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JAMES HECTOR, M.D., C.M.G., F.R.S.,
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MANUAL

*Division of Mollusks
Sectional Library*

OF THE

NEW ZEALAND MOLLUSCA.

A SYSTEMATIC AND DESCRIPTIVE

CATALOGUE

OF THE

MARINE AND LAND SHELLS, AND OF THE SOFT
MOLLUSKS AND POLYZOA OF NEW ZEALAND
AND THE ADJACENT ISLANDS.

BY

FREDERICK WOLLASTON HUTTON, F.G.S., C.M.Z.S.,

Professor of Biology, Canterbury College, New Zealand University.
(Late Curator of the Otago Museum.)

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Class—Polyzoa.

Alimentary canal suspended in a double walled sac, capable of being partially protruded; mouth surrounded by a circle of hollow ciliated tentacles; animals always composite.

ORDER—PHYLACTOLÆMATA.

Lophophore bi-lateral; mouth with an epistome.

Sub-Order—Lophophea.

Arms of lophophore free or obsolete. (Fresh water.)

FAMILY—PLUMATELLIDÆ.

Zoarium rooted.

Genus, PLUMATELLA.—Bosc.

Zoarium confervoid, branched, composed of a series of membrano-corneous tubular cells, each of which constitutes a short ramulus with a terminal orifice; branches distinct from one another. Lophophore crescentic, with two long arms.

P. aplinii, *Macgillivray, Trans. Royal Soc. Vic. 1860, p. 204.* Zoarium adherent, creeping; cells cylindrical, with a distinct keel; aperture oblique.

Homebush Creek, Malvern Hills, under stones. Australia.

I have only examined dried specimens, but Macgillivray says that the tentacula are about sixty, and the statoblasts elongated. It approaches very near to *P. emarginata* of Europe.

ORDER—GYMNOLEMATA.

Lophophore orbicular, or nearly so; no epistome. Marine.

Sub-Order—Cheilostomata.

Polypide completely retractile; evagination of tentacular sheath perfect; orifice of cell sub-terminal, of less diameter than the cell, and usually closed with a moveable lip or shutter; sometimes by a contractile sphincter; cells not tubular; consistence calcareous, corneous, or fleshy.

FAMILY—CATENICELLIDÆ.

Zoarium divided into distinct internodes by flexible joints, internodes formed by a single series of cells.

Genus, CATENICELLA—Blainville.

Cells arising from the upper and back part of the lower one by a short corneous tube, all facing the same way, and forming dichotomously divided branches of an erect phytoid zoarium; cell at each bifurcation geminate; each cell with two lateral processes usually supporting an avicularium; ovicells either sub-globose and terminal, or galeriform, and placed below the opening of a cell in front.

This is altogether a southern genus.

(a.) Fenestratæ.

Cells fenestrate in front; ovicells terminal.

C. ventricosa, *Busk, Cat. Pol. Brit. Mus., p. 7.* Cells oval, compressed; avicularia wide, sometimes supporting a cup-like cavity, sometimes a closed broad conical spine, fenestræ seven, with fissures radiating towards a rounded central pore; front of cell studded with minute acuminate papillæ; back smooth, sometimes spotted. Dirty white; 3 or 4 inches long.

Lyll Bay. Bass Straits, 45 fathoms.

C. hastata, *Busk, l.c., p. 7*; *C. bicuspis*, *Gray, Dieff, N.Z., ii., p. 293.* Cells oval; fenestræ seven to nine, disposed in a crescent, with fissures radiating towards the median line; avicularia supporting large, pyramidal, pointed, hollow processes, compressed and perforated before and behind by five or six small circular pores. Yellowish-white or reddish; 3 or 4 inches long.

Lyll Bay. Bass Straits, 45 fathoms.

C. aurita, *Busk, l.c., p. 8.* Cells oval or sub-globose; avicularia large and strong, two blunt processes, the upper the longer, on each side of the opening in front; fenestræ five, around a central one.

Cook Strait (Lyll). Campbell's Island. Bass's Strait.

C. cribraria, *Busk, l.c., p. 9.* Cells sub-globular, compressed, more or less alate; avicularia large, without any superior appendage, and prolonged downwards into elevated lateral alæ; fenestræ numerous, small, round, equidistant, the outside ones larger; a minute central pore.

Lyll Bay. Bass Straits, 45 fathoms.

C. margaritacea, *Busk, l.c., p. 9.* Cells oval or sub-globular, much compressed; avicularia short and broad, supporting a deep, cup-like cavity; fenestræ five, large, with fissures radiating upwards; lower margin of aperture notched in the middle; back of the cell minutely sulcate; sulci short, interrupted, irregular.

Lyll's Bay. Swan Island. Australia.

(b.) Vittatæ.

Cells furnished with a narrow elongated band or "vitta" on each side ; without fenestræ ; ovicells galeriform, not terminal.

C. perforata, *Busk, l.c., p. 10.* Cells elongated oval ; avicularium processes large, perforated at the base, or by several openings ; vittæ long, wider below, lateral ; surface in front papillose.

New Zealand (Hooker, Lyall, Darwin). Tasmania. Australia.

C. ringens, *Busk, l.c., p. 10.* Cells ovoid or sub-globular ; avicularia usually very unequal, the larger one gaping ; vittæ anterior, broad ; surface in front smooth.

New Zealand (Dieffenbach). South Africa.

C. elegans, *Busk, l.c., p. 10.* Cells elongated ovoid ; avicularia large and projecting, without any superior appendage ; vittæ narrow, sub-lateral, surface in front papillose.

Port Cooper. Banks Peninsula. Bass Straits, 47 fathoms. South Africa. Port Dalrymple.

C. cornuta, *Busk, Voyage of Rattlesnake, I., p. 361.* Cells oval ; avicularia in most cells wholly transformed into long pointed retrocedent spines, on one or both sides, in others into shorter spines or unaltered ; vittæ linear, extremely narrow, entirely lateral, and extending the whole length of the cell from the base of the avicularium. Surface in front smooth. Yellowish-white.

New Zealand (Darwin). Bass Straits.

(c.) Simplicis.

Without vittæ or fenestræ.

C. scutella, *Hutton ; C. alata, Hutton, C.M.M., p. 89 ; not of Wyr. Thomson.* Cells ovate, narrowed below ; lateral processes projecting horizontally and forwards from the whole length of the cell ; mouth round, simple, with a thickened rim, placed in the upper part of the cell ; surface smooth, with a single median pore (fenestra?), and occasionally another on each side of it.

Lyll Bay.

C. geminata, *Wyr. Thomson, Nat. Hist. Rev., 1858, Q.J.M.S. 7, p. 147.* Axial cell, geminate. The secondary cell developed alternately on either side of the axis. Axial cells, pyriform ; a large gaping avicularium on the angle opposite the secondary cell ; secondary cell giving off by a terminal horny tube a single wedge-shaped peripheral cell ; cell mouth, large ; a deep notch in the centre of the lower lip ; in the primary and secondary axial cell four or five blunt spines surround the upper margin of the mouth, which is surmounted in the peripheral cells by two longer ear-like processes ; front of cell tuberculated.

A small species epiphytic on red algæ.

New Zealand (Dr. Joliffe). Australia.

C. carinata, *Busk, Voyage of Rattlesnake, Vol. I., p. 363.* Cells oval, narrowed at each end; lateral processes (without avicularia?) projecting horizontally outwards from the side of the aperture, which is nearly central; mouth with a small tooth on each side, and below it a triangular space with three strong conical eminences; a few scattered papillæ on the surface of the sides and back; ovicelligerous cells geminate.

New Zealand (Dr. Joliffe). Bass Strait.

FAMILY—CELLULARIIDÆ.

Zoarium divided into distinct internodes by flexible joints; internodes formed by two or more cells in a row; cells disposed in the same plane, forming linear branches of a dichotomously divided, phytoid, erect, zoarium.

Genus, CELLULARIA—Pallas.

Cells bi-triserial, more than four in each internode; oblong or rhomboidal, contiguous; perforated behind; without avicularia or vibracula.

C. cuspidata, *Busk, l.c., p. 19.* Upper and outer angle produced into a strong spine; a single perforation behind; a cuspidate spine on the summit of the median cell at each bifurcation; ovicell smooth.

Lyal's Bay. Australia.

C. monotrypa, *Busk, Voyage of Rattlesnake, Vol. I., p. 368.* Cells oblong, narrowed below, with a single perforation in the upper and outer part behind; opening oval, margin smooth; a short spinous process at the upper and outer angle; a sharp, short spine in the middle of the upper border of the middle cell, at a bifurcation; ovicell (?) in form of a very shallow excavation in the upper part of the cell in front.

New Zealand (Darwin). Bass Strait.

Genus, MENIPEA—Lamouroux.

Cells oblong or elongated, attenuated downwards; imperforate behind, sometimes with a sessile avicularium on the upper and outer angle; one or two sessile avicularia on the front of the cell below the aperture.

M. cirrata, *Gray, Dieff, N.Z., ii., p. 292.* Cells pyriform, constricted below, six in each internode, one of the lower usually more or less aborted; usually one large lateral avicularium to each internode; three marginal spines very long and strong; anterior avicularium single, its upper border toothed.

New Zealand (Dr. Sinclair). South Africa.

M. buskii, *Wyr. Thomson, Nat. Hist. Rev., 1858, Q.J.M.S., 7, p. 151.* Cells, elongated, attenuated downwards, three in each internode; cell-mouth, large, oval, oblique, the lower third filled up by a tuberculated calcareous plate; upper lip prolonged, and fringed with

from four to five spines, attached to the lip by horny joints, and one of them, usually the second from the outer edge, very long, curved, and pod-like; there is often an additional spine on the upper and inner margin of the cell-mouth; operculum spine, strong and clavate, stretching upwards and outwards from the lower and inner lip of the cell-aperture; connecting horny tube between the internodes, double; ovicell, spherical, with a richly granular surface, imbedded among the cells, on the cavities of two of which it encroaches.

New Zealand (Dr. Joliffe). Tasmania.

Genus, SCRUPOCELLARIA—Van Beneden.

Cells rhomboidal, with a sinus on the outer and hinder aspect; each furnished with a sessile avicularium at the upper and outer angle, and with a vibraculum placed in the sinus on the outer and lower part behind; aperture oval or sub-rotund, spinous above, with or without a pedunculate operculum; cells bi-serial and numerous at each internode.

S. scruposa, *Linnaeus*. Cells sub-elongate, narrow; aperture elliptical, with three or four spines above; ovicell smooth.

Lyll Bay. Europe.

S. scrupea, *Busk, Ann. Nat. Hist., 2nd Ser., Vol 7., p. 83, pl. ix., f. 11-12.* Cells rhomboidal, truncated above and below, sinuated behind; aperture sub-oval, margin a little thickened, armed above with four or five spines; operculum peduncled, reniform; ovicell, cucullate, sub-appressed, smooth.

New Zealand. (Dr. Joliffe). Europe.

Genus, EMMA—Gray.

Cells in pairs or triplets; opening more or less oblique, sub-triangular, partially filled up by a granulated calcareous expansion; a sessile avicularium generally on the outer side below the level of the opening.

Found only in Australia and New Zealand.

E. crystallina, *Gray, Dieff. N.Z., ii. p. 293.* Cells in pairs; one, two, or three spines on the outer edge, the central usually the longest and strongest.

Bass Straits, 45 fathoms.

Parasitic upon *Polyzoa*, &c.; circinate, branched; branches irregular, divaricate; the opening of the cell triangular, very obliquely placed.

Lyll Bay. Campbell Island.

E. tricellata, *Busk, l.c., p. 28.* Cells in triplets; three or four long spines on the upper and outer part, a small spine on the inner and lower part of the margin of the aperture.

New Zealand (Hooker). Bass Straits. Campbell Island.

Parasitic upon *Catenicella*, &c. Habit long, straggling.

FAMILY—SALICORNARIIDÆ.

Zoarium divided into internodes by flexible joints; internodes formed by cells disposed around an imaginary axis, forming cylindrical branches of a dichotomously divided erect zoarium.

Genus, SALICORNARIA—Cuvier.

Front of cell depressed, surrounded by an elevated ridge, by which the surface is divided into more or less regular rhomboidal or hexagonal spaces; no aperture; avicularia disposed irregularly.

S. farciminoïdes, *Johnston, Hist. Brit. Zooph.*, p. 355. Front of cell rhomboidal, or hexagonal with a straight side at top and bottom, sometimes arched above; cells in the same series contiguous; surface granular; avicularium distinct from and above a cell, rostrum immersed, mandible semicircular.

Europe. South Africa. Australia.

S. malvinensis, *Busk, l.c.*, p. 18. Front of cell arched above, very acute below; cells distant in the same series; surface smooth; avicularium replacing a cell, rostrum immersed, mandible wide, large, triangular, pointed.

South America. Falkland Islands.

Genus, ONCHOPORA—Busk.

Cells, ventricose, coalescent; not bordered by a raised margin; ovicells, inconspicuous.

New Zealand only.

O. hirsuta, *Lamx., Hist. des Polyp. cor.*, p. 126, *Pl. ii.*, f. 4. Front of cell rhomboidal, margin raised, surface granular; cells in the same series distant; a long corneous tube at the base of each cell.

Lyall Bay.

FAMILY—SCRUPARIADÆ.

Zoarium continuous throughout; cells uni-serial.

Genus, ÆTEA—Lamouroux.

Cells tubular, erect, scattered, rising from a creeping fistular fibre adnate to a foreign base; aperture terminal, or sub-terminal.

Æ. dilatata, *Busk. Ann. Nat. Hist.*, 1851, p. 85, *pl. ix.*, f. 14. Cells cyathiform at the apex, curved, ringed, aperture largely dilated, sub-orbicular. (Busk.)

Torres Strait (?) (Quekett.) Foveaux Straits. (G. Joachim.)

Genus, **BEANIA**—Johnston.

Zoarium confervoid, sub-corneous, or calcareous; cells arising one from another by a slender filiform tube; cell open in front, the edges of the opening furnished with hollow spinous processes arching over the opening; mouth terminal, with a denticle on each side.

B. swainsoni, *Hutton, C.M.M., p. 91.* Zoarium erect, phytoid, dichotomously branched, sub-corneous; cells sub-continuous, one arising from the top of another; costæ eight to twelve.

From the collection of the late W. Swainson.

FAMILY—CABEREIDÆ.

Zoarium continuous throughout, erect, or flexible, dichotomously divided into ligulate bi-multiserial branches, on the backs of which are vibracula, or avicularia, one common to several cells; avicularia sessile.

Genus, **CABEREA**—Lamouroux.

Back of the branches covered with large vibracula, which are placed obliquely in two rows, diverging in an upward direction from the middle line, where the vibracula of either side decussate with those of the other; avicularia, when present, sessile on the front of the cell.

C. boryi, *Andouin, Busk, l.c., p. 38; Selbia zealandica, Gray, Dieff, N.Z., ii., p. 292.* Cells bi-serial; aperture oval; pedunculate operculum expanded principally downwards, and sometimes sending off a process to the opposite side of the aperture; a single spine on the inner side springing from the peduncle of the operculum; two marginal spines on the outer side of the aperture; ovicell large, arcuate; vibracula ovoid, setæ serrated.

Lyall Bay. England. South Africa. South America. Cumberland Island.

C. lata, *Busk, l.c., p. 39.* Bi-multiserial; marginal cells with a single sub-apical spine; central cells without marginal spines; setæ serrated.

Australia.

Perhaps a variety of *C. hookeri*, *Johnston, Brit. Zooph., p. 338* (Busk).

FAMILY—BICELLARIIDÆ.

Zoarium continuous, erect, dichotomously divided into narrow ligulate, bi- or multiserial branches; no vibracula; avicularia, when present, pedunculate and articulated.

Genus, **BICELLARIA**—Fleming.

Cells turbinate, distant; aperture directed more or less upwards; several spines, marginal or dorsal.

B. tuba, *Busk, l.c., p. 42.* Aperture round, looking almost directly upwards; a digitiform hollow process below the outer border, supporting two or four long incurved spines; two or three other long curved sub-marginal spines behind or above the aperture, none below it in front; a solitary spine on the back, a short way down the cell; avicularia very long, trumpet-shaped, arising from the back of the cell.

Lyall Bay. Bass Strait, 45 fathoms.

Genus, HALOPHILA—Gray.

Cells continuous, attenuated downwards, much expanded upwards, with a large plain aperture; unarmed.

Australia and New Zealand only.

H. johnstoniæ, *Gray, l.c., ii., p. 292.* Cells obliquely truncated above, with a short spine on the outer angle; aperture large oval; margin slightly thickened. Pale gray.

Lyall Bay. Bass Strait.

Genus, BUGULA—Oken.

Cells elliptical (viewed behind), closely contiguous, bi-multiserial; aperture very large; margin simple, not thickened; avicularia, when present, pedunculate and articulated.

B. neritina, *Linnaeus; Busk, l.c., p. 44.* Cells quadrangular, lengthened, with a truncated summit, the angles projecting.

Lyall Bay. Australia. Auckland Islands. Red Sea. Rio de Janeiro.

B. dentata, *Lamouroux, Busk, l.c., p. 46; Acamarchis tridentata, Krauss.* Cells bi-serial, oblong, rounded at each end; aperture oval; three marginal spines on the outer side, and one on the inner; avicularia lateral, capitate; ovicell superior, cucullate, blue. Gray or blue (Busk).

New Zealand (Hooker, Lyall). Australia. Tasmania. South Africa.

B. prismatica, *Gray, l.c., ii., p. 292.* Zoarium rather rigid, compressed, dichotomously branched, erect, reddish-brown; cells, distant, alternate, cylindrical; aperture, entire, produced into a dentiform angle at the outer margin, from which a keel descends obliquely to the inner and lower corner of the cell; ovarian cells, globular, white, situated in a single row on the front of the zoarium.

Motanau, Canterbury; and Ocean Beach, Dunedin. (F.W.H.)

Genus, MUSCARIA—Hutton.

Cells multiserial, arranged back to back on both sides of the branches. New Zealand only.

M. armata, *Hutton, C.M.M., p. 93.* Branches robust, flattened; cells oval, convex, arranged in longitudinal rows which are divided by

elevated ridges; cells in the same series contiguous; a long curved smooth spine by the side of every alternate cell; aperture small, transverse, oval, the lower lip prominent. Avicularia ——(?).

Zoarium about an inch in height, brown. When viewed by transmitted light, pale brown, with the lips of the aperture dark brown.

Motatau. On the roots of *Boltenia australis*

FAMILY—FLUSTRIDÆ.

Zoarium flexible, expanded, foliaceous, erect, sometimes decumbent and loosely attached; cells multiserial, quincuncial or irregular.

Genus, FLUSTRA—Linnæus.

Cells contiguous, on both sides of the frond.

F. papyracea, *Ellis; Busk, l.c., p. 48.* Cells oblong, slightly enlarged upwards, a short marginal spine at each upper angle; avicularia fusiform, situated on the right or left marginal spine; olivaceous, in places pinkish.

Lyall Bay. Britain.

Genus, CARBASEA—Busk.

Cells continuous, on one side only of the frond.

C. pisciformis, *Busk, l.c., p. 50.* Cells (viewed behind) elongated, truncated at both ends, contracted at the waist; in front pyriform, much expanded in the middle, contracted at the top and tapering downwards, slightly expanding again at the end; aperture large, occupying most of the front of the cell; ovicells immersed, marked with radiating lines.

New Zealand. Cook Strait. Tasmania. Australia.

C. episcopalis, *Busk, l.c., p. 52.* Cells pyriform, cylindrical or barrel-shaped; back marked with transverse rugæ; aperture circular, superior; ovicells lofty, keeled; avicularia none; pale stone colour.

Lyall Bay. Bass Strait, 45 fathoms.

C. indivisa, *Busk, l.c., p. 53.* Frond semicircular, undivided, sub-plicated; cells oblong, surface behind granulated; ovicells —— (?). avicularia none (Busk).

New Zealand (Hooker).

P. cyathiformis, *Macgillivray, Trans. Phil. Inst., Victoria, 1859, p. 97, f. 2.* Zoarium infundibuliform, with the cells on the inner surface, white, translucent; cells pyriform or oval, smooth, arranged in radiating series; avicularia none; aperture lunate, not extending across the front of the cell.

Lyall Bay; on *Catenicella*. Australia.

Genus, **DIACHORIS**—Busk.

Cells disjunct, each connected with six others by tubular processes ; frond sometimes partially adnate and decumbent.

A southern genus only.

D. magellanica, *Busk, l.c., p. 54.* Cells semi-erect, open in front, oval ; mouth circular, with a thickened and raised margin ; a pedunculate and articulated capitate avicularium attached to the margin of the cell near the top on each side ; ovicell —(?) (Busk).

New Zealand (Lyll). Straits of Magellan.

Frondose, with cells on both sides, also loosely adnate.

D. inermis, *Busk, l.c., p. 54.* Cells decumbent, boat-shaped, entirely open ; two short marginal spines on each side near the top ; ovicell —(?) , avicularia —(?) (Busk).

New Zealand (Lyll). Straits of Magellan.

D. buskiana, *Hutton, C.M.M., p. 94.* Cells semi-erect, membranous, oval, open in front ; mouth circular, with a projecting lower lip, and often a small nodule in the centre ; nodule and lower lip granulated, the rest finely transversely striated ; connecting tubular processes short, about eleven to each cell.

Lyll Bay.

Encrusting seaweeds, loosely attached.

FAMILY—FARCIMINARIIDÆ.

Zoarium continuous, erect, flexible, dichotomously branched ; branches cylindrical, the cells disposed round an imaginary axis.

Genus, **FARCIMINARIA**—Busk.

Corneous, flexible ; margin of cell much raised ; aperture occupying the whole front of the cell ; ovicell cucullate.

A Southern genus only.

F. aculeata, *Busk, l.c., p. 33.* Sides of the cells within the margin beset with furcate spines ; ovicell cucullate, external ; surface aculeate (Busk).

New Zealand (Lyll). Tasmania.

F. blainvillii, *Lamouroux ; Gray, l.c., ii., p. 293.* Sub-quadrangular, formed of four series of ovate convex cells, with an oblong margined mouth, and scattered with flexible root-like fibres (Gray).

New Zealand. (Dr. Sinclair.)

FAMILY—GEMELLARIIDÆ.

Zoarium continuous, dichotomously branched ; branches with cells in opposite pairs.

Genus, **CALWELLIA**—Wyv. Thomson.

Cells in pairs, joined back to back ; each pair of cells arising by tubular prolongations from the pair next but one below it ; each pair having a direction at right angles to the next ; at a bifurcation, each cell of the primary pair giving off a secondary pair ; ovicell, sub-globular, placed immediately above and behind the posterior margin of the cell aperture.

New Zealand and Australia.

C. bicornis, *Wyv. Thomson, Nat. Hist. Rev.*, 1858, *Q.J.M.S.*, vii., p. 153. The only known species.

Genus, **DIMETOPIA**—Busk.

Cells joined back to back ; aperture oblique ; each pair facing at right angles to those above and below ; at a bifurcation, the pair being disjoined, each of the disjoined cells gives off a secondary pair.

Australia and New Zealand only.

D. spicata, *Busk, l.c.*, p. 35. Cells infundibuliform ; margin thickened, with numerous equidistant, elongated, acute spines ; white and transparent, forming thick tufts about $1\frac{1}{2}$ to 3 inches or more in height ; color pink when alive.

Lyll Bay. Bass Straits, 45 fathoms.

D. cornuta, *Busk, l.c.*, p. 35. Cells contracted below the middle ; aperture oblique, wide above ; a strong conical process on each side above ; one or two long projecting spines in front, inserted below the margin ; branches narrower than the former ; yellowish ; tufts loose.

Lyll Bay. Bass Straits, 45 fathoms.

FAMILY—VINCULARIDÆ.

Zoarium rigid, calcareous, unarticulated. Cells disposed alternately round an imaginary axis, forming dichotomously dividing branches. Surface of polyzoary not areolated.

Genus, **VINCULARIA**—Defrance.

Branches of zoarium not tubular ; front of cells surrounded by a raised border, arcuate above, nearly straight below ; ovicells, immersed, opening above the mouth of the cell upon which they are placed.

V. neo-zelandica, *Busk, Q.J.M.S., N.S.*, i., p. 155, *pl.* 34, *f.* 5. Zoarium simple, rooted at the base by radical tubes ; arææ of cells sub-pyriform ; anterior wall perforated ; margins smooth ; orifice arched above ; lower lip with a broad central denticle.

New Zealand. (Dr. Lyall.)

FAMILY—MEMBRANIPORIDÆ.

Zoarium membrano-calcareous, or calcareous, expanded, encrusting, sometimes foliaceous, contorted and sub-erect. Cells horizontal, quincuncial or serial.

Genus, MEMBRANIPORA—Blanville.

Cells more or less irregularly disposed, or quincuncial, with raised margins, a greater or less extent of the front membranaceous and flexible.

M. membranacea, *Linnaeus, Busk, l.c., p. 56.* Cells oblong, with a short blunt spine at each upper angle.

Lyll Bay, on *Fuci*, etc. Europe. Australia.

M. pilosa, *Linnaeus; Gray, Dieff. N.Z., ii., p. 292; Johnston, Brit. Zooph., p. 280.* Cells prolonged below; a moveable spine or vibraculum below the lower margin of the aperture, sometimes aborted; an irregular number of marginal spines; wall of cell cribriform.

Lyll Bay. Europe. Australia.

M. lineata, *Linnaeus; Busk, l.c., p. 58; Johnston, l.c., p. 349.* Cells oval, separate, the margin armed with numerous slender spines, erect or bent inward.

Europe. Greenland.

M. tessellata, *Hutton, C.M.M., p. 96.* Cells oval, arrangement quincunc, front rounded above with the sides and bottom flat; margin rough with short projecting denticulations; interspaces granular; ovicells rather flat, granular.

Common, incrusting dead shells, etc.

M. brunnea, *Hutton, C.M.M., p. 96.* Cells broadly oval, with a single spine at the centre of each side projecting over the front; ovicells flattened with a median ridge; a cup-shaped avicularium on each side just below it; brown.

On *Turritella rosea*.

M. cyclops, *Busk, l.c., p. 61.* Front of cells oval; margin very much raised, beaded; a single avicularium below the aperture.

M. magnilabris, *Busk, l.c., p. 62.* Front of cells oval; upper margin semicircular, much raised; moveable lip very large, occupying the entire semicircular upper third of the front of the cell, remainder of the front of cell depressed, membranous or semi-calcareous, punctured South Africa. Atlantic.

Genus, LEPRALIA—Johnston.

Zoarium adnate, crustaceous, spreading from a centre in a more or less circular form; composed of contiguous or connected, calcareous, decumbent cells, the walls of which are complete in front.

1. *With Avicularia.*

L. reticulata, *Macgillivray*; *Busk, l.c., p. 66*; *Johnston, l.c., p. 317*. Cells ovato-ventricose; interspaces punctured; mouth raised, with a thin margin and a channelled sinus in the lower lip, two to three spines on the upper margin; a central avicularium immediately below the mouth; mandible acute; ovicell globular, punctured, its opening bounded below by the meeting of its sides above the avicularium.

Britain.

L. angela, *Hutton, C.M.M., p. 96*. Cells ovate, immersed, with radiating grooves; mouth sub-orbicular, the lower lip prolonged into a deep spout-like projecting sinus; a spoon-shaped avicularium on each side just below the mouth, directed horizontally outwards; ovicell large, globose, granular.

2. *With Vibracula.*

L. ciliata, *Linnaeus*; *Busk, l.c., p. 75*; *Johnston, l.c., p. 279*. Cells ovate or sub-globose, surface granular, an elongated acuminate vibraculum on one side of the body; a semilunar pore, frequently on an eminence, in the middle of the front of the cell above the centre; mouth with from five to seven spines; lower lip straight, entire; ovicell globose; surface granular.

Britain. Mediterranean. America. Australia.

L. lyallii, *Busk, l.c., p. 75*. Cells oval; walls thin, verrucose, or rugose; mouth raised; margin thickened, with a spout-like sinus in front, and five to six spines on the sides and above; a small vibraculum on many of the cells, on one side near the top (*Busk*.)

New Zealand. (*Lyall*.) On *Fuci*.

3. *Without Avicularia or Vibracula.*(a.) *With oral spines.*

L. variolosa, *Busk, l.c., p. 75*; *Johnston, l.c., p. 317*. Cells oval, immersed or sub-immersed, usually disposed in linear series; punctured or areolated round the margin, granular (sometimes punctured) in front; mouth rounded or sub-quadrangular, with two to four close set spines quite at the summit; lower lip with a projecting mucro and an internal bifid denticle; ovicells deeply immersed, also areolated round the margin.

Lyall Bay. Britain.

L. nitida, *Busk, l.c., p. 76*; *Johnston, l.c., p. 319*. Cells ovate, raised in front; wall composed of four to nine ribs on each side, the spaces between which are filled up by a diaphanous membrane; mouth with four to six oral spines; ovicell sub-globose, surface granular.

Britain.

L. ventricosa, *Hassall*; *Busk, l.c., p. 78*; *Johnston, l.c., p. 305*. Cells distinct above, or raised, immersed at the base, ventricose, ovate or sub-globose; mouth sub-orbicular, with a thickened raised margin; a bifid denticle on the lower lip, and four (rarely more) marginal spines; surface granular or irregularly striated; usually a pointed or broad mucro in front of the mouth; ovicells globular, prominent.

Lyall Bay. Britain.

L. urceolata, *Hutton, C.M.M., p. 97*. Cells large (.04 inch), ovate, ventricose, immersed behind; surface finely granular without any pores; mouth simple, scarcely thickened, sub-orbicular, lower lip straight; from four to seven spines on the upper margin.

On dead shells.

L. cancer, *Hutton, C.M.M., p. 97*. Cells ovate, sub-immersed, separated by depressed lines; surface coarsely granular; lower lip produced into a mucronate hollowed process, which covers the mouth, and is transversely striated; a short blunt incurved spine on each side of the mouth; in the fertile cells the lower lip is not mucronate but rounded, and the spines are absent; ovicells globose, coarsely granular.

Lyall Bay. On *Fuci*.

L. pellucida, *Hutton, C.M.M., p. 97*. Cells ovato-ventricose, smooth, thin, translucent, a pore in the centre; mouth nearly terminal, oblong, transverse, with four or five long spines on its upper margin; ovicell —(?). On *Fuci*.

(b.) Mouth without spines.

L. pertusa, *Busk, l.c., p. 80*; *Johnston, l.c., p. 311*. Cells ovato-ventricose, or rhomboid, immersed, separated by a raised line, punctured; mouth orbicular, or narrowed below, and with a small tooth on each side; margin scarcely thickened, unarmed; usually with an irregular perforated tubercle below the mouth; ovicell globose, punctured; purple.

Britain. Australia (?).

On dead shells and corals.

L. areolata, *Busk, l.c., p. 82*. Cells sub-ovate or diamond-shaped, depressed, quite immersed, quincuncial, outlines marked by raised lines; surface granular; mouth sub-orbicular, with a sinus below and a raised thickened margin.

Straits of Magellan, 10 to 20 fathoms.

L. malusii, *Busk, l.c., p. 83*; *L. biforis*, *Johnston, l.c., p. 314*. Cells ovate, frequently truncate at each end; front, especially round the margin, punctured with numerous stelliform pores; a central lunate pore; mouth rounded above, straight below, sometimes armed with three to four oral spines, sometimes forked; ovicells smooth, sometimes porcellanous, grooved round the upper border, adnate to the front of the cell above.

Britain. South America. Falkland Islands.

L. hyalina, *Busk, l.c., p. 84*; *Johnston, l.c., p. 301*. Cells sub-cylindrical, elongated or compressed and raised in front, sub-erect, the wall thin, transparent, and smooth; mouth circular, frequently with a contracted often sub-tubular sinus below, the upper or posterior margin much raised, sharp; ovicell globular, erect, free, punctured.

Britain. California. Greenland. Cape of Good Hope. Falkland Islands, but not New Zealand.

Var. D.—A sinus on the lower lip, and one or two low tubercles in the centre of the cell below one another.

Lyall Bay.

L. grandis, *Hutton, C.M.M., p. 98*. Cells large (.04 inch), ovate, ventricose; surface shining, sub-granular, often with one or two longitudinal wrinkles, and with distant pores; mouth simple, slightly thickened, sub-orbicular, with the lower lip flattened; ovicell—(?). Pale brown.

Common on dead shells.

L. vellicata, *Hutton, C.M.M., p. 98*. Cells immersed, areolate; mouth higher than broad, rounded at the top and contracted in the middle, the lower lip arched slightly upwards, and raised; ovicell globose, areolate.

FAMILY—CELLEPORIDÆ.

Zoarium composed of cells more or less vertical to its axis or plane, heaped together, or irregularly overlying each other.

Genus, CELLEPORA—Fabricius.

Zoarium calcareous, rigid, adnate, or erect; composed of urceolate, sub-erect, contiguous cells heaped together irregularly, or arranged quincuncially; an ascending rostrum on one or both sides of the mouth, furnished with an avicularium.

C. pumicosa, *Linnaeus; Busk, l.c., p. 86*; *Johnston, p. 295*. Glomerous; cells heaped, ovate or pyriform; mouth orbicula; rostrum large, pointed; avicularium on the internal aspect, oval; ovicell small, decumbent.

Lyall Bay. Britain. California. Bass Straits.

Forming small white balls on *Sertularia*, &c.

C. bispinata, *Busk, l.c., p. 87*. Cells ovate, elongated, surface granular; mouth orbicula; rostrum anterior, with a very minute avicularium on one side; two long oral spines on the opposite margin; brown.

Tasmania.

C. mamillata, *Busk, l.c., p. 87*. Cells ovate, ventricose, immersed, forming an incrusting polyzarium, the surface of which is studded with mamillary projections; mouth orbicular; rostrum large,

conical, with a large avicularium on the internal face, sometimes a conical spine on the opposite side of the mouth.

Patagonia.

C. ampliata, *Hutton, C.M.M., p. 99.* Massive, free; cells agglomerated, vertical, smooth, ovate, with a row of large punctures round the margin; mouth ovate or sub-orbicular, thin.

Lyll Bay.

C. agglutinans, *Hutton, C.M.M., p. 99.* Massive, free, enclosing serpulæ, &c.; cells agglomerated, vertical, finely granulated, ovate; mouth sub-orbicular, lower lip flattened, sometimes produced into a short incurved spout.

Lyll Bay. South Australia.

FAMILY—ESCHARIDÆ.

Zoarium erect, rigid, foliaceous and expanded, lobate or reticulated; cells disposed quincuncially in the same plane on one or both sides of the zoarium.

Genus, ESCHARA—Ray.

Zoarium foliaceous and expanded, or branched and sub-linear; cells on both surfaces back to back, immersed, coalescent, horizontal to the plane of the axis.

(a.) *More or less expanded, foliaceous.*

E. unicornis, *Hutton, C.M.M., p. 99.* Zoarium expanded; cells short, with a few large pores on the surface; interstices finely granulated; mouth sub-orbicular, flattened below, lower lip produced into a rather incurved spout; a single spine on the right or left side of the mouth.

E. flexuosa, *Hutton, C.M.M., p. 99.* Foliaceous, infundibuliform, much waved, springing from a broad base; cells elongated, granular, separated by one or two rows of pores; mouth transverse, oval; a large spoon-shaped avicularium in the centre, below the lower lip.

(b.) *Divided into branching lobes.*

E. platalea, *Busk, l.c., p. 90.* Cells ovate, acute inferiorly, with a depressed area below the mouth in front, at the bottom of which is a simple pore; avicularia irregularly scattered over the polyzoarium, rare, with a spoon-shaped mandible.

Australia.

E. lichenoides, *Milne-Edwards; Busk, l.c., p. 90.* Cells ovate, punctured in the centre by three to four stellate pores, which soon coalesce into a single apparent opening; mouth sub-orbicular; a small prominent avicularium on each side immediately below the mouth, looking outwards.

Australia.

Genus, **RETEPORA**—Lamark.

Zoarium foliaceous, reticulate, infundibuliform or contorted, subpedunculate; cells decumbent, opening on the upper surface only.

R. cellulosa, *Busk, l.c., p. 93*; *R. reticulata*, *Johnston, l.c., p. 353*. Zoarium turbinate or crateriform, undulated, curled; cells subcylindrical; surface smooth; mouth sub-orbicular; lower lip projecting, with an avicularium on one side; surface strongly vibicate; a papilliform avicularium at the lower angle of the fenestræ; white.

Chatham Islands. Europe. Cape Horn. Australia.

Genus, **HEMESCHARA**—Busk.

Polyzoarium foliaceous, contorted, or laminar, composed of a single layer of cells disposed quincuncially, and opening on one surface only.

H. fairchildi, *Hutton, C.M.M., p. 100*. Cells ovate, immersed, granular, punctured round the edge; mouth simple; lower lip straight or with a sinus; occasionally with an avicularium on one side of the mouth; ovicell globose, granular; white.

Cook Strait.

Forming an easily detached crust on dead shells.

Sub-Order—Cyclotomata.

Cells tubular; orifice terminal, of the same diameter as the cell, without any moveable apparatus for its closure; consistence calcareous.

FAMILY—CRISIIDÆ.

Zoarium divided into distinct internodes, usually connected by flexible joints; attached by horny tubes.

Genus, **CRISIA**—Lamouroux.

Cells in two rows, sub-alternate; aperture entire.

C. patagonica, *D'Orb., Voy. Amer. Merid., Polypiers, p. 7*. Cells 9-19, straight, very distinct; branches arising from second or third cell; joints black.

Lyll Bay. S. America.

C. edwardsiana, *D'Orbigny, l.c., p. 7*; *Busk, Cat. Cyclot. Polyzoa in B.M. (1875.) p. 5, pl. ii., f. 5-8*. Cells 2-3 in each internode, curved forwards; dorsal surface of internode convex, and usually ridged transversely; branches arising from the first or lowest cell in the internode; one or other of the cells in each internode usually armed with a long jointed spine; ovicell lateral, pyriform (*Busk.*)

Lyll Bay. Australia. S. America.

Genus, MARGARETTA—Gray.

Cells disposed in four rows, back to back, each pair facing at right angles to those above and below ; furnished with long bristles.

M. barbata, Lamark, *Anim. sans vert.*, ii., p. 178 ; *M. cercoides*, Gray, *Dieff. N.Z.*, ii., p. 293, nec *Cellaria cercoides*, Ellis. Cells immersed, the mouth only projecting ; surface granulated ; mouth not thickened ; a long bristle on each side of the mouth ; white or pale brown ; in time the bristles fall off, but their position can always be recognized by a cup-shaped depression.

Lyll Bay. Cape of Good Hope.

The only species of the genus.

FAMILY—IDMONEIDÆ.

Zoarium erect, simple or branched ; branches continuous, cylindrical or sub-compressed, free or anastomosing.

Genus, IDMONEA—Lamouroux.

Zoarium ramose, branches dichotomous or irregularly divided ; free or anastomosing ; mouths of cells disposed in parallel, transverse or oblique, usually alternate, rows on each side of the front of the branches, which are angular or carinate in the middle.

I. giebeliana, Stoliczka, *Reise d. Novara, Palæ.*, p. 115, pl. xviii., f. 4-6. Dichotomous, branches depressed, anastomosing ; cells irregular, sometimes single, sometimes in series of three or four, and sometimes in clusters of four to eight ; mouth round, raised ; both surfaces minutely punctate ; branches elliptical.

I. radians, Lamark, *Hist. Anim. sans vert.*, 2nd ed., p. 279 ; Busk, *l.c.*, p. 11, pl. vii., f. 1-4. Zoarium usually procumbent, stipitate, sometimes sub-erect ; branches, dichotomous, radiating more or less regularly in a circular form from the centre, very angular in front ; dorsal surface, perforated ; cells, one to four in each series, the innermost the longest ; aperture (when quite perfect) bi-labiate.

New Zealand and Australia.

Genus, HORNERA—Lamouroux.

Zoarium ramose ; branches dichotomous and free ; cells opening on one side only of the branches, which surface is marked with wavy anastomosing ridges, in the more or less rhomboidal interstices of which the openings of the cells are situated.

H. striata, Milne-Edwards ; Stoliczka, *Reise d. Novara, Palæ.*, p. 107 ; pl. xvii., f. 8-11. Zoarium cespitose ; branches cylindrical, not reticulated ; mouths of cells disposed more or less regularly in longitudinal series, small, orbicula, those towards the lower part of the branches with

a raised, slightly thickened, annular border, which is sometimes produced into an acute angle on one side; a pore above and below the mouth; anterior surface marked with smooth reticulated ridges, forming nearly regular diamond-shaped areolæ; posterior surface sulcate, the sulci usually diverging obliquely from an imaginary median line, and finely punctate; surface between the sulci smooth or sub-granular.

Genus, **RETIHORNERA**—Kinchenpaur.

Zoarium foliaceous, composed of sub-parallel branches connected by transverse tubules, so as to form an expanded frond with quadrangular fenestræ.

R. foliacea, *M'Gillivray; Busk, l.c., p. 19, pl. xiii., f. 1, 2; R. squamosa, Hutton, C.M.M., p. 101.* Foliaceous, waved, infundibuliform, reticulated; mouths of the cells sub-orbicula, with a raised and scarcely thickened margin; interspaces finely granulated and with slightly raised, scaly, longitudinal lines; back finely granulated, with slightly raised rather scaly lines; fenestræ small; branches compressed; white or pale brown.

Chatham Islands. Australia.

R. gouldiana, *Busk, Crag Polyzoa, p. 95.* Foliaceous, infundibuliform, waved, reticulated; mouths of the cells sub-orbicular, with a slightly raised and thickened margin; interspaces coarsely granulated; back finely granulated and lightly striated; fenestræ small; branches cylindrical; white.

Chatham Islands. Australia.

Perhaps identical with the last species, but the cells are nearer together.

Genus, **PUSTULIPORA**—Blainville.

Zoarium ramose, branches cylindrical, clavate or terete; composed of tubular cells, which open on all sides of the branch.

P. parasitica, *Busk, loc. cit., p. 21. p. xvii., f. 1-2.* Zoarium about a quarter inch high, usually formed of one to three branches, short and truncate; cells, usually deeply immersed, and very slightly prominent, except in very young specimens; colour, brown, with white spots.

Bass Straits.

Always parasitic upon a species of *Catenicella*.

P. haastiana, *Stoliczka, Reise d. Novara, Palæ., p. 102, pl. xvii., f. 4-5.* Branches erect, close, asatomosing, in thick masses with the ends truncated to the same spherical surface; sub-cylindrical; cells distant, marked with longitudinal lines; mouth slightly prominent, recurved, sub-orbicula, margin thickened; white.

Common.

P. purpurascens, *Hutton, Trans. N.Z. Inst.*, ix., p. 361. Irregularly branched; branches spreading, slender; cells numerous, granular; mouths projecting, recurved, slightly contracted; purplish.

P. porcellanica, *Hutton, C.M.M.*, p. 102. Branches slender, spreading, smooth; cells rather distant, wholly immersed, orifice sub-orbicular, neither raised or margined; branches cylindrical, sometimes anastomosing.

In fresh specimens the surface is coarsely pitted and the orifice slightly raised.

Lyll Bay. Australia.

Genus, CINCTIPORA—Hutton.

Zoarium erect, ramose; branches dichotomous or irregularly divided, free, cylindrical; cells immersed; mouths attached to the stem and to one another, forming circles round it; cell walls thin, punctured internally.

New Zealand only.

C. elegans, *Hutton, C.M.M.*, p. 103. Cells arranged quincuncially, minutely granular, the septum between two cells prolonged upwards into a narrow rib running up the centre of the tube in the row above; white.

FAMILY—TUBULIPORIDÆ.

Zoarium depressed, or massive, adnate, orbiculated, or lobed.

Genus, TUBULIPORA—Lamark.

Zoarium adnate or decumbent; entire or divided into lobes or branches; cells partially free and ascending, radiating from an eccentric point.

T. glomerata, *Hutton, C.M.M.*, p. 103. Encrusting, irregular, wart-shaped, thick; tubes crowded, irregularly placed.

Perhaps identical with *T. fungia* Couch., from Europe.

Genus, ALECTO—Lamouroux.

Zoarium adnate, creeping, irregularly branched; cells in single series or disposed in more or less irregular transverse rows.

A. racemosa, *Hutton, C.M.M.*, p. 103. Large, branched; cells in clusters of from two to ten together, irregularly placed.

A. disposita, *Hutton, C.M.M.*, p. 103. Slightly branched, irregular; cells prominent, arranged in parallel rows; margin defined.

FAMILY—DISCOPELLIDÆ.

Zoarium discoid, sometimes confluent, adnate or stipitate. Cells distinct or closely connate, intermediate surface cancellated or porous.

Genus, DISCOPELLA—Gray.

Zoarium sessile or adnate; discoid, centre usually elevated or subconical, rarely depressed; cells, horizontal, usually disposed in lines radiating from the centre, sometimes irregular.

D. ciliata, *Busk, l.c., p. 31, pl. xxx., f. 6.* Discoid; cells uniserial, 4-6 in each row; diameter of mouth less than that of the interstitial cancelli; peristome, much produced on one side, nearly vertical, divided into several (2-4) long, acute, slender spines.

Cape of Good Hope.

D. novæ-zealandiæ, *Busk, loc. cit., p. 32, pl. xxx., f. 2.* Discoid, cupped; cells, tubular, projecting, connate in uni-serial radii; peristome bifid; central area (unoccupied by cells) depressed; cancelli, large, becoming smaller towards the periphery.

On *Catenicella*. (Dr. Lyall.) S. Australia.

Genus, DEFRANCEIA—D'Orbigny*.

Zoarium stipitate; capitulum cupped; cells disposed in elevated rays extending to the margin of the cup; central portion of cup and interserial spaces cancellate; outer surface of capitulum and stem pitted or smooth.

D. dentata, *Hutton; T. stellata, C.M.M., p. 103, not of Busk.* Capitulum broadly expanded, lobed, and curled; cells in elevated branching rows, which form a denticulated margin to the lobes; mouths slender, erect, rather closer towards the margin, but ceasing altogether before reaching it.

Stewart Island.

* The name of this genus is too much like *Defranchia* (Millet.)

APPENDIX.

A.

REMARKS BY DR. V. MARTENS ON SOME SHELLS SENT TO THE ROYAL
ZOOLOGICAL MUSEUM, BERLIN*.

Euthria lineolata, from the Auckland Islands, is the same that I have named *E. lineata*, var. *pertinax*, on account of the transverse ribs persisting into the penultimate whorl.

Risella, from Auckland, is *R. nana*, Lamark.

Scalaria lineolata, Kiener. Not *lineolata*, but perhaps it may be *S. tenuilirata*, Sow. ; Reeve, Conch. Ic., f. 118.

Diloma gaimardi, Phil. I suppose that this is *Trochus sulcatus*, Wood, ind. test. supp., f. 40, and perhaps also *Tr. lugubris*, Gmelin ; Chenu, Conch. cab., vol. v., f. 1571, but I doubt very much its being *Tr. cingulatus*, Quoy and Gaimard, which is the same as *gaimardi*, Philippi.

Trochus pupillus, Gould, is very interesting to me ; it appears to prove that Gould was right in giving New Zealand as the locality for his species, and that the shells from N.W. America, taken for it by several authors, is another species.

Patella magellanica, from Campbell Island. I do not think that this shell can be united with *magellanica* ; it is *P. luctuosa*, Gould.

Nacella cantharus, from Dunedin. Not that species, but probably some variety of *radians*, Gml.

Lima squamosa, Lam., from Foveaux Straits. The exotic species allied to the European *L. squamosa*, are in much confusion, and I dare not pronounce a definite opinion concerning them ; but I cannot think that the New Zealand shell is *squamosa*, and I would name it *sp. affinis*, *squamosæ*, until further elucidation, which will necessitate a thorough examination of the Red Sea and East Indian specimens.

* These remarks were received too late to incorporate with the text.—F. W. H.

Mytilus dunkeri, from Auckland and Campbell Islands. Probably not *dunkeri*, but, in my opinion, *chorus* Molina, which comes from Chili, and therefore another Austral. circumpolar species.

Modiola securis, Lam (?) Dunedin, brackish water. May be a variety of *Mytilus ater*, Zelebor; the difference in the shape is not great. *Modiola securis*, is quite a doubtful species, which cannot be made out but by the examination of the original specimen.

B.

Since the manuscript of this catalogue was sent to press, the Otago Museum has received from Mr. J. Brazier of Sydney, and from Mr. W. Legrand of Hobart Town, valuable collections of Australian and Tasmanian marine shells; and from Captain Beddome and Mr. Petterd equally valuable collections of land and freshwater shells.

I have compared Australian and New Zealand specimens of the following, and can find no specific difference between them: *Polytropha succincta*, *Polytropha striata*, *Tritonium australis*, *Tritonium spengleri*, *Tritonium olearium*, *Ranella leucostoma*, *Ranella vexillum*, *Cassis pyrum*, *Cassis achatina*, *Littorina cerulescens*, *Nerita atrata*, *Bankivia varians*, *Lepidopleurus longicymbus*, *Bullina lineata*, *Lucina divaricata* (with Tasmanian specimens,) and *Modiola australis*.

Patula coma. This species is quite distinct from *H. diemenensis*.

Amphibola quoyana. This is certainly not an *Amphibola*. It is properly called *Ampullarina* by Australian Conchologists.

Gadinia nivea. This may be the same as *G. conica*, Angas (P.Z.S. 1867, p. 115,) for specimens received from Mr. Brazier shew that it is not always so conical as represented by Mr. Angas.

Trophon paiva. In New Zealand specimens the spiral ribs are further apart.

Voluta kaupii, Dunker. Mal. Bl., x., 1863, p. 145; Novitates, t. 22, f. 1-2.

Hab. New Zealand (?)

I have seen no description of this shell.

Erato lactea. This may be the same as *Marginella muscaria*, but it is paler in colour.

Littorina luctuosa. Mr. Tenison-Woods considers that this species is identical with *L. cincta*.

Patella magellanica. I have compared this with specimens in the Otago Museum from Kerguelen Island: they are very different. Dr. Kidder considers that the Kerguelen Island species is *P. magellanica*. If he is right, Reeve's figure and description must be very inaccurate.

Anatina tasmanica. New Zealand specimens are higher in proportion to the length, than those from Tasmania.

Tellina deltoidalis. In Australian specimens there is in the left valve a posterior lateral tooth, which is absent in New Zealand specimens. Also in Australian specimens the anterior cardinal tooth of the left valve is not much broader than the posterior, and in the right valve the anterior cardinal is obsolete; while in New Zealand specimens the anterior cardinal of the left valve is much broader than the posterior, and the anterior of the right valve is distinct, although small. In Australian specimens also the posterior dorsal margin is not so rounded as in New Zealand specimens, and the anterior dorsal margin is flat, instead of being concave. These differences are quite enough to separate the two species.

Artemis subrosca. Specimens have been sent from Tasmania by Mr. Legrand. After careful comparison I can see no difference. In *A. japonica*, according to Reeve, the area of the ligament is more widely excavated, and the striae incline to become lamellated at the sides.

Callista multistriata. Our species differs from that of Tasmania in being proportionately longer, and in the shell being much thinner. Specimens of *C. disrupta*, from Queensland and from N.S. Wales, are in the Museum. It is quite distinct.

Mytilicardia excavata. A comparison with a specimen from Port Jackson shews that New Zealand specimens are not so deeply sinuated below; the anterior ribs are more numerous, and the posterior ribs never seem to have the large scales found in Australian specimens; but I have only seen rubbed shells. It may be the same as *M. tasmanica* (Tenison-Woods,) published in the Proc. Royal Society of Tasmania, 1875, p. 161.

Barbatia pusilla. This appears to be distinct from *B. donaciformis*, as pointed out by Reeve. Dr. v. Martens is, I think, right in regarding our species as *B. donaciformis*. I have compared a valve with a specimen of *B. pusilla*, from Port Jackson.

Pecten australis. The ribbing on New Zealand specimens is finer than on those from Australia; but the difference is hardly sufficient to constitute another species.

F. W. H.
