MOLLUSCA.—*By Edgar A. Smith, F.Z.S., Senior Assistant in the Zoological Department, British Museum.*

(Plate IX.)

Of the thirty-three species treated of in the following paper, and representing twenty-five genera, twenty-five were obtained by the Rev. A. E. Eaton, the remaining seven having been collected during the Antarctic Expedition under the command of Sir James Ross. Of this number, 18 are new to science, and nearly all are mentioned for the first time as inhabiting this locality.

Some of the species are of very great interest, especially the new genus *Neobuccinum*, the *Struthiolaria*, and the new genus *Eatoniella* among the *Gastropods*, and of the bivalves the *Saxicava*, *Lissarca*, and the magnificent *Solenella*, by far the largest known species of that genus.

The Malacological fauna resembles generally that of the Falkland Islands and South Patagonia. More than half of the genera and seven or eight of the species found at Kerguelen Island are known to occur at those localities, and further research will probably discover a still greater number of genera and species to be common to these two, longitudinally, so widely separated localities. With respect to their latitudes the difference is unimportant, since they both range between 49° and 54° S. lat. As the Cape of Good Hope, Tasmania, and South West Australia, are the nearest points of mainland, it might be expected that some resemblance to the fauna of those countries might be observable. However, it is not so, as far as our present knowledge extends. Many of the shells from Kerguelen Island have the generally unattractive appearance as regards coloration which so frequently obtains in species found in cold climates. Indeed, some of them seem to be southern representatives of boreal types. The *Neobuccinum*, *Trophon*, *Saxicava*, *Kellia*, *Yoldia*, *Radula*, and *Doris*, are remarkable instances of similarity to northern forms.

The following table shows the great affinity which exists in the fauna of South Patagonia and Kerguelen Island. Only those species are quoted from Patagonia which are identical with or nearly allied to Kerguelen forms, and a blank signifies that the genus has not yet been recorded from there.

Genera.	Patagonian Species.	Kerguelen Species.
Neobuccinum		N. eatoni, *Sm.*
Trophon	T. philippianus, *Dunker*	T. albolabratus, *Sm.*
Struthiolaria		S. mirabilis, *Sm.*
Purpura		P. striata, *Martyn*, (American Exp.)
Admete (—?)		A. (— ?) limnææformis, *Sm.*
Littorina		L. setosa, *Sm.*
Hydrobia		H. pumilio, *Sm.*
„		H. caliginosa, *Gould.*
Eatoniella		E. kerguelenensis, *Sm.*
„		E. caliginosa, *Sm.*
„		E. subrufescens, *Sm.*
Skenea		S. subcanaliculata, *Sm.*
Rissoa		R. kergueleni, *Sm.*
Scissurella		S. supraplicata, *Sm.*
Trochus (Photinula)	T. (P.) expansus, *Sowb.*	T. (P.) expansus, *Sowb.*
Patella	P. ænea, *Martyn*	P. kerguelenensis, *Sm.*
„	P. fuegiensis, *Reeve*	P. fuegiensis, *Rve.*
„	P. mytilina, *Gmelin*	P. mytilina, *Gmel.*
Siphonaria	S. magellanica, *Philippi*	S. redimiculum, *Rve.*
Hemiarthrum		H. setulosum, *Cpr.* (Amer. Exp.)
Doris		D. tuberculata, *Cuv.*
Helix		H. hookeri, *Reeve.*
Saxicava	S. antarctica, *Philippi*	S. bisulcata, *Sm.*
Kellia	K. miliaris, *Philippi*	K. consanguinea, *Sm.*
Lepton		L. parasiticum, *Dall.*
Arca (Lissarca)		S. rubro-fusca, *Sm.*
Yoldia	Y. woodwardi, *Hanley*	Y. subæquilateralis, *Sm.*
Solenella	S. magellanica, *Smith*	S. gigantea, *Sm.*
Mytilus	M. magellanicus, *Chemnitz*	M. magellanicus, *Chem.*
„	M. edulis, *L.*	M. edulis, *L.*
Modiolarca	M. trapezina, *Lamarck*	M. trapezina, *Lamarck.*
„	M. exilis, *H. and A. Adams*	M. exilis, *H. and A. Ad.*
„	M. pusilla, *Gould*	M. minuta, *Dall.*
„	M. pusilla, *Gould*	M. pusilla, *Gld.*
Radula	R. pygmæa, *Philippi*	R. pygmæa, *Phil.*
Waldheimia	W. dilatata, *Lamarck*	W. dilatata, *Lamarck.*

CEPHALOPODA.

[In the Bull. U. S. Nat. Mus. 1876, No. iii., p. 42, Dr. Kidder records finding a species of Octopus too much mutilated for identification.]

GASTROPODA.

Neobuccinum, *gen. nov.*

Testa bucciniformis; canalis latus, brevis; *operculum* ovatiusculum, *uni-spirale* (*nucleo vix terminali*), ad marginem prope nucleum leviter sinuatum, concentrice lineis incrementi curvatis striatum.

This genus is allied to *Buccinopsis*, but differs from it somewhat in the dentition of the animal, and with regard to the operculum.

In *Buccinopsis* the nucleus of the operculum is terminal, but in the present genus it is situated on the inner side about one-tenth of the entire length from the

extremity, and just at this point the outline is interrupted by a slight sinus. It consists of one whorl, which gradually increases by concentric layers well defined by the lines of growth, and the inferior surface is somewhat thickened along the outer edge, that is, that opposite the nucleus.

Neobuccinum eatoni.

(Plate IX., fig. 1.)

Buccinopsis Eatoni, Smith, Annals and Mag. Nat. Hist. July 1, 1875, xvi., p. 68.

Testa elongato-ovata, turrita, tenuis, lævis, pallide livido-fuscescens, haud nitens; anfractus 6? (apice fracto), reliqui 4 perconvexi, lente crescentes, læves, lineis incrementi flexuosis insculpti, sutura profunda, fere canaliculata sejuncti; apertura ovata, longitudinis totius circiter $\frac{4}{9}$ æquans; columella lævis, polita, in medio leviter arcuata, basin versus obliqua; canalis latissimus, perbrevis, vix recurvus; labrum simplex, tenue.

Operculum ovatum, concentrice plicato-striatum, nucleo laterali, vix terminali.

Long. 56 mill., diam. 27; apertura long. 27 mill., diam. 14.

Animal (in spirit) uniformly buff colour; foot broad in front, and somewhat truncated, narrowed posteriorly; head of moderate size, furnished with two rather short tentacles not adjacent at their base; eyes situated on prominences on the outer side of the tentacles towards their bases; proboscis very long; siphonal expansion of the mantle thick, of medium length.

Lingual ribbon very long; teeth in three series, central (rachidian) tooth tricuspidate, prongs straight, nearly equal in size, the central one a little the longest; lateral teeth (uncini) tricuspidate also, prongs hooked, outer one the largest, the inner rather smaller, the median very much smaller still and close to the latter.

Hab.—Obtained in shrimp pots and by dredging in 3–7 fathoms at Royal Sound and Swain's Bay.

This remarkable species is chiefly characterized by its smooth convex whorls which are destitute of all sculpture and ornamentation, with the exception of the lines of growth. The suture is particularly deep, almost channelled. Around the short cauda of the body-whorl, from a little below the middle of the columella, runs a carination (as in certain species of *Bullia*), which joins the basal channel near the labrum.

Since publishing the description of the shell of this species, I have examined the animal, and find that its dentition, which bears a close resemblance to that of *Neptunea dilatata* (Troschel, Gebiss der Schnecken, ii., 1868), does not agree exactly with that of *Buccinopsis*. The tongue of the latter is described by Alder as having "a single plain and slightly curved tooth on each side, and a very thin non-denticulated plate in the centre."

This difference in the odontophore, and the dissimilarity of the opercula, are, I think, sufficient to entitle the present species to generic rank.

Trophon albolabratus.

(Plate IX., fig. 2.)

Trophon albolabratus, Smith, Annals & Mag. Nat. Hist. 1875, xvi., p. 68.

Testa ovato-fusiformis, turrita, alba; anfractus 6, primi duo (nucleus) læves, cæteri convexi, liris spiralibus (in anfr. superioribus 4–5, in ultimo circiter 13) æqualibus subæquidistantibus cincti, et lamellis foliaceis numerosis subconfertis et prominentibus instructi; apertura superne ovalis, infra in canalem prolongata, intus saturate fusca, longitudinis testæ circiter $\frac{3}{5}$ æquans; labrum intus sub-late albo marginatum, leviter expansum; columella in medio parum arcuata, basi obliqua, callo inferne crassiusculo, superne tenui labroque juncto induta, cæruleo-alba, margine interno fusca; regio umbilici leviter rimata; canalis angustus, obliquus, paululum recurvus, modice elongatus.

Operculum flavo-corneum.

Long. 40 mill., diam. 18; apertura long. 24 mill., diam. 11.

Animal (in spirit) uniformly pale buff; foot rather truncate in front and somewhat acuminated posteriorly; head small; tentacles adjacent at their base, not very long (contracted?), much thicker below than above the eyes, which are situated on prominences towards their base.

Teeth of lingual ribbon in three series; laterals consisting of a single spine-like tooth longer than the others; rachidian teeth in three rows, small, spine-like, the two outer rather smaller than the central one.

Hab.—On rocks just below low-tide mark in Swain's Bay and Royal Sound; frequent.

The nearest ally of this species appears to be *T. philippianus* of Dunker, which is found in the Straits of Magellan, at Cape Horn, and the Falkland Islands. From this species it differs in having the whorls rounded above, and not flattened or excavated, the penultimate is larger and more elevated, the body-whorl is more inflated below the middle and not produced into such an elongated cauda, and the canal is shorter and the aperture rather larger, the longitudinal lamellæ are more prominent and not nearly so numerous.

Struthiolaria mirabilis.

(Plate IX., fig. 3.)

Struthiolaria mirabilis, Smith, Annals & Mag. Nat. Hist., July 1st, 1875, p. 67.

Struthiolaria costulata, Martens Bericht Gesellsch. Naturforsch. Freunde, Berlin (July 24th, 1875, teste Martens in litt.), p. 66.

Testa ovata, tenuis, imperforata, leviter turrita, alba, epidermide tenuissima fugaci olivaceo-alba amicta; anfractus $6\frac{1}{2}$, convexiusculi, superne anguste planulati, lente accrescentes, longitudinaliter oblique arcuatimque crebre plicati (plicis inferne

ad suturam vix attingentibus); liris spiralibus prominentibus supra plicas undulatis (in anfr. superioribus 7–8, in ultimo circiter 22, illis infra medium simplicibus) succincti; apertura longitudinis totius circiter $\frac{4}{7}$ æquans; columella arcuata.

Operculum corneum unguiculatum, subtus costis duabus a nucleo unguiformi divergentibus munitum, superne in medio longitudinaliter unisulcatum, concentrice striatum.

Long. 42 mill., diam. 22.

Proboscis conical, rather compressed and annulated; *tentacles* two, short, tapering, situated at the base of the proboscis; *eyes* small, placed on very slight prominences very near the base of the tentacles; *foot* small, somewhat truncate in front and acuminate posteriorly; operculigerous lobe nearly terminal, with the operculum placed transversely, the nucleus to the left when viewing the lobe, foot downwards. Teeth — ? The radula I believe has been described by Shacke from specimens obtained by the German expedition.

Hab.—Dredged at a depth of 3–7 fathoms at Swain's Bay.

But a single specimen of this very remarkable shell was obtained by Mr. Eaton. This unfortunately has the labrum so much broken away, that it is impossible to describe the form of the aperture and the nature of the basal channel. However, the animal and operculum agree in all respects externally with *Struthiolaria;* and although the shell has more the general aspect of *Buccinum*, there can be no doubt of its true location. The species which compose this genus are strong thick shells; this, on the contrary, is particularly fragile, and clothed with a very thin deciduous epidermis.

The name given to this species by Von Martens was first announced at a meeting of the "Gesellschaft naturforschender Freunde zu Berlin" on the 15th of June 1875. Dr. Martens informs me in a letter dated December 22nd, 1876, that the report of this meeting, in which a brief description is given of the species (p. 66), was published on July 24th, 1875, which was unusually late, as generally the report ought to be issued before the next meeting, which was July the 20th. At any rate the name *mirabilis* would have priority as it was published on July 1st, and the manuscript was in the printer's hands almost a month before that date.

[**Purpura striata**, *Martyn.*

Dall, Bull. U.S. Nat. Mus. iii., p. 43.

Buccinum striatum, Martyn.

Two specimens probably of this species were obtained by Dr. Kidder.

Hab.—Kerguelen Island (Kidder); New Zealand (Martyn).]

Admete (— ?) limnææformis, sp. nov.

(Plate IX., fig. 4.)

Testa tenuissima, subdiaphana, lævis, parum nitens, vitreo-alba; anfractus 3, primi duo parvi, convexiusculi, ultimus amplissimus, convexus; sutura simplex, aliquanto profunda; apertura ovata, superne paululum acuminata, longitudine testæ totius circiter $\frac{3}{5}$ æquans; columella leviter obliqua, vix arcuata, inferne oblique et subabrupte truncata, superne callo tenuissimo, super anfractum expanso, labro juncta; labrum simplex, tenue.

Long. $2\frac{1}{2}$ mill. Diam. $1\frac{1}{2}$.

Hab.—On Sea-weed and Polyzoa in Swain's Bay at a depth of 4–5 fathoms.

This species has the appearance of a minute *Limnæa* with the columella truncated a little below the middle. No sculpture is visible under a simple lens, but by the aid of the microscope very fine lines of increment are discernible. Although this is a very curious form for an *Admete*, I am not acquainted with any other genus which it more resembles. The character of the truncation of the columella is similar, and the absence of an operculum is also congeneric.

From the fewness of the whorls and the thinness of the shell it may be conjectured to be but the young of some larger species. This may be the case, but at present I am unable to identify it as the fry of any genus with which I am acquainted.

Littorina setosa.

(Plate IX., fig. 6.)

Littorina setosa, Smith, Annals & Mag. Nat. Hist. July 1875, xvi., p. 69.

Testa imperforata, ovato-turrita, tenuis, pallide rosea, circa medium anfractuum linea spirali rufa cincta, epidermide fugaci villosa vel setosa olivacea induta; anfractus 6, convexi, superne aliquanto tabulati, sutura profundiuscula discreti, ubique spiraliter et oblique minute punctato-striati; apertura subquadrato-circularis, longitudinis totius $\frac{1}{2}$ æquans; columella perparum arcuata, ad basin leviter patula; labrum simplex. Operculum paucispirale, ovatum, superne acuminatum, tenuissimum, flavocorneum.

Long. 14 mill., diam. $8\frac{1}{2}$; apertura long. 7 mill., diam. 5.

Animal (in spirit) small, pinkish yellow, the tentacles and top of the proboscis stained with purplish-black; tentacles short and thick; eyes at the tips of slender peduncles which arise from the outer bases of the tentacles; foot oblong, rounded in front and rather more so behind.

Hab.—Swain's Bay in 3–4 fathoms, at the extremity of the promontory farthest from Royal Sound and nearest to Mt. Ross, two or three miles within the entrance of the bay.

The epidermis of the shell of this species is very deciduous and is minutely hairy, the hairs being disposed in oblique series corresponding with the lines of growth.

Hydrobia caliginosa.

(Plate IX., fig. 8.)

Littorina caliginosa, Gould, Wilkes' Explor. Exped. 1852, p. 198, Atlas fig. 240.

Testa ovato-conica, angustissime vel vix rimata, tenuis, fusca, labrum versus pallidior; anfractus 5 convexi, læves, striis incrementi obliquis tenuiter insculpti, sutura distincta, leviter obliqua, sejuncti; anfr. ultimus amplus; apertura ovatiuscula, longitudinis totius circiter $\frac{5}{7}$ æquans; labrum tenue ad basin parum patulum; columella obliqua, minime (nisi prope basin) arcuata, incrassata, calloque tenui labro juncta; rima angustissima, interdum columella omnino obtecta. Long. $4\frac{1}{2}$ mill. Diam. $2\frac{1}{2}$.

Operculum corneum, tenuissimum, flavescens, paucispirale, nucleo paululum a margine inferiori remoto, subtus marginibus anfractuum externis carinatis.

Hab.—Kerguelen's Island. Terra del Fuego (*Gould*).

The brown colour of this species is produced probably by the dried remains of the animal within the shell, and could these be removed the whole of the structure would have the same horny appearance as the labrum presents. Nearly all specimens have the two or three uppermost whorls more or less eroded. The aperture oblique, somewhat ovate in form, being rather broader inferiorly than above, and faintly patulate on the basal margin. The columella is slightly thickened and reflexed, at times wholly concealing the extremely narrow umbilical fissure. The operculum is very thin, consists of about two and a half very rapidly increasing volutions, is finely striated by the incremental lines, and the nucleus is situated at about one-third the entire length from the lower end and on the underside, the outer margin of the whorls next the suture is raised or keeled.

Hydrobia pumilio, *sp. nov.*

(Plate IX., fig. 7.)

Testa depresso-globosa, minuta, anguste rimata, purpureo-fusca; anfractus 2, rapidissime accrescentes, lineis incrementi tenuissime striati, primus convexiusculus, vix super ultimum elatus, ultimus maximus, perconvexus; sutura simplex, distincta; apertura subcircularis, amplissima, longitudine tota testæ paulo minor; peristoma vix continuum, sed marginibus callo tenuissimo conjunctis, pallidum, rimam versus leviter incrassatum; operculum corneum flavescens, unispirale, lente crescens, nucleo fere centrale. Diam. max. 1 mill. Diam. min. $\frac{3}{4}$; axis 1.

Hab.—Swain's Bay.

Although this species is so minute, the shells do not appear to be very young. In one example the last whorl slightly descends near the peristome, which cannot

strictly be called continuous, the two extremities being united by a very thin callous deposit on the body whorl. The nuclear portion of the single whorl which constitutes the operculum appears to be convex.

This species differs from normal *Hydrobiæ*, whose spire is generally rather elevated, in having the apex but very slightly exserted above the last whorl, and consequently the contour of the spire is unusually convex.

Eatoniella, *Dall.*

Eatonia, Smith, Ann. and Mag. Nat. Hist. 1875, xvi. p. 70 (name preoccupied).
Eatoniella, Dall, Bulletin U. S. Nat. Mus. 1876, iii. p. 42.

Testa formæ rissoideæ; apertura subcircularis; peristoma simplex, continuum, margine labrali haud incrassatum. Operculum ovatum, pauci- vel unispirale, nucleo subterminali a latere columellari paululum remoto, subtus ossiculo prominenti a nucleo exsurgente et marginem columellarem versus directo munita.

There are two genera which have affinity to the present one—*Jeffreysia* and *Rissoina*. With the former it agrees in the form and character of the aperture, but differs in having the nucleus of the operculum not lateral, but situated within the margin and towards the lower end. It agrees in this respect with *Rissoina* (see Adams, "Genera of Recent Mollusca," vol. iii. pl. 35. f. 1, *a* & *b*), but is distinguished from that genus by the absence of the slight basal channel of the aperture and the lack of any incrassation to the labrum.

The operculum of *Jeffreysia* is composed of concentric layers (as in *Purpura*), commencing from a nucleus situated on the margin of the inner or columellar side; and the ossicle or rib proceeds "from the nucleus in the direction of the *outer* margin" (Jeffreys, "Brit. Conch." iv. p. 58; in the figure, *l. c.* pl. 1. f. 3, it is apparently the reverse).

In *Eatoniella* the operculum is spiral, consisting of one or more whorls, the nucleus is situated within the margin and about one fourth the entire length from the lower end, and the ossicle is directed towards the *inner* margin.

The name originally given by me to this genus having been preoccupied, has been modified to that in use, by Mr. Dall.

Eatoniella kerguelenensis.

(Plate IX., fig. 10.)

Eatonia kerguelenensis, Smith, Annals and Mag. Nat. Hist. 1875, xvi. July, p. 70; *Eatoniella kerguelenensis*, Dall, Bulletin U. S. Nat. Mus. No. iii. p. 42.

Testa ovato-conica, tenuis, olivaceo-nigrescens, labrum versus pallidior semipellucida, vix rimata; anfractus 6, convexi, læves, parum nitidi, lineis incrementi striati, sutura simplici sejuncti; apertura fere circularis, longitudinis totius $\frac{5}{12}$ æquans; peristoma simplex, continuum, ad regionem umbilicalem leviter incrassatum et vix reflexum. Long. 3 mill., diam. $1\frac{2}{3}$.

Operculum ovatum, intus concavum, nucleo posteriore non tamen terminali, crassiusculum, super marginem externum lira incrassatum, unispirale, supra incrementi lineis valde striatum, infra ossiculo elongato a nucleo exsurgente munitum.

Hab.—On a sponge (*Tethya antarctica*), Royal Sound, in 40 fathoms.

This species was found in company with *Rissoa Kergueleni*. It is of a very different form, the spire being conical, the last whorl shorter and a trifle broader; and it also differs in colour. In general aspect it very much resembles several species of *Hydrobia;* but the operculum at once distinguishes it.

Eatoniella caliginosa.

(Plate IX., fig. 9.)

Eatonia caliginosa, Smith, Annals and Mag. N. H. 1875, xvi. July, p. 71.

Eatoniella caliginosa, Dall, Bulletin U. S. Nat. Mus., No. iii. 43.

Testa ovata, modice tenuis, nigra, vix rimata; anfractus $4\frac{1}{2}$, convexi, læves, vix nitidi, sutura simplici discreti, lineis incrementi obsolete striati: apertura fere circularis, superne paululum acuminata, longitudinis totius $\frac{1}{2}$ fere æquans; peristoma continuum, levissime incrassatum, ad regionem umbilicalem albidum, aliquanto reflexum, et basin versus parum effusum. Long. 2 mill., diam. 1.

Operculum ei *E. kerguelenensis* fere simile.

Hab.—Swain's Bay. Found with the preceding species.

This minute shell, with a simple style of sculpture, is of a very black olive-colour, with a nearly circular aperture, the peritreme of which is black outwardly, and whitish in the columellar region.

Eatoniella subrufescens.

(Plate IX., fig. 11.)

Eatonia subrufescens, Smith, Annals and Mag. N. H. 1875, xvi. July, p. 71.

Testa ovata, leviter conica, tenuis, semidiaphana, vix rimata, subrufescens, labrum versus albida; anfractus $4\frac{1}{2}$, lente accrescentes, convexi, sutura subprofunda divisi, læves nisi striis incrementi tenuiter sculpti; apertura subcircularis, longitudinis testæ $\frac{1}{3}$ paulo superans; peristoma continuum, ad marginem columellarem leviter incrassatum et reflexum, rimam umbilicalem indistinctam effingens.

Operculum ei *E. kerguelenensis* subsimile, ossiculo tamen fortissimo munitum.

Long. $1\frac{1}{2}$ mill., diam. $\frac{2}{3}$.

Hab.—Royal Sound, on a sponge (*Tethya*) at a depth of 7 fathoms.

The reddish colour of the upper whorls is attributable to the dried remains of the inhabitant.

Skenea subcanaliculata.

(Plate IX., fig. 15.)

Skenea subcanaliculata, Smith, Annals and Mag. Nat. Hist. 1875, xvi., p. 71.

Testa minuta, orbiculata, depressa, tenuis, subdiaphana, albida, late profundeque

umbilicata; spira minime elevata; anfractus $3\frac{1}{2}$, sublente accrescentes, perconvexi, ad suturam valde incurvati, fere canaliculati, læves nisi striis incrementi levissime insculpti; apertura subcircularis, leviter obliqua; peristoma continuum, simplex.

Operculum subcirculare, paucispirale, nucleo subcentrali.

Diam. max. $1\frac{1}{3}$ mill., diam. min. 1, alt. $\frac{1}{2}$.

Hab.—Kerguelen Island. Royal Sound, on *Tethya* with *Eatoniella*, in 7 faths.

Some specimens are of a faint reddish colour in the upper whorls; but this may be from the dried animal within. The whorls are very much incurved at the suture, so much so that almost a channel is produced.

Rissoa kergueleni.

(Plate IX., fig. 12.)

Rissoa kergueleni, Smith, Annals and Mag. Nat. Hist. xvi. 1875, p. 69.

Testa ovata, semipellucida, vitrea vel lactea, ad apicem pallide rubescens, tenuis, imperforata; anfractus 5, convexi, politi, sutura angustissime marginata divisi; apex obtusus; apertura ovata, superne acuminata, longitudinis totius $\frac{5}{12}$ adæquans; peristoma continuum, leviter incrassatum et expansum.

Operculum paucispirale, corneum, simplex.

Long. 3 mill., diam. $1\frac{1}{2}$.

Hab.—Swain's Bay, on a sponge (*Tethya*) at 7 fathoms depth.

This pretty species is of a glassy texture, sometimes streaked longitudinally with opaque white. The whorls are divided by a narrowly margined suture, below which there is a faint depression; the first two form an obtuse apex, and the penultimate is large.

Scissurella supraplicata.

(Plate IX., fig. 5, 5a.)

Scissurella supraplicata, Smith, Annals and Mag. N. H. 1875, xvi., p. 72.

Testa heliciformis, spira brevi, anguste perforata, tenuis, semipellucida, alba, epidermide caduca crassiuscula pallide olivacea amicta; anfractus 3, primus—— ? (abruptus), secundus convexiusculus, superne aliquanto planulatus et radiatim arcuate plicatus, ultimus magnus, paululum supra medium carina duplici tenui (cum scissura continua) succinctus, supra carinam radiatim arcuate plicatus, infra eam lineis incrementi striatus; apertura maxima, irregulariter circularis, ad marginem basalem levissime expansa; peristoma continuum, scissura profunda angusta.

Operculum corneum, —— ?

Diam. max. $1\frac{1}{3}$ mill., diam. min. 1, alt. 1.

Hab.—Swain's Bay.

The deep narrow slit in the lip is situated between the two threadlike keels, as is the case in several other species. The operculum is too far within the aperture to allow of examination.

Trochus (Photinula) expansus.

Margarita expansa, Sowerby, Conchol. Illus. f. 16 and 17.

Photina expansa, H. and A. Adams, Proc. Zool. Soc. 1851, p. 191.

Photinula expansa, H. and A. Adams, Genera Rec. Shells, i., p. 428.

Trochus (*Margarita*) *hillii*, Forbes, Proc. Zool. Soc. 1850, p. 272, plate 11, fig. 10.

The shells of this species are generally of a pale pinkish colour, varying to reddish brown, at times banded with faint reddish lines, and some specimens which have the dried remains of the animal in them are stained with a greenish tint. The whorls are five in number, convex, and the last is slightly depressed close to the suture. They are devoid of sculpture, excepting the fine striations of growth. The aperture is large, oblique, and roundly subquadrate; the columella is very oblique, straightish in the middle, and in the umbilical region it is excavated rather deeply. The interior of the aperture is beautifully iridescent.

Animal with the pedal disk somewhat rounded in front, narrowed and acuminated posteriorly; head provided with two subulate (apparently not very elongate) tentacles; eyes placed at the tips of two short peduncles on the outside of the tentacles, between which, on the frontal region, are two compressed lobes; the buccal regions produced into largish compressed lobes; the edge of the mantle, on the right side, furnished with four distant elongate cirri, and close to the neck with a large flattened lobe; on the left side are four corresponding cirri, but, in place of the lobe, three small tentacular filaments. Odontophore six mill. in length; dentition similar in arrangement to that of *Trochus* (*Gibbula*) *cineraria*, as figured in Gray's Guide to Mollusca, 1857, p. 152, consisting of 11 rachidian teeth, the central one of which is largest, while the others on either side gradually diminish in size as they approach it, and very numerous slender contiguous lateral teeth (uncini).

Hab.—Royal Sound and Swain's Bay, common; dredged in 3–5 faths.

The above description shows that the animal of *Photinula* is truly Trochoid. The circumstance of the lappet on the right side towards the neck being replaced on the left by three small filaments in this species is only a specific character, for in *Phot. cærulescens* the lappets on each side are similar. All the specimens of this species (*P. expansa*) in the British Museum are from the Falkland Islands, and this appears to be the first record of its existence at Kerguelen Island. The nearest ally is *P. violacea*, King, with which *Margarita magellanica*, Hombron and Jacquinot, is synonymous. Indeed the relationship is so close that it becomes questionable whether there is any distinction other than variation would afford.

Patella (Patinella) kerguelenensis, *sp. nov.*

(Plate IX., figs. 13, 13a.)

Patella ferruginea, Sowerby MS. in Mus. Cuming, Reeve Con. Icon., viii., sp. 40. (Nec *P. ferruginea*, Gm., nec *P. ferruginea*, Sowerby, Gen. of Shells, fig. 4.)

Patinella magellanica, Dall, American Journ. Conch. 1871, vi., p. 273; Bulletin U.S. Nat. Mus. 1876, iii., p. 43 (nec *P. magellanica*, Gmel.).

Testa ovalis, antice paululum angustata, convexe satis elevata, apice prominenti beneque ante verso præsertim in exemplis junioribus, late radiatim costata, costis parum prominentibus, et sæpe aliis minoribus interjectis, lineis incrementi concentricis undulatis eleganter crebreque insculpta; extus cœruleo-cinerea, costis sæpissime saturatioribus, et apicem versus in exemplis detritis ferruginea; intus jucunde æneo-fuscescens, plerumque marginem versus pallidior (hac parum undulata); cicatrix muscularis perspicua.

Long. (exempl. max.) 82 mill., lat. 70, alt. 45.

The above description is based upon the examination of about twenty specimens.

Animal (in spirit) with the sole of the foot greenish-ash colour, inky-black on the sides, encircled around the middle by a bluntly serrated frill which is interrupted in front of the head; branchiæ pale buff-colour; margin of the mantle blackish, furnished with alternately small and smaller cirri along the edge, the smaller black; head and tentacles black; lips pale buff.

Lingual ribbon very long and narrow; teeth not hooked, in diverging pairs; median pair two-pronged, the inner prong much the larger, and resembling in form a flat spear-head; lateral pairs alternate with the median pairs, four-pronged, the second prong from the centre and the outermost considerably larger than the other two, which are of nearly equal size, the innermost however rather the larger.

Hab.—Swain's Bay usually on rocks about 1 fathom below the surface; but one specimen was also obtained at the extreme verge of low water. Dead shells were occasionally found on some of the islands scattered over the recreation grounds of Cormorants and Gulls (Eaton); also Royal Sound (Kidder).

The figure in the Con. Icon. of this species (as *P. ferruginea*) is very good as regards form, but does not show the prominent apex, and only represents a small specimen. This name adopted by Reeve being preoccupied by Gmelin cannot be retained, and consequently I have substituted for it *kerguelenensis*, as in all probability the species is exclusively indigenous to Kerguelen Island. The *P. ferruginea*, Gmelin, founded on a figure in Martini's Conchylien Cabinet, I., pl. viii., fig. 66, is well refigured by Reeve (Con. Icon. viii., f. 14a-b) under the name of *P. costosoplicata*, which is the first adjective in Martini's brief description. Gmelin's name must therefore be retained for the same species.

The *P. ferruginea*, var. (no author mentioned) figured by Sowerby in his Genera of Recent and Fossil Shells, fig. 4, is one of the endless varieties of *P. ænea*, Martyn. From this species *P. kerguelenensis* differs in having the shell less prominently costated, differently coloured, and in the apex being very prominent and much curved over so as to give it a capuliform appearance, a character constant in all specimens, young and old, elevated or depressed; it also differs in the coloration of the animal. Now in some depressed varieties of *P. ænea* the apex is somewhat

curved over, but it is not prominent and has not the appearance of an umbo, as exhibited by the apex of *P. kerguelenensis*.

In the determining of the present species, having had occasion to examine the Patagonia shell, I will give the results of my investigation. The synonymy is as follows :—

Patella (Patinella) ænea.

Patella ænea, Martyn, Universal Conch. (1784), I., f. 17 ; Reeve, Con. Icon. viii., f. 9a–b.)

var. = *Patella magellanica*, Gmelin, Syst. Nat. 1789, p. 3703; Martini, Con. Cab. i., f. 40a–b ; Reeve, Con. Icon. viii., f. 19a–b.

Patinella magellanica, Dall, Annals & Mag. Nat. Hist. 1871, vii., p. 289.

var. = *Patella deaurita*, Gmelin, S. N., p. 3719 ; Chemnitz, Con. Cab. x., f. 1616.

var. = *Patella cymbularia*, Delessert (non Lamarck), Recueil Coq. Lamk. pl. xxiii., f. 8a–c.

var.= *Patella delesserti*, Philippi, Abbild. & Beschreib. Conch. iii., p. 9, pl. 1, f. 5a–b ;— ? Dall, Bull. U.S. Mus. 1876, iii., p. 44.

var. = *Patella varicosa*, Reeve, l. c., f. 21a–c. ; = *Patella atramentosa*, Reeve, f. 41a–b. ; = *Patella venosa*, Reeve, f. 18a–c. ; = *Patella chiloensis*, Reeve, f. 98a–b.

On comparison of all the figures above quoted the conclusion at which I have arrived, namely, that they represent but varieties of this Protean species, may be somewhat startling, but the large series (about 180 specimens) before me fully justifies the result.

The apex is found in all positions from the very centre almost to the margin of the shell ; every degree of coarseness or fineness of the costation exists, some ribs being very rugose and others only slightly so or quite smooth, some broad and others much finer. The typical form is oval, slightly narrowed in front and subdepressed ; in these respects agree *ærea* proper, and the varieties *varicosa*, *deaurata*, *ferruginea* (Sow. non Gmel.), and *delesserti*. The varieties *magellanica*, *atramentosa*, *venosa*, and *chiloensis* are more roundly oval and usually more elevated. The form figured by Delessert as *P. cymbularia*, of which there are several specimens in the British Museum, is remarkable for its white colour and the strongly contrasting dark coppery brown scutum, which is well defined by the muscular scar. In *P. varicosa* the ribs are described by Reeve as " nearly obsolete," in *venosa* as " more or less obsolete with age," in *chiloensis* as " worn, nearly obsolete." Now their obsoleteness is occasioned merely by erosion, for the types of these species are all in an extremely worn condition, and it is evident by carefully examining the margins of the shells where they are least abraded, that the ribs have existed as in normal specimens. The animals (in spirit) of different varieties do not offer any distinctive characters. The freshest are of a buff colour, with the sole of the foot olive, and the chief tentacular cirri (those which usually mark the number of principal ribs

on the shell) on the edge of the mantle are black. Tentacles buff, with a black spot on the upper surface near the tips. A frill similar to that of *kerguelenensis* encircles the foot.

Patella (Patinella) fuegiensis.

(Plate IX., figs. 14, 14*a*.)

Patella fuegiensis, Reeve, Conchol. Iconica, viii., sp. 78.

The description given by Reeve is very good, but he does not lay sufficient stress upon the beautiful raised concentric ridges. He calls them striæ, which term scarcely gives the idea of thread-like lirations such as these. They are very closely packed and undulate very prettily on and between the numerous radiating ribs.

The figure, except in outline and the position of the apex, gives but a poor idea of this beautifully sculptured Patella. It represents the number of ribs at about forty, whereas there are usually about sixty. The specimens from Kerguelen's Island are a trifle narrower and much more depressed than examples from the Falkland Islands; in fact, it is only near the apex that they are at all raised, and towards the margin they are up-turned, so that the dorsal surface is concave, and this form of the shell certainly prevents the animal from entirely concealing itself when adhering to a flat surface. But this peculiarity of form only exists in adult specimens, for several small ones are like ordinary species in this respect. The radiating ribs are almost obsolete in the flat examples, but the undulating concentric lirations, which are more prominent and farther apart than in the type form of the species, define their position; in young shells they are more pronounced. Colour generally uniformly purplish slate, with the apical region ferrugineous; interior similarly tinted, but rather more deeply. One shell has a white border. They are all very thin and fragile, and the edge is very liable to break off in a line with the concentric raised lines of growth.

The animal has the sides and sole of the foot greenish-grey, the edge of the mantle and gills pale buff, the tentacular filaments on the margin of the mantle blackish except at their tips, tentacles short and thick, pale buff, with a black spot above.

The frill-like expansion of the mantle, similar to that of *P. ænea* and *P. kerguelenensis*, is a little above its edge, is bluntly serrated, and interrupted beneath the head.

Teeth of the lingual ribbon slightly hooked, in pairs, scarcely diverging; the central pairs two-pronged, the inner prong much the larger, spear-head shaped; the lateral pairs alternating with the central ones are four-pronged, the innermost prong smallest, the next two subequal, and the outside one situated nearly at right angles to the rest of the tooth, about the same size or a trifle larger.

Hab.—Royal Sound and Swain's Bay, everywhere very common on the submerged fronds of long floating kelp (*Macrocystis*) bordering the shore.

Patella (Nacella) mytilina.

Patella mytilina, Gmelin, Syst. Nat. p. 3698.

Patella conchacea, Gmelin. l. c. p. 3708.

Nacella mytiloides, Schumacher, Syst. Vers Testac. p. 179.

Patella cymbularia, Lamk. Anim. S. Vert. ed. 1, vol. vi., p. 335; ed. 2, vol. vii., p. 541; Philippi, Abbild. & Beschr. iii., p. 1, f. 2.

Patella cymbium, *Phil.* Archiv. Naturgesch. 1845, p. 60; Abbild. p. 7.

Nacella mytilina, Gmel., Dall, Annals & Mag. Nat. Hist. 1871, vii., p. 289.

Nacella cymbularia, Lamk., Adams Genera Rec. Mol. i., p. 467.

Var. = *Patella vitrea*, *Phil.* l. c. p. 9, pl. i., f. 4 *a*, *b*.

Var. = *Patella hyalina*, *Phil.* l. c. p. 8., pl. i., f. 3 *a*, *b*.

(Not. *Patella cymbularia*, Delessert, Recueil. Coq. Lamk. pl. 23, f. 8 *a–c*, which is one of the many varieties of *Patella ænea*, Martyn.)

On carefully examining a large series of specimens (about 40) of this species, I can arrive at no other conclusion than that the two forms described by Philippi, above quoted, are but variations of Gmelin's shell.

The principal difference is in the position of the apex. In a long series every position is found; in some shells it is quite marginal or nearly so (*P. hyalina*); in others it is slightly more remote from the margin, and again still more so, until it takes that position which it occupies in the typical *mytilina*. The character of the sculpture varies to no material extent. All examples are more or less radiately costated, sometimes conspicuously, and at other times almost obsoletely, the crenulation or undulation of the margin varying in coarseness with the strength or feebleness of this costation. The concentric lines of growth are of the same general nature in every specimen, and all possess minute scratch-like striation (visible only under a lens) radiating irregularly from the apex. The form of the marginal outline is considerably altered in those specimens whose apex is quite marginal, being considerably narrowed at the apical end and somewhat acuminated.

The coloration varies in shells of similar form, some being of a general greyish tint, varied at intervals with darker concentric rings and often a few radiating palish stripes on the ribs. Others are uniformly yellowish-brown, others pale luteous broadly striped with black, and finally, others are of a uniform pale horny colour; but all have the apex cupreous.

The six Kerguelen specimens obtained by Mr. Eaton are uniform in shape, oval, but rather acuminate towards the apex, which is only slightly removed from the margin, rather depressed, more so than Magellan specimens. They are of a brownish-red colour for the most part, and gradually blend into olive towards the margin, coppery within. Thus it will be seen that they only differ from *P. mytilina* proper, in form somewhat and coloration.

Animal similar to that of *P. kerguelenensis*.

Hab.—On young and short *Macrocystis* at a depth of two fathoms in Swain's Bay, at the end of the same promontory as *Littorina setosa*.

From the descriptions of the four preceding species of *Patellidæ* it will be observed that the animals offer no particular differences exteriorly except in coloration. In all "*a scalloped frill, interrupted only in front*" encircles the sides of the foot, and this peculiarity induced Dall to impose upon those species possessing it the subgeneric name of *Patinella*.

As *P. mytilina* possesses a shell differing somewhat in form and texture, perhaps it may be well to retain the subgeneric title *Nacella* proposed by Schumacher for this species.

With this group Messrs. Adams place *P. pellucida*, Linn., but since this animal has the branchial cordon interrupted in front of the head, it becomes necessary to locate it in another section, which Leach has styled *Patina*.

Siphonaria redimiculum.

Siphonaria redimiculum, Reeve, Conchol. Iconica, ix. sp. 24, 1856.

Siphonaria magellanica, Philippi? Malakozool. Blatt. 1857, vol. iii. p. 165.

Siphonaria lateralis, Couthony MS.? in Coll. Cuming.

Siphonaria tristensis, Dall, Bulletin U. S. Nat. Mus. 1876, iii. p. 145 (not *S. tristensis*, Leach).

It is somewhat questionable whether the young examples of *S. magellanica*, which are described by Philippi as being hooked at the apex, are not slight varieties of Reeve's species. The former is said to have the siphonal angle very prominent and the inner margin white articulated with black, and in these respects it differs from *redimiculum*, the siphonal angle of which is not conspicuously prominent (a character very often exceedingly variable in shells belonging to the same species) and the interior is very dark brown or purplish black, a little paler at the margin, which is at times articulated with white.

The shells from Kerguelen Island consist of two varieties, or perhaps two stages of growth. The first and most abundant form agrees with certain specimens collected in the Straits of Magellan by Dr. R. O. Cunningham (presented to the Museum by the Admiralty), and also with others in the Cumingian collection labelled *S. lateralis* of Couthouy, of which I find no description, from the Falkland Islands. This variety is considerably different in form from the typical *redimiculum*, being much flatter, with the apex less cap-shaped and not so terminal, and the costation rather more rugose; but the coloration is the same. The second variety may be said to be quite normal, but as they are smaller shells than those which belong to the other variety, it is very probable that they are but the young form of this species, which is borne out by the statement of Philippi that the young shells of his *S. magellanica* have the apex *aduncum, sæpe margini incumbentem*, which applies exactly to this variety. *S. Tristensis*, Leach (not *S. Tristensis*, Reeve, Con. Icon.

sp. 23, which is *S. Lessoni* of Blainville) and *S. Macgillivrayi*, Reeve, perhaps only a local variety of the former, are the closest allies of this species.

The animal is of a dark slate colour indistinctly dotted with a darker tint; the sole of the foot and beneath the head greenish buff; edge of the mantle very pale bluish, at times spotted with slate colour. The foot oblong, rounded posteriorly and somewhat truncated in front; the head large, flattened beneath, and arched in front. The radula is very short and broad, and presents toward the mouth of the animal a somewhat semi-lunate surface, which is slightly keeled longitudinally down the centre. It is armed with numerous close transverse series of minute teeth very slightly divergent from the central tooth. They gradually diminish in size towards the margin, are but slightly uncinate, and the central tooth is similar to the rest.

[Hemiarthrum setulosum.

Hemiarthrum setulosum, Dall, Bulletin U. S. Nat. Mus. 1876, iii., p. 14.

Hab.—Kerguelen Island, on stones at low water (Dr. Kidder).]

Doris tuberculata.

Doris tuberculata, Cuvier, Ann. Du Mus. v. p. 469, pl. 74, f. 21; Alder and Hancock Brit. Nad. Moll. fam. 1, pl. 3; Jeffreys Brit. Conch. v. p. 83, pl. 3, f. 4.

? Doris (*sp. undetermined*), Kidder, Bulletin U. S. Nat. Mus. 1876, iii. p. 48.

A Nudibranch brought from Kerguelen Island by the Antarctic Expedition has been identified as a variety of this common European species, by Mr. P. S. Abraham, who has recently been studying the species of this genus in the national collection. He says that it possesses no characters of specific distinction from *D. tuberculata*, and differs from it only in a few slight and unimportant particulars attributable to mere variation.

The unequal tubercles, flattened at their tips, are more numerous and crowded at the extremities and along the sides of the mantle than in the middle of it.

The undetermined *Doris* found by Dr. Kidder in tide pools at low-water in Royal Sound will very likely prove to be the same species.

Helix (Patula) hookeri.

Helix hookeri, Reeve, Con. Icon. vii., pl. 208, f. 1474. *Helix* (*Patula*) *hookeri*, Pfeiffer, Malaco. Blätt. ii., p. 126; Monog. Helic. iv., p. 87; vol. v., p. 152.

Helix (*Hyalina*) *hookeri*, Dall, Bulletin U. S. Nat. Mus. No. iii., 45.

The animal of this species (in spirit) with a narrow foot, rather narrower posteriorly than in front. The sole of it a pale livid olive, and the sides dark slate-colour. The mantle above the head pale livid, dotted with dark slate spots.

Mr. Eaton says:—" During life the animal (viewed through a lens) is black " reticulated with grey; tentacles either black above and dark grey beneath longi-

" tudinally, or dark grey throughout; foot bordered above by a ribbon-like stripe " which is composed of long oblong tessellations, whose interstices are grey, which is " separated by a thin pale irregular line from the more finely reticulated upper " portion of the sides and back; the interspaces of the reticulation of these last are " slightly raised and black, and cause the surface to be somewhat granulated. " Some of the lines of growth in the shell are occasionally straw colour."

Hab.—Common in the neighbourhood of Royal Sound, especially on the terraces of basalt.

CONCHIFERA.

Saxicava bisulcata, *sp. nov.*

(Plate IX., fig. 21.)

Testa transverse subrhomboidalis, mediocriter crassa, valde inæquilateralis, tumida, alba, epidermide tenuissima lutescente partim induta, sulcis duobus minime profundis ab umbonibus usque ad medium marginis ventralis, ibique productis dentes duos effingentibus arata, lineis incrementi concentricis subtenuibus insculpta; umbones parvi, contigui, fere terminales, incurvati; margo ventralis minime arcuatus, medium versus bidentatus; latus anticum extra umbones vix prominens, posticum a margine dorsali decliviter arcuatum; ligamentum distinctum, flavescens.

Diam. transversa 6 mill. Alt. $3\frac{1}{3}$. Crass. $3\frac{1}{3}$.

Hab.—Kerguelen's Island.

This very curious species of *Saxicava* is the only one with which I am acquainted having dentate ventral margins to the valves. These dentitions are the prolongations of two shallow sulci which radiate from near the umbones, not quite down the centre of the valves but a trifle posteriorly, to their edge. When the shell is closed the ventral margin has an undulating aspect, which is produced by the interlocking of these little tooth-like projections. Besides these two sulcations in some specimens there are very faint traces of others, or raised ridges radiating down the posterior dorsal slope. Many of these shells have several porcellaneous tubercles which adhere to the inner surface of the valves, and all of them have a single perforation at their base.

Kellia consanguinea *sp. nov.*

(Plate IX., fig. 20.)

Lasea rubra, Dall, (non Montagu), Bulletin U. S. Nat. Mus. 1876, No. iii., p. 45.

Testa transversa, valde inæquilateralis, paululum oblique ovalis, postice leviter angustior, tumida, haud perfragilis, flavescens, prope cardines et latera purpureo-roseo tincta, intus dilute rosea, ad umbones plerumque erosa, epidermide mediocriter crassa, flavescente induta, concentrice tenuiter striata, hic illic fortius concentrice plicata; umbones aliquanto prominentes, contigui, ad circiter longitudinis $\frac{1}{3}$ a latere antici siti; linea cardinalis arcuata, purpureo-rosea; valva dextra dente conico infra

apicem umbonis (qui in fossa parva in valva sinistra accommodat) munita, et utrinque dente laterali prominenti (qui in sulco profundo in valva sinistra inter dentem similarem marginemque dorsalem accommodat) instructa; valvarum margines generaliter ubique arcuati.

Diam. transversa 3 mill. Diam. longitud. $2\frac{1}{3}$. Crass. 2.

Hab. Royal Sound; abundant under stones between tide-marks at Observatory Bay.

At a first glance this species might easily be mistaken for the European *Lasæa rubra*, to which it has a very great resemblance. It is, however, of a rather stronger structure, the epidermis is thicker, the form too transversely rather more elongate, the umbones always, in the seven examples at hand, considerably eroded, and there is not the faintest trace under a powerful microscope of that minute (apparently punctate) radiating striation which is observable in *L. rubra*. The dentition is a little different also. The *Kellia miliaris* described by Philippi in Wiegmann's Archiv für Naturgeschichte, 1845, p. 51, from the Straits of Magellan, is another closely allied species but differently coloured, it has no epidermis, and the umbones are rather more prominent.

Lepton parasiticum.

(Plate IX., fig. 22.)

Dall., Bulletin U.S. Nat. Mus. 1876, iii., p. 45.

Hab.—Parasitic on a Sea-urchin (*Hemiaster cavernosus*), living in the deep ambulacra, and also on the surface of the test.

This species is remarkable for its parasitic nature and being viviparous. On opening an adult specimen I found it to be filled with about a dozen very small ones.

Lissarca, *subgen. nov.*

Testa æquivalvis, subrhomboidalis, valde inæquilateralis (umbonibus fere terminalibus), concentrice striata; linea cardinalis utrinque paucidentata, in medio lævis; margines valvarum intus dentati.

This sub-genus of *Arca* is distinguished from *Barbatia* of Gray, which is the nearest allied group, in having the shell concentrically (and not radiately) striated, with the umbones nearly terminal, and consequently it is very much more inæquilateral than is usually the case in *Barbatia*.

Arca (Lissarca), rubro-fusca, *sp. nov.*

(Plate IX., fig. 17.)

Pectunculus miliaris ? *Phil.* Wiegman's Archiv. Naturgesch. 1845, p. 56.

Testa valde inæquilateralis (umbonibus fere terminalibus), ventricosa, irregulariter subrhomboidalis, antice oblique aliquanto truncata, postice latior, arcuata, medio-

criter crassa, ubique rubro-fusca epidermide luteo-olivacea tenuiterque concentrice laminata amicta; area dorsalis angustissima, linearis; umbones magni, mediocriter prominentes, fere contigui; linea cardinalis in medio rectiuscula, lævis, utrinque leviter arcuata, dentibus albidis, obliquis tribus vel quatuor (posticis quam anticis longe majoribus) munita; margo ventralis parum arcuatus, latus versus anticum levissime sinuatus; valvarum margines (præter prope sinum levissimum et ad medium lateris postici) intus fortiter denticulati.

Diam. transversa 4 mill. Alt. $2\frac{2}{3}$. Crass. $2\frac{1}{2}$.

Hab.—Kerguelen Island (Antarctic Exped. and Transit Exped.).

It might be thought that this remarkable little species has been described from young shells on account of their smallness, however their comparative solidity, the strong teeth on the hinge and on the margin, give them the appearance of being adult. These marginal dentations are interrupted at the posterior extremity of the valves, and also towards the anterior end of the ventral margin, where it is faintly sinuated, and where also the little byssus protrudes.

The hinge line is moderately straight, and between it and the dorsal line, which is slightly arcuate, there is an extremely narrow linear area. The umbones are rather tumid and project slightly above the dorsal line. From the umbo to the posterior end a little above the middle of the valves there is the faintest depression. The posterior muscular scar is sub-pear-shaped, largish and well defined, the anterior is small and indistinct, and the pallial line is simple and continuous. The hinge-ligament is central, and so small as to be scarcely traceable. Its teeth are strongly developed, especially the three or four posterior ones, which are conspicuously stronger than the anterior and more oblique.

I have quoted Philippi's *Pectunculus miliaris* with a note of interrogation, as I cannot reconcile certain peculiarities in the present species with his description. At all events they are congeneric, and therefore *P. miliaris* must be placed in *Lissarca*, which is distinguished from *Pectunculus* by its transverse trapezoidal form and the subterminal position of the umbones, which in the latter genus are almost central; the teeth are fewer and the valves not radiately striated or ribbed.

L. rubro-fusca apparently differs from *L. miliaris* somewhat in form, the umbones not being very acute, the margins of the valves are crenulated only in certain places, and not in others, the number of teeth on the hinge-line is smaller, and a dorsal area exists although it is extremely narrow.

These are, it is true, but small distinctions, and had Philippi's description been more copious, possibly these shells might have been referred to his species without doubt. The habitat of his species is the Straits of Magellan, and this is favourable to the identity of the two species; however, until an opportunity is offered for the comparison of authentic examples, it seems to me that it will be the safest course to apply a distinctive name to the Kerguelen Island form.

Two specimens collected by Mr. Eaton differ from those obtained by the Antarctic Expedition many years ago in being rather shorter, and wider posteriorly, in having the umbones less terminal, and the ventral margin of the valves being without denticulations; the last characteristic may be due to immature age.

Yoldia subæquilateralis.

(Plate IX., fig. 18.)

Yoldia subæquilateralis, Smith Annals & Mag. N. H. 1875, xvi., p. 73.

Testa ovalis, postice acuminata, subæquilateralis, postice paululum brevior, convexiuscula, epidermide olivacea vel flavo-olivacea induta, concentrice rugose striata, utrinque umbonibus ad marginem subventralem striis paucis subgranosis radiantibus insculpta, utrinque leviter hians, intus cæruleo-alba; margo dorsalis utrinque multum declivis, antice levissime convexo-arcuatus; postice fere rectus; margo ventralis ubique arcuatus; latus anticum late rotundatum, posticum subacuminate productum; fovea ligamentalis parva triangularis; dentes cardinales utrinque 11; sinus pallii latissimus parum profundus.

Lat. 34 mill., long. 23, crass. 9.

The animal resembles that of *Solenella gigantea* in all respects excepting that the edge of the foot is bluntly serrated or scalloped.

Hab.—Swain's Bay. Dredged in 7–10 fathoms in very sheltered water.

I know but one species which approaches the present one somewhat closely, namely *Y. eightsii* of Couthouy. From this, however, it is well distinguished by its different form. By reference to Jay's figure upon which *Y. eightsii* is founded (for no description is given; Cat. Shells, 1839, ed. 3, pl. i. f. 12 & 13), it will be perceived that a very inequilateral shell is there represented, with a much *excavated* posterior dorsal slope; on the contrary, *Y. subæquilateralis* is almost equilateral, with a *straight* posterior dorsal acclivity.

Solenella gigantea.

(Plate IX., fig. 19.)

Solenella gigantea, Smith Annals and Mag. N. H. 1875, July, p. 72.

Testa elongato-ovalis, postice subrhomboidalis, parum inæquilateralis, postice longior, aliquanto ventricosa, marginem versus posticum compressiuscula, epidermide nitidissima (vel fusco- vel flavo-olivacea) induta, lineis incrementi concentricis (interdum prominentibus) ornata, et striis paucis tenuissimis et confertis ab umbonibus usque ad medium lateris antici radiata, intus alba, iridescens; margo dorsalis utrinque leviter declivis, ventralis vix arcuatus; extremitas lateris antici brevioris paululum medium supra leviter acuminato-rotundata; postica superme

subrostrata, inmedio leviter sinuata; dentes cardinales postice circiter 32, antice 11; impressio pallii perprofunde sinuata.

Lat. 62 mill., long. 32, crass. 19.

Animal furnished with a large foot of an oval form beneath, acuminated at both ends, deeply cleft down the centre, and deeply striated across, surrounded by a nearly even margin; siphons small, united, retractile, very unequal in size; the upper or exhalant one very slender, the lower considerably larger; gills small, terminating at the side of the body; mouth very small; palpi very large, lamellately wrinkled within, the terminal appendages towards the siphons with undulating margins; the margin of mantle treble-edged, simple, only fringed near the siphonal extremity.

Hab.—Royal Sound, both at Observatory Bay and near the eastern shore of Swain's Harbour, on mud in about 10 fathoms.

This magnificent species is by far the largest yet described of this genus, and is at once known from the other three species by its different form. The posterior end pouts in the same manner as in the North American *Yoldia thraciæformis*. The epidermis in young and half-grown specimens is of a bright yellowish olive colour; but in the adult shell it becomes of a dark olive-brown, and is much eroded in the umbonal region; it is slightly reflexed within the margin of the valves, and is held between the two outer edges of the mantle. The few radiating contiguous striations towards the anterior end furnish another very distinctive character.

Mytilus magellanicus.

M. magellanicus, Chemn. Con. Cab. viii., pl. 83, f. 742; Knorr, Vergnügen iv., pl. xxx., f. 3; Reeve, Con. Icon. x., pl. 6, f. 22; Dall, Bulletin N. S. Nat. Mus., No. iii., p. 47.

M. bidens (Linn.? part.) et auctorum, vide Born. Mus. Vindobon. p. 128; Gmelin, p. 3354; Dillwyn, Descript. Cat. p. 313.

Hab.—Royal Sound, on roots of kelp and on rocks at a depth of 3 fathoms, obtained by means of a grapple.

This common Magellan species varies in colour very considerably. The largest specimens are generally of the form and dark purplish-black colour, as represented by Reeve's figure; others are of a more purplish-slate tint, clothed with a rich olive-brown epidermis, and again others are altogether bright yellow. In the British Museum there are several examples of this species with the locality New Zealand attached to them. I cannot trace any character whereby they can be separated specifically, and the habitat is certainly correct, as the shells were received from a reliable authority.

Mr. Eaton says that "the specimens brought up by the kelp often had extremely thick shells, and occasionally measured upwards of five or six inches in length; the

thin yellow examples appeared to be young, and those which were olive-brown to be less aged than the purple-black shells, as a rule. The animals were in great request among the blue jackets (when the expedition first landed), who used to haul up the kelp and collect them by buckets-full; but early in November they went out of season and became uneatable."

Mytilus edulis.

Mytilus edulis, Linn. Syst. Nat. ed. 12, p. 1157.

Mytilus canaliculus, Dall (non Hanley), Bull. U. S. Nat. Mus. 1876, 3, p. 41; (non *M. canaliculatus*, Martyn).

Probable varieties are *M. ungulatus* (Linn. part), Lamarck; *M. chilensis*, Hupé; *M. chilensis* (Philippi), Reeve; *M. obesus*, Dunker; *M. trossulus*, Gould.

Hab.—Abundant on rocks between and a little below tide-marks at Kerguelen's Island.

After a careful consideration of this species, I cannot arrive at any other conclusion but that the Kerguelen shells undoubtedly are specifically the same as the common edible mussel (*M. edulis*). No definite distinction can be traced in the shells (unfortunately only eleven in number) collected at Kerguelen, from specimen from the Dutch coast bought in the London market. The form of the shell (always more or less variable), colour of the exterior and interior, the hinge with the few irregular teeth, muscular scars, and the punctures in the interior towards the ventral margins, are precisely alike in both local forms. Mr. W. H. Dall, who has given an account of the Mollusca obtained by the American Transit party (*see* Bulletin U. S. Nat. Mus. p. 48) remarks that "the shell of this species closely "resembles some varieties of *Mytilus edulis*, but the soft parts are quite different. "The foot is large and quite flat beneath. The viscera and branchiæ are white, "the foot and mantle edge streaked with dark brown."

I have closely examined the soft parts of four Kerguelen specimens, and contrary to Mr. Dall's assertion that they are quite different, I find them to be exactly the same as in European specimens, excepting that the foot is smaller if anything, and not "larger," but this may possibly be due to contraction, since the foot in some Dutch examples is larger than in others of similar size. In coloration not the slightest difference is discoverable, both forms having the foot and the mantle-margin more or less brown.

Several other species, for instance, *M. chilensis*, Hupé, described in the zoological portion of Gay's History of Chile, *M. chilensis* of Philippi, published in Reeve's Conchologia Iconica, and *obesus*, Dunker, in the same work, apparently do not offer any appreciable specific characters whereby they may be separated from *M. edulis*, and I do not feel convinced that the large *M. ungulatus* is anything more than a gigantic form of this species. And again Jeffreys, speaking of *M. trossulus*, Gould, says that it "probably differs in no other respect than being called a 'representative'

" species." Thus it would appear that these so-called species probably are but locality-species, but until an opportunity occurs of studying the Mytilidæ *en masse*, it would be hazardous to affirm so definitely. None of the specimens from Kerguelen Island exceed two inches and a half in length.

Modiolarca trapezina.

Modiola trapesina, Lamk. Anim. S. Vert. ed. 2, vol. vii., p. 24.

Modiola trapezina, Küster, Con. Cab. viii., heft. 3, pl. 6, f. 16 & 17.

Modiolarca trapezina, Gray, Synopsis Brit. Mus. 1840, p. 151; Proc. Zool. Soc. 1847, p. 199; Adams, Gen. Rec. Moll. iii., pl. 122, f. 1 and 1*a*.

Phaseolicama trapezina, Hupé, Gay's Hist. Chile, Malacologia, pl. 8, f. 9.

Phaseolicama magellanica, Rouss., Voy. au Pol Sud, Moll., p. 116, pl. 26, f. 2*a–d*.

Gaimardia trapesina, Gould, Atlas United States Explor. Exped. pl. 41, f. 568.

Hab.—Kerguelen Island.

This species is also found at the Falkland Islands. Messrs. H. and A. Adams describe " the hinge with two small oblique teeth in the right valve, which receive " two corresponding ones on the left." All the specimens which I have examined, be they adult or young, have but a single tooth in each valve, or more strictly speaking a single rounded tubercle situated just below the apex of the umbo, and sometimes the faintest indication of a second.

The ligament is very slender, only just visible exteriorly, and placed in a narrow elongate groove posterior to the umbones. The shells present various grades of colour, some being as Lamarck states, " luteo-fulva," others gradually passing into dark purplish-red.

Modiolarca exilis.

(Plate IX., fig. 24.)

Modiolarca exilis, H. & A. Adams, Proc. Zool. Soc. 1863, p. 435.

Testa parva, inæquilateralis, irregulariter transverse ovata, antice breviter rostrata, mediocriter convexa, sub epidermide tenui fugaci flavo-olivacea (plerumque partim detrita), fusco-purpurea, concentrice tenuiter striata, umbones prominentes, incurvati, contigui, propius ad latus anticum siti; margo dorsalis antice subrecte declivis, postice arcuate declivis; latus anticum angustum paululum rotundate rostratum, posticum late arcuatum; margo ventralis leviter arcuatus antice levissime sinuatus; dentes 2 sub apicem utræque valvæ; ligamentum fere omnino internum, in sulco elongato postico situm.

Diam. transversa 5 mill. Alt. fere 4. Crass. $2\frac{1}{2}$.

Hab.—Kerguelen Island and " Falkland Islands," Mus. Cuming.

The only specimen of this species from Kerguelen Island agrees precisely with others from the Falkland Islands, of which there is a large series in the Cumingian Collection, and also with the types in the collection of Mr. Henry Adams.

In every example the thin yellowish-olive epidermis is worn off from a large portion of the surface of the valves, and is retained only near the ventral margins and on the sides.

Modiolarca minuta.

(Plate IX., fig. 23.)

Kidderia minuta, Dall, Bulletin U. S. Nat. Mus. 1876, No. 3, p. 46.

There are three specimens of this species obtained by the early Antarctic Expedition in the Museum. At first they appeared to me to differ so slightly from *M. pusilla* of Gould from Terra del Fuego that I had labelled them as a variety of that species; but Mr. Dall, who possibly has a larger series at hand, has pointed out certain differences, which although slight may be sufficient to separate the two forms. However, I cannot retain the genus *Kidderia* as described by him. He says that "it differs from *Modiolarca* in its single anterior muscular scar, the "presence of strong *nymphæ* for the sub-internal ligament, and in the full deve- "lopment of the cardinal teeth." Of the three examples at hand I have opened two, and in both distinctly observe that there are two anterior muscular scars as in *Modiolarca*. The second, the upper one, is extremely difficult of observation, because it is situated deep within the shell and under the apex of the umbo. In *M. pusilla* two scars are also present.

The second character referred to as distinguishing *Kidderia* from *Modiolarca*, namely, "the presence of strong *nymphæ*," is merely one of degree, and equally untenable. In the present species they are less strongly developed than in *pusilla*, and rather more so than in the type of the genus (*M. trapezina*.)

The third distinction is likewise one of degree of development, the teeth of the Patagonian species being rather stronger than those of the Kerguelen shell, and both more developed than those of the common *trapezina*, in which they are represented by a very small tubercular tooth in each valve, and sometimes a faint trace of a second one.

Radula (Limatula) pygmæa.

(Plate X., fig. 16.)

Lima pygmæa, Philippi, Archiv. f. Naturgesch., 1845, p. 56.

Limatula falklandica, A. Adams, Proc. Zool. Soc., 1863, p. 509.

Hab.—Swain's Bay.

There can be no doubt, I think, that the above two names have been applied to the same species. Both authors describe their shells as ovate, equilateral, and the costation obsolete on the sides. In the Museum there is a specimen from the Strait of Magellan, the locality cited by Philippi, rather larger than his example, which was evidently a young shell, but answering to his description in every respect, and agreeing, excepting in size, perfectly with the type of *Falklandica*, which measures

15 mill. long and 11 in breadth and 10 in thickness. Nothing need be added to Adams's excellent description excepting the number of the ribs, which average about 24 in the largest specimens.

BRACHIOPODA.

Waldheimia dilatata.

Terebratula dilatata, Lamarck, Anim. sans Vert., ed. 2, vol. vii., p. 330; Sowerby, Thesaurus Conch., i., p. 352, Pl. lxx., figs. 48, 49.

Terebratula gaudichaudi, Blainville, Dict. Sci. Nat., 1828.

Waldheimia dilatata, Gray, Cat. Brachiopoda Brit. Mus., p. 59.

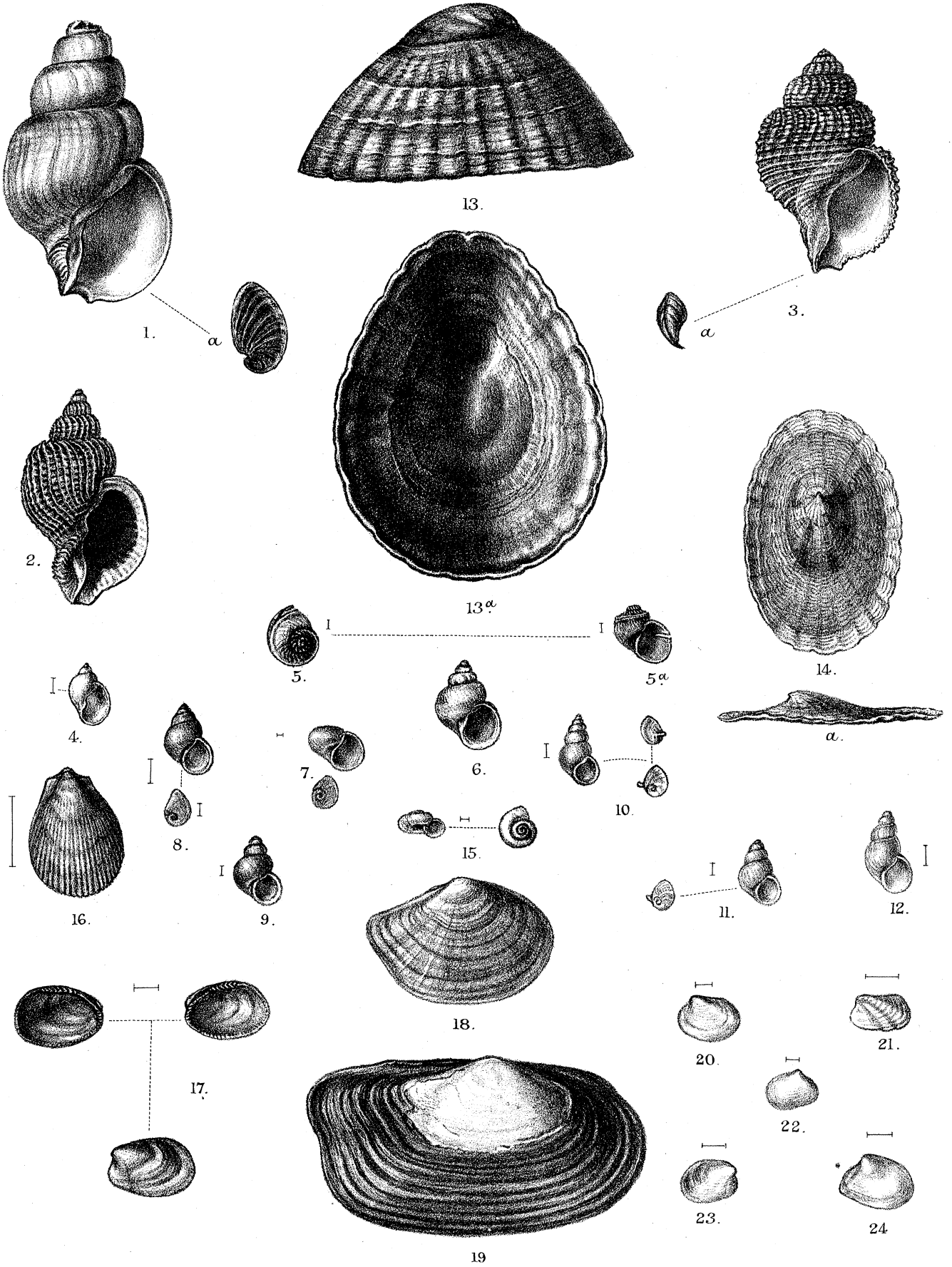
Terebratula (*Waldheimia*) *dilatata*, Reeve, Con. Icon., xiii., Pl. II., fig. 2.

Hab.—Observatory Bay. On rocks at 4 fathoms, obtained with the aid of a grapple out of a cleft in the rocks.

Reeve questions the correctness of the habitat attributed to this species by Gray. But considering how many species of animals found at Kerguelen Island are also indigenous to Patagonian seas, there can be little doubt that Gray was quite correct in this instance.

EXPLANATION OF PLATE IX.

Fig. 1. Neobuccinum Eatoni, *a*. operculum.
2. Trophon albolabratus.
3. Struthiolaria mirabilis, *a*. operculum.
4. Admete limnææformis.
5, 5*a*. Scissurella supraplicata.
6. Littorina setosa.
7. Hydrobia pumilio.
8. „ caliginosa, and operculum.
9. Eatoniella caliginosa.
10. „ kerguelenensis, and operculum.
11. „ subrufescens, and operculum.
12. Rissoa kergueleni.
13, 13*a*. Patella (Patinella) kerguelenensis.
14, 14*a*. „ „ fuegiensis.
15. Skenea subcanaliculata.
16. Radula pygmæa.
17. Arca (Lissarca) rubro-fusca.
18. Yoldia subæquilateralis.
19. Solenella gigantea.
20. Kellia consanguinea.
21. Saxicava bisulcata.
22. Lepton parasiticum.
23. Modiolarca minuta.
24. „ exilis.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