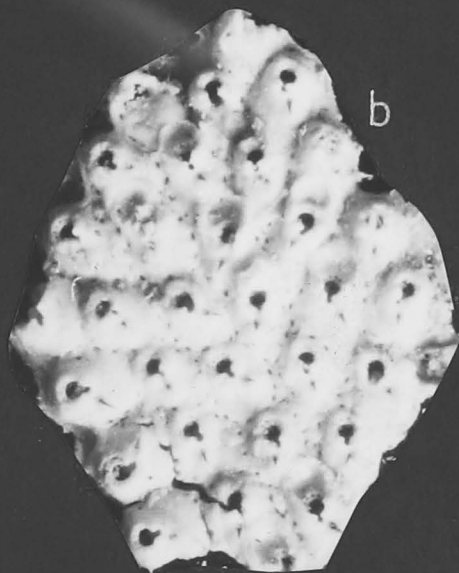
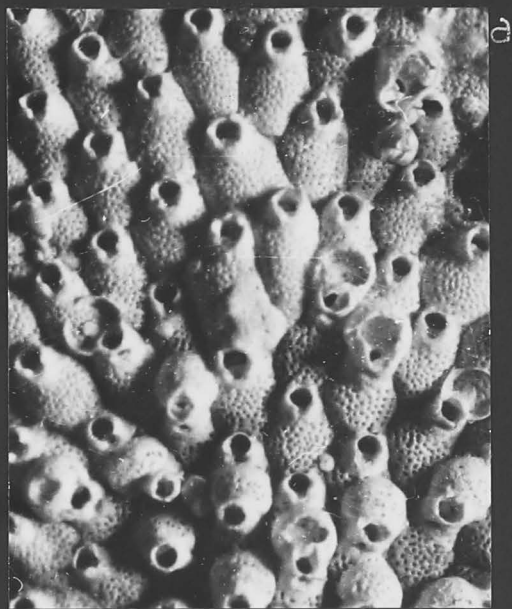


PLATE 18

PLATE 18

- Fig. a. Adeonellopsis yarraensis (Waters) x 34.
Station 941. Proximal region of a foliaceous
branch, comprising older zooecia with pseudopores;
absent in the marginal zooecial row.
- Fig. b. Inversiula inversa Waters sp. x 30.
(A.M. Cat. No. U.1790) Locality : Port Jackson,
New South Wales.
- Fig. c. Inversiula fertilis n.sp. Paratype. x 30.
Station TN.134. Gonozooecium encircled. Note that
the frontal pores are interstitial, i.e. they occur
in grooves between the tubercles whereas in I.
inversa (Waters), the pores are contained within the
frontal plates.

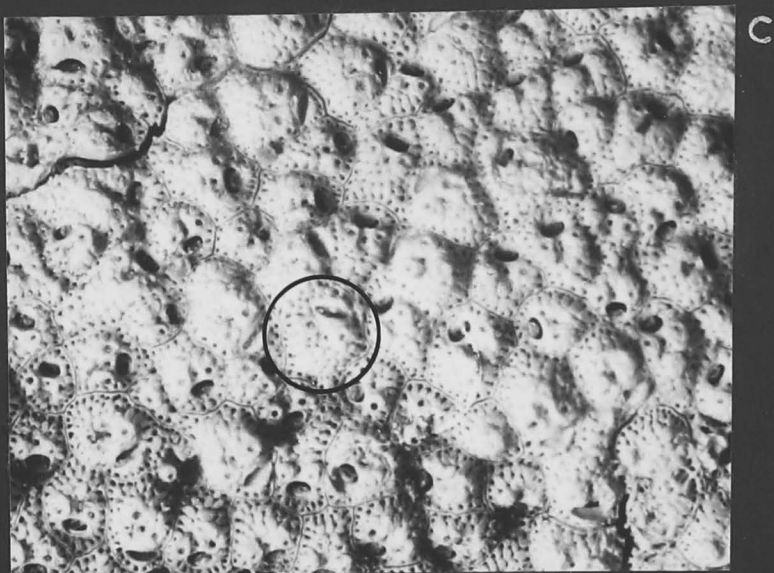
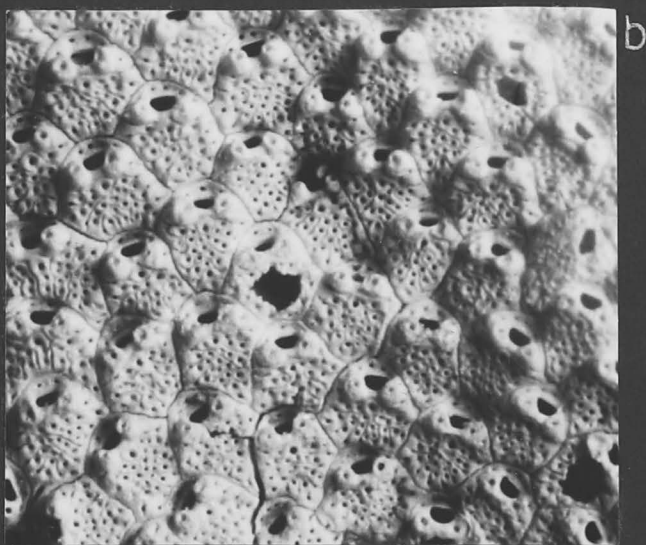
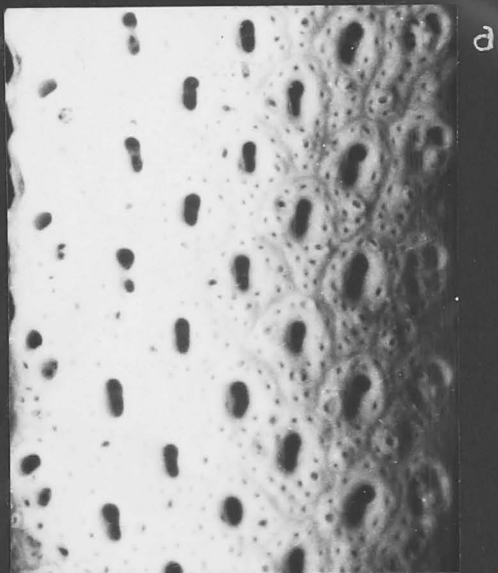


PLATE 19

PLATE 19

- Fig. a. Crepidacantha crinispina Levinsen x 25.
Station TN.134. Ovicell indicated.
- Fig. b. Crepidacantha bracebridgei Brown x 25.
Station 934. Ovicell encircled.
- Fig. c. Crepidacantha kirkpatricki Brown x 25.
(A.M. Cat. No. U.1581) Locality : South Coast
of South Australia. Ovicell indicated.
- Fig. d. Hippopodinella adpressa (Busk) x 30.
Locality : Slipper Island (Mortensen Collection)
- Fig. e. Hippopodinella adpressa (Busk) x 26.
(A.M. Cat. No. U.2442) Locality : New Caledonia.
This material comprises young zoecia which are
more closely allied to the "Discovery" material
(cf. text-fig. 94).

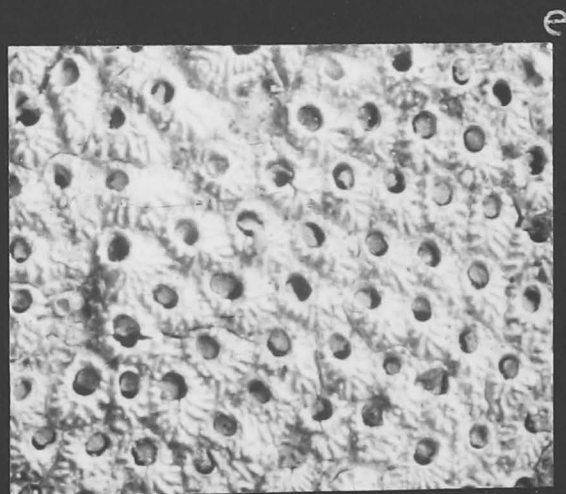
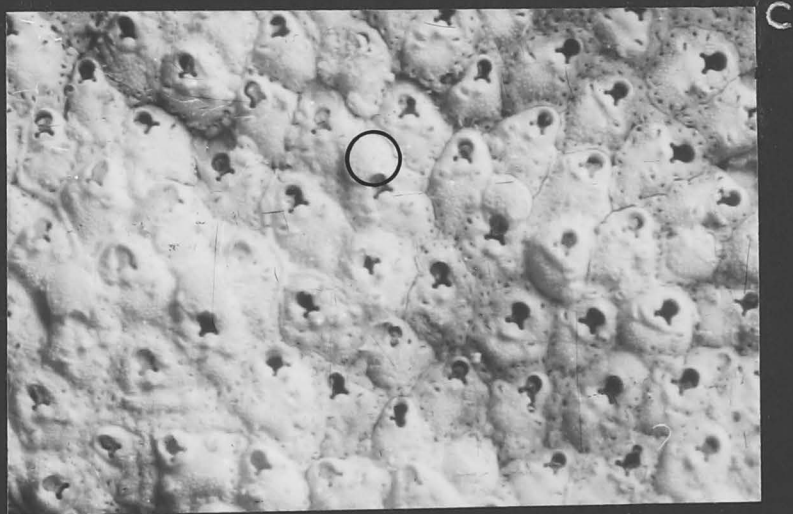
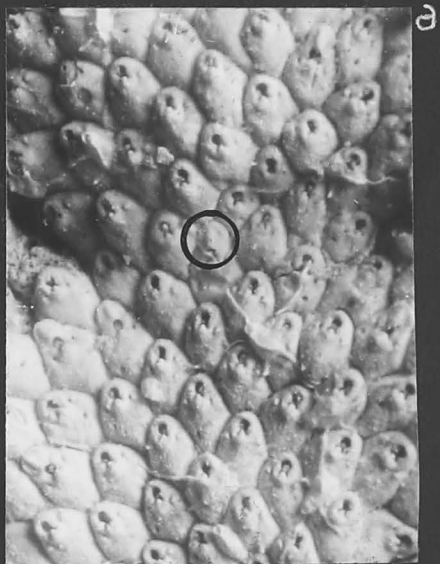


PLATE 20

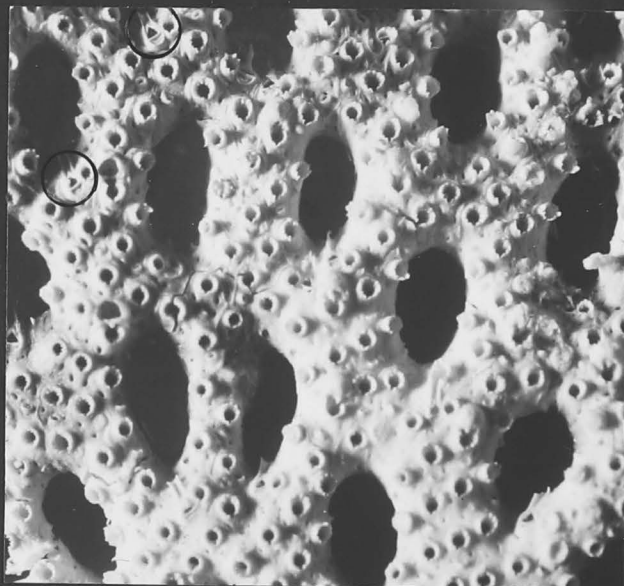
PLATE 20.

Fig. a. Iodictyum yaldwyni n.sp. Paratype. x 17.
Station 934. Frontal aspect, some adventitious
infra-fenestral avicularia are encircled.

Fig. b. Iodictyum yaldwyni n.sp. Paratype. x 17.
Station 934. Basal aspect, to show the stout
vibices enclosing tuberculate kenozoecia.

Compare with

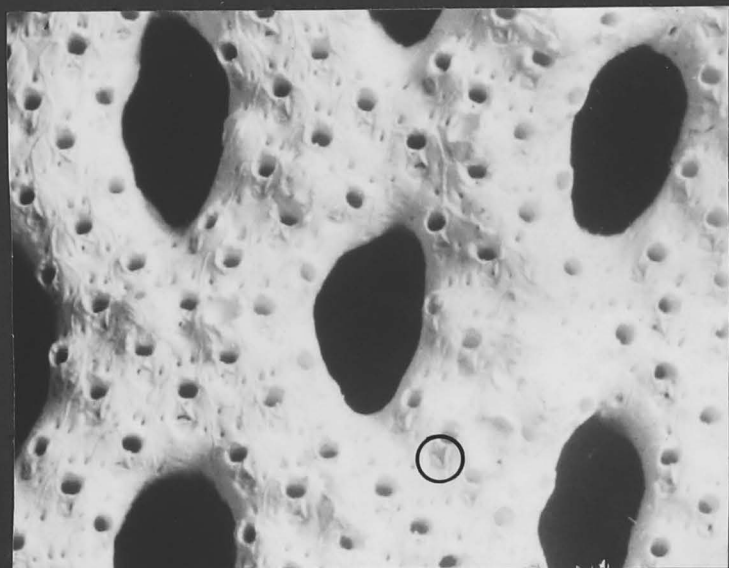
Fig. c. Iodictyum phoeniceum (Busk) x 30.
(N.M.V. Cat. No. 64916) Locality : Port Phillip
Heads. One acuminate frontal avicularium is
encircled.



a



b



c

PLATE 21

PLATE 21

- Fig. a. Iodictyum alatum n.sp. Paratype. x 30.
Station 934. Ovicell indicated.
- Fig. b. Sertella constricta n.sp. Paratype. x 30.
Station 934. Frontal aspect. Ovicell encircled.
- Fig. c. Sertella constricta n.sp. Paratype. x 30.
Station 934. Basal aspect. The tiny rostral
cusps of the acuminate avicularia are visible
within the fenestrae.
- Fig. d. Sertella fenestrata n.sp. Paratype. x 30.
Station 934. Frontal aspect. Ovicell indicated.
A primary and secondary zooecium of Chiastosella
longaevitas n.sp., are encrusting the infra-
fenestral region.
- Fig. e. Sertella fenestrata n.sp. Paratype. x 30.
Station 934. Basal surface.

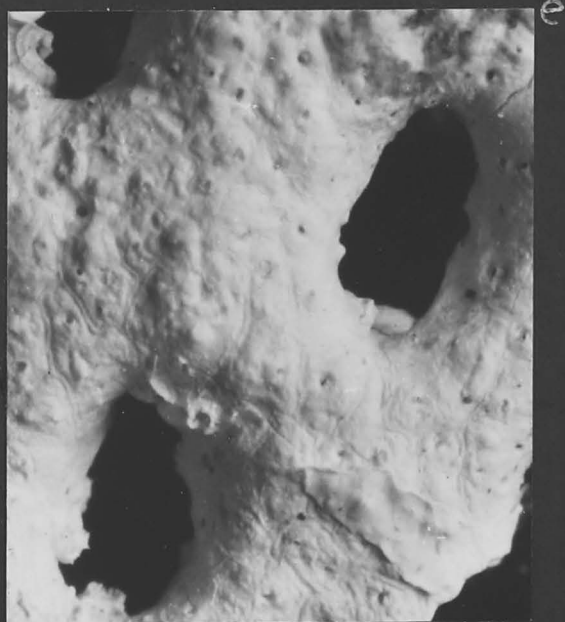
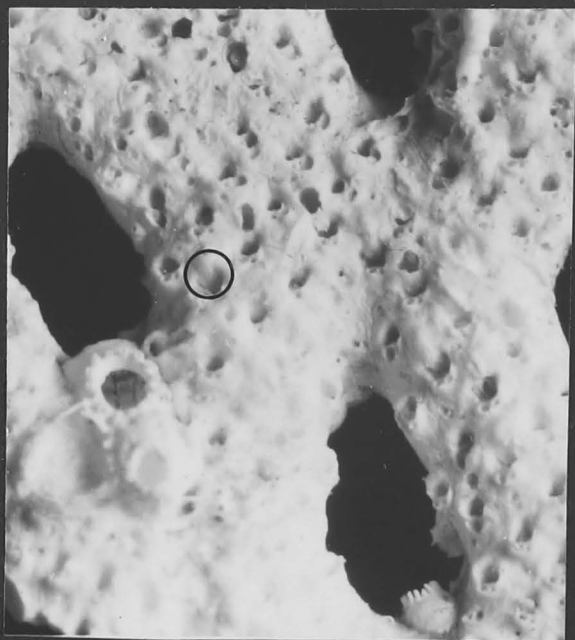
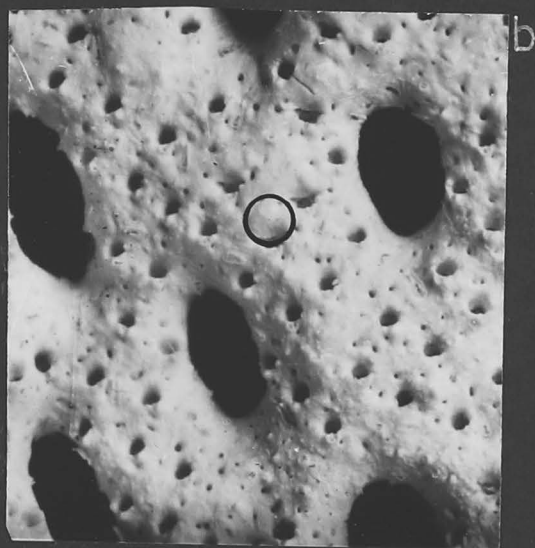
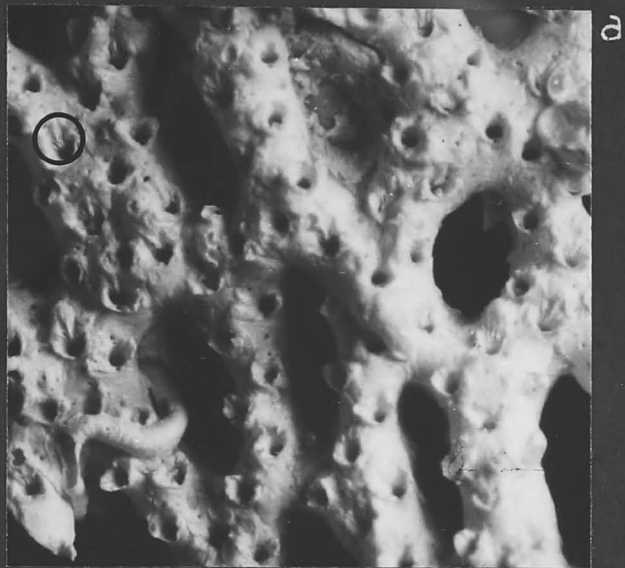


PLATE 22

PLATE 22

Fig. a. Sertella reticulata n.sp. Holotype. x 30.
Station TN.90. Frontal aspect. Ovicell indicated.

Fig. b. Sertella reticulata n.sp. Holotype. x 30.
Station TN.90. Basal aspect. Ligulate avicularium
encircled.

Fig. c. Phidolopora avicularis (MacGillivray) x 30.
Station 935. Frontal aspect. Ovicell indicated.

Fig. d. Phidolopora avicularis (MacGillivray) x 30.
Basal aspect. An infra-fenestral avicularium
situated on the proximal angle of the fenestra
is encircled. Note the prominent vibices.

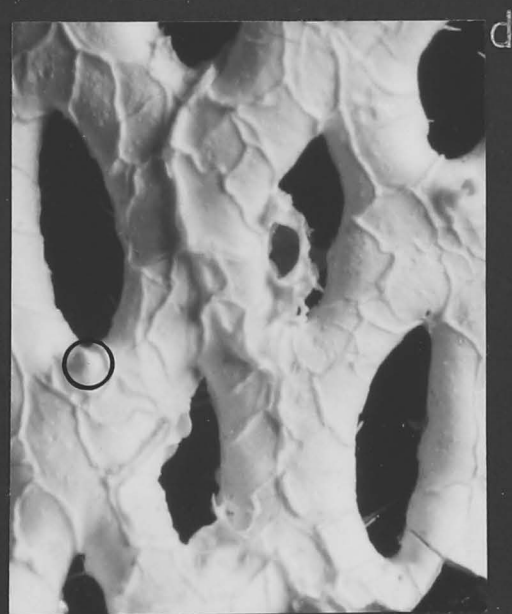
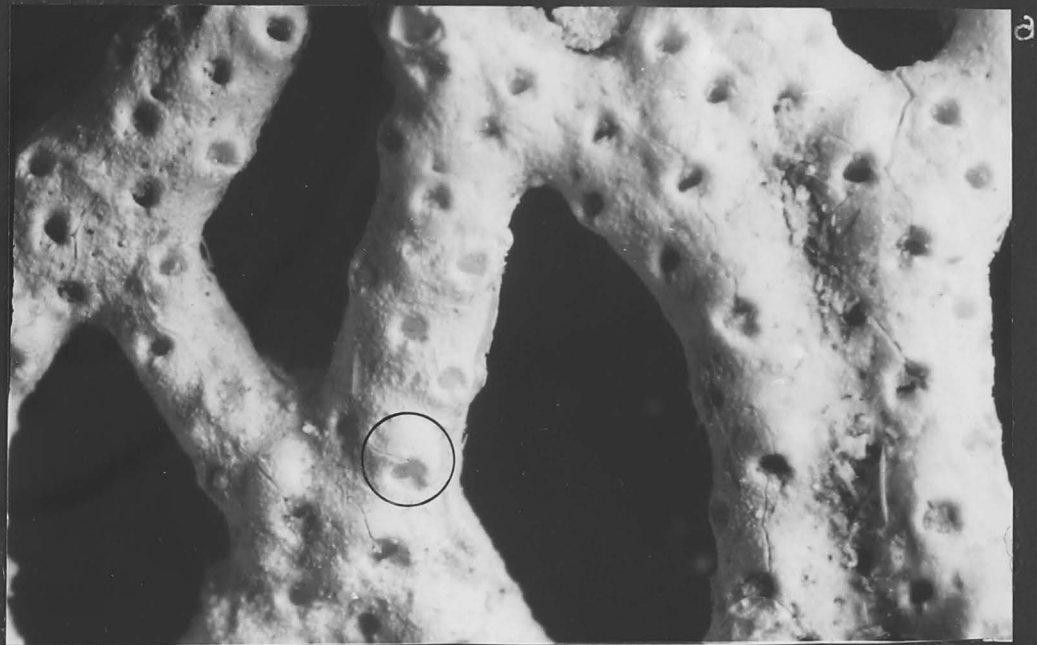


PLATE 23

PLATE 23

Fig. a. Hippellozoon novae-zelandiae (Waters) x 30.
Station 934. Frontal aspect. Ovicell indicated.

Fig. b. Hippellozoon novae-zelandiae (Waters) x 30.
Station 934. Basal aspect.

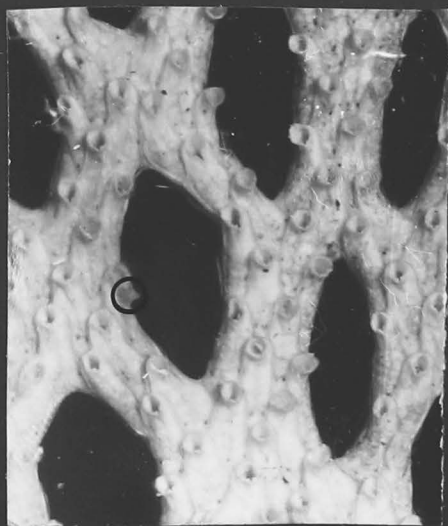
Fig. c. "Retepora" fistula n.sp. Paratype. x 20.
Station TN.90. A fenestral avicularium is
encircled.



a



b



c

PLATE 24

PLATE 24

- Fig. a. Rhynchozoon scintillans (Hincks) x 26.
Station 934. Note the schizoporelliform orifice.
- Fig. b. Rhynchozoon scintillans (Hincks) x 26.
Acuminate frontal avicularium encircled.
- Fig. c. Rhynchozoon sp. x 30. Wataepoolan limestone
(Oligocene) South West Victoria. Brown
Collection.
- Fig. d. Rhynchozoon larreyi (Audouin) x 30.
Station TN.134. Immersed ovicell encircled.
- Fig. e. Calyptotheca janua (Livingstone) Paratype. x 25.
(A.M. Cat. No. U.2703) Locality : Ten miles
North of Cape Maria van Diemen.

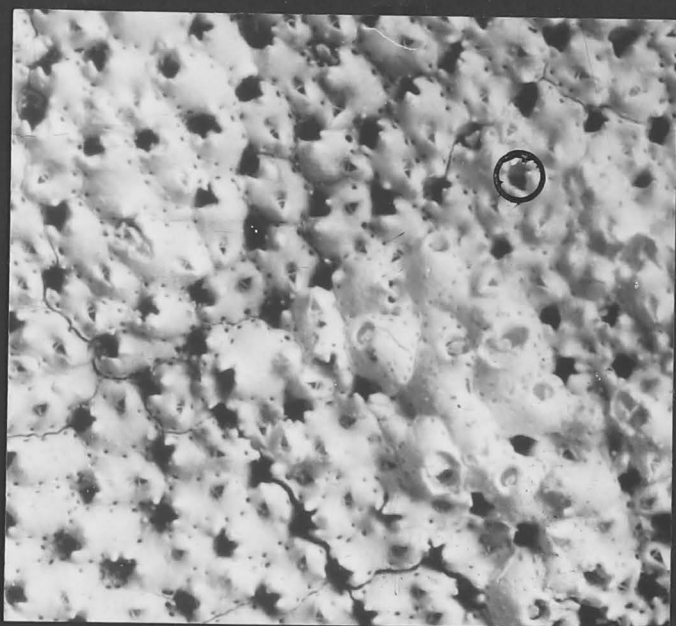


a

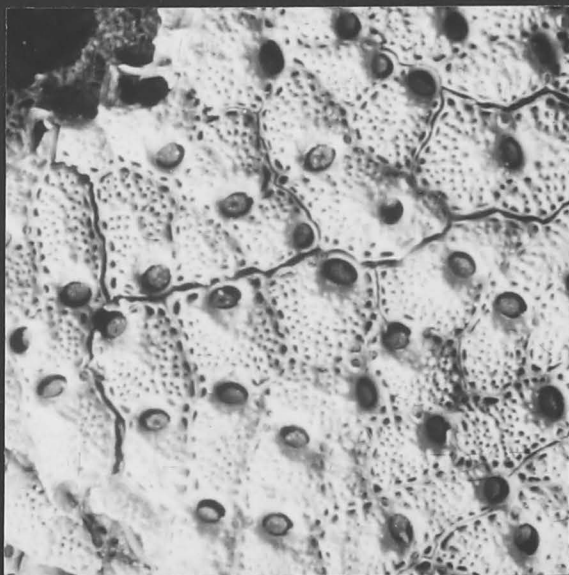


b

c



d



e