communication with the ambient liquids by exceedingly delicate canals starting from their periphery, a certain number of which open at the surface of the perforated shells. On this hypothesis these canals would represent the afferent apertures of the *Clionæ*.

In thin plates of shells the perforations of the *Dendrinæ* are seen to be composed of more or less numerous irregularly branched vacuoles, which are inflated here and there, but retain throughout a pretty wide diameter. The youngest are ovoid or lageniform.

Although the size of the *Dendrinæ* is variable, it is rare for an individual from the French coast (*Dendrina europæa*, Fisch.) to attain 0·8 millim.; generally the maximum diameter is 0·6–0·7 millim. The large osculum measures 0·07 millim., and the lobules vary between 0·06 and 0·08 millim. in diameter. I have counted from 60 to 80 individuals of *Dendrina* upon a surface of 1 square centimetre of the shell of *Pecten opercularis*.

When a *Dendrina* is highly magnified, a quantity of minute canals are seen to start from the periphery of the lobules and penetrate the perforated shell in all directions. These canaliculi are cylindrical, rectilinear, slightly dilated near their point of emergence, truncated at their extremities. Sometimes some are a little wider than the others, or slightly curved. Each canaliculus seems to have a distinct origin; there are no anastomoses or bifurcations; the interior is filled with a brownish organic material. Their length is from 0·03 to 0·06 millim., and their diameter from 0·0010 to 0·0015 millim. It may be supposed that sarcodic processes more or less analogous to the pseudopodia of the Rhizopods pass into these canaliculi.

I have been unable to ascertain the existence of spicules in the interior of the *Dendrinæ*, even with a power of 500 diameters. We see no trace of the siliceous plates or corpuscles which consolidate the surface of the *Clionæ* and *Rhoosæ*.

The *Dendrinæ* cannot be confounded with young *Clionæ*. The latter have a more or less rounded initial chamber of much larger dimensions; in a more advanced stage the excavations of the *Clionæ* are united to each other by narrow canaliculi, and several oscula open at the surface of the perforated body, whilst in the *Dendrinæ* there exists only one principal orifice, at which the canal penetrating into all the lobules terminates.

The size of the *Clionæ* is only limited by the extent of the perforated body; sometimes, even, the *Clionæ*, which have commenced their work of destruction at various points, become confounded into a mass by a process to which I have given the name of *aggregation by coalescence*. The dimensions of the *Dendrinæ* are comparatively limited, and hardly vary more than those of the existing Foraminifera. This last character, with the presence of the peripheral canaliculi and the absence of spicules, leads me to regard the *Dendrinæ* as a peculiar type of perforant Sarcodaria more nearly related to the Rhizopods than to the Sponges.—*Comptes Rendus*, December 6, 1875, p. 1131.

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XI.—*Descriptions of Species of* Asteriidæ *and* Ophiuridæ *from Kerguelen's Island.* By Edgar A. Smith, F.Z.S., Zoological Department, British Museum.

This is the first account of any starfish from the above locality; and consequently the very large proportion of new species among the eleven here enumerated is not altogether surprising. The specimens now described form part of the collections made by the Rev. A. E. Eaton, the naturalist sent by the Royal Society with the British expedition for observing the Transit of Venus in the early part of last year. The Asteriidæ were all dredged in Royal Sound, at a depth of from 5 to 10 fathoms. Further remarks on their similarity to boreal types and their relation to other faunas will be made in a subsequent paper.

Asteriidæ.

Asterias meridionalis, Perrier, Ann. & Mag. Nat. Hist. 1876, vol. xvii. p. 36.

Body six-rayed, reddish brown above, pale buff beneath. The rays thickish, taperingly conical, convex above, rather more than twice as long as the width of the disk. Ambulacral spines in two series: the lower margin of the rays with a double or triple series of short spines; dorsal margin with a similar row. Upper surface of the body and arms covered with numerous short, blunt, irregularly disposed spines.

Diameter between extremities of opposite arms 6 inches; diameter of disk $1\frac{5}{16}$ inch.

Var. With the spines on the upper surface longer and acute.

Hab. Royal Sound, Kerguelen's Island.

The specimens which I associate with this species differ from the type of it described by M. Perrier in a few particulars. In one example the ambulacral spines are not constantly in a double row; towards the mouth they are in but a single series, and only become double at intervals up the rays. This specimen has the spines on the upper surface blunt and short, as in the type; but another example differs, being covered with longer conically acute mobile spines.

Asterias Perrieri, sp. nov.

Radii sex, cylindraceo-attenuati, ad latera supraque rotundati, inferne anguste complanati; discus mediocriter magnus, diametri maximæ circiter $\frac{2}{7}$ æquans; sulci ambulacrales haud latissimi; spinæ ambulacrales serie unica (in exemplo maximo longitudine circiter 3 millim.), subgraciles, latitudine æquales, ad apicem haud clavatæ, modo rotundatæ; spinæ ventrales serie duplici, prope spinas ambulacrales sitæ, in paribus divergentibus (vel magis infrequenter spinis tribus), spina intima quam cæteræ majore, atque quam ambulacrales breviore sed crassiore, aliquantoque acuminata; superficies dorsalis et lateralis spinis minutis brevissimis, paulo conicis, irregulariter sparsis munitæ, interque spinas papulis innumerabilibus instructæ; tessella madreporiformis parviuscula, ad medium inter disci centrum et marginem sita. Color saturate fusco-rufus. Diam. extrema (6 poll.) 150 millim.

The ventral spines are in pairs (except near the base of the arms, where there are three or four single ones), the two spines diverging from their bases, where they are adjacent; they are rather thick and conical, the inner one being somewhat the larger. The spines on the sides and dorsal surface are very minute, very numerous, and irregularly disseminated, except along the side of the arms near the base, where there appears to be a single continuous series; and all the spines of this species are granulously roughened.

The largest specimen has a cluster of some hundreds of young ones clinging to the ventral disk. They are all invariably six-rayed, have only two rows of ambulacral tentacles and a single series of spines bordering them. The rays are very short and broad, nearly as broad as long, the lateral dorsal margins with a single row of large spines, and a similar series down the centre of the rays.

A. rugispina of Stimpson is allied to this species, with which I feel much pleasure in associating the name of M. Edmond Perrier, of the Jardin des Plantes at Paris, who very recently identified many species of Asteriidæ in the British-Museum collection.

Pedicellaster scaber, sp. nov.

Discus 5-radiatus, latitudine circiter radii longitudinis $\frac{1}{2}$ æquans; radii sensim attenuati, cylindracei, haud acutissimi, spinis brevissimis singularibus, obtusis, scabrosis, modo irregulari aliquanto reticulato ordinatis muniti, iis prope ambulacra quam cæteris paulo longioribus; interstitia inter reticulationes nuda, pedicellarias magnas gerentia; spinæ ambulacrales in seriebus tribus, graciles longitudinisque æqualis, quam dorsalibus duplo longiores; oris anguli interradiales spinis duabus parvis terminati; anus fere centralis; tessella madreporiformis in angulo interradiali prope marginem sita.

Disci diam. 9 millim.; radiorum longit. 18, ad basim crass. $5\frac{1}{2}$; disci crass. 6.

This species appears to agree very fairly with Sars's description of his genus *Pedicellaster*, except that the ambulacral furrows cannot be said to be "broad," and the ambulacral spines are not in two rows but three. But these are more specific than generic characters; and therefore I think this may safely be regarded as a second species of that northern form.

The spines are roughened with minute prickles, those of the dorsal surface being about twice as long as thick, and blunt at the tips; and a row or two near the ambulacral spines are rather longer, and the latter are still more elongated. The spines on the back of the disk and arms do not display any regular arrangement, but are disposed in an irregularly and rather closely reticulating manner.

Othilia spinulifera, sp. nov.

Discus 5-radiatus, latitudine circiter radii longitudinis $\frac{1}{2}$ æquans, mediocriter crassus, superne leviter rotundatus; radii cylindracco-attenuati, spinas numerosas, brevissimas scabrosas irregulariter dispositas sed modo aliquanto reticulato gerentes; tamen prope spinas ambulacrales, spatium est lineare fere nudum, iis parallelum, versusque radiorum basim sensim latius, spinarum minutarum quam ambulacrales longe minorum serie unica munitum; spinæ ambulacrales supra quamque tessellam quatuor, transversim sitæ, divergentes, intimis 2 quam aliæ paulo longioribus, et ad intimæ basim spina gracillima parva sita est; oris anguli interradiales spinis duabus parvis terminati; anus subcentralis; tessella madreporiformis submarginalis, in radiorum angulo.

Radiorum longit. 14 millim., diam. ad basim $4\frac{1}{2}$; disci diam. 7, crass. 6.

This curious little species does not display any particular

arrangement of spines on the dorsal surface; but towards the ambulacral furrow there is first of all, parallel with the spines which border it, a series o very small spines, only one on each plate, so that a narrow l ure space is en; above this the spines are two or three on a plate.

Pteraster affinis, sp. nov.?

Discus magnus, 5-radiatus, inferne planus, supra convexus, mediocriter crassus, latitudine radiorum longitudinem adæquans; radii breves, ad basim lati, versus extremitates recurvatas sulcos ambulacrales exponentes rapide angustantes; eorum superficies infera utrinque membrana tenui spinis circiter 30 gracilibus munita (quarum apices vix extra membranam projiciunt) obtecta; tessellæ interambulacrales spinas quatuor graciles, membrana tenuissima fere ad earum apices extendente connexas gerentes; oris angulus quisque interradialis spinas 8 similes, membrana pariter connexas gerens, extremis duabus quam cæteræ maxime brevioribus, medianis duabus longissimis; illas supra sunt spinæ duæ crassæ, altera alteræ parallela, medio leviter concavæ, longitudine spinarum 30 lateralium elongatissimam æquantes, et versus apices leviter acuminatæ; superficies dorsalis et laterales projecturis minimis spiniferis munitæ, et inter has poris minutis haud numerosis perforatæ; spinæ supra projecturas scabræ 4–10, membrana præter ad apices amictæ; foramen centrale mediocre, circulare, lacinia spinarum brevium membrana connexarum circumdatum.

Exempli maximi disci diam. 15 millim., crass. 7; radiorum longit. 17, diam. ad basim 8. Exempli minoris disci diam. 10 millim., crass. 5, radiorum longit. 9.

This species approaches very closely to *Pt. Danæ* of Verrill, described in the 'Proceedings' of the Boston Society of Natural History, 1869, vol. vii. pp. 386 & 387, and which is supposed to have been found at Rio Janeiro. It appears, however, to be provided with longer arms; the spines of the dorsal fascicles are everywhere similar and scabrous; the spines at the interradial corners of the mouth are only eight in number; and the two larger spines above them are not very long, but stout. In these respects it chiefly differs from *Pt. Danæ*. The smaller specimen, it will be noticed, is considerably shorter in the rays.

Porania antarctica, sp. nov.

Discus 5-radiatus, mediocriter crassus, latitudine radiorum longitudinem æquans; superficies infera omnino plana, supera convexa; radii aliquanto breviter conici, versus apicem acuminati; totum animal cute crassa carnosa amictum, inferne a marginibus ad sulcos ambulacrales lineariter radiatim sulcata, superne lævi spinis paucis tuberculariibus parvis prope medium supraque radios sparsim ornata; margines ventrales laterales spinis brevibus compressis ad apices truncatis, una supraquamque tessellam (quæ sulcis linearibus notatæ) laciniati; spinæ ambulacrales biseriatæ; exteriores interiorum longitudinem duplam æquantes, latæ, ad apices quadrate truncatæ, extra sulco parvo, aspectum ipsis duplicem præbente, insculptæ; spinæ interiores exterioribus porro longe breviores, multo quoque graciliores; tessella madreporiformis rotundato-ovalis, paulo propius a centro quam a margine sita; anus centralis, papillis spinæformibus circiter 12 brevissimis circumdatus. Color carneus vel sanguineus.

Diam. maxim. 90 millim., minim. 48.

This species is rather closely related to the northern *Porania pulvillus* of Müller. From this, however, it may be distinguished by the different number and character of the marginal spines; and also the ambulacral spines offer some distinctions: *P. pulvillus* has three or four spines on each of the marginal plates; and these are much smaller than the single one found in the present species. The furrow on the exterior of the outer ambulacral spines exists chiefly in the skin which clothes them. The minute tubercles on the back do not display any regular arrangement; there are about a dozen on the central portion of the disk, and a few on the short conical arms.

Astrogonium meridionale, sp. nov.

Discus 5-radiatus, latitudine radiorum longitudinis $\frac{4}{5}$ adæquans, depressus, superne infraque leviter convexus; radii ad basim lati, versus apicem aliquanto rapide attenuati; spinæ ambulacrales quadriseriatæ, intimis ad apices quam basi latioribus, quadrateque truncatis, cæteris longitudinis æqualis, simplicibus, cylindricis, ad apices rotundatis; anguli oris interradiales spina unica crassa conica, et eam infra lacinia spinarum 6–8 parvarum intus directarum muniti; radiorum et disci superficies inferior fasciculis spinarum brevium aliquanto acuminatarum ornata, fasciculis in seriebus a sulcis ambulacralibus usque ad margines radiantibus; latera seriebus duabus angustis spinarum in fasciculos parvos quadratos confertos dispositarum (20 supra radium) marginata; spinæ serici inferioris iis superficiei inferioris similes, serici superioris iis dorsi; superficies dorsalis fasciculis numerosissimis fere contiguis spinarum circiter 10–20 munita, spinis tuberculariibus, obtusis, pedunculatis; interstitia inter spinarum fasciculos supra et infra nuda, pedicellarias numerosas magnas gerentia; radii tuberculo unico magno superne terminati; tessella madreporiformis circularis, prope medium inter centrum et marginem lateralem sita; anus subcentralis.

Disci diam. 24 millim., crass. 10; radiorum longit. 29.

This species belongs to that section of *Astrogonium* which includes *A. paxillosum* as described by Gray, Proc. Zool. Soc. 1847, p. 79, but it is not so flat either above or beneath.

LEPTYCHASTER, gen. nov.

Discus 5-radiatus, compressus; radii mediocriter elongati; superficies dorsalis fasciculos pedunculatos confertos spinarum minutarum gerens; radiorum latera serie unica tessellarum tenuium transversarum lamellarium, ad ambulacra haud productarum munita; interstitia inter tessellas et ambulacra spinarum parvarum fasciculis ordinatim cum tessellis dispositis ornata; tessella madreporiformis marginalis, in angulo interradiali sita.

This genus shows more affinity to *Luidia* than to any other. It differs from it, however, in the lateral lamellar plates being covered with minute spines not extending to the ambulacra, in the absence of elongated spines, and the body being proportionally larger than in that genus.

Leptychaster kerguelenensis, sp. nov.

Discus 5-radiatus, mediocriter magnus, compressus, supra infraque planus, latitudine radiorum longitudinis circiter $\frac{3}{5}$ æquans; radii sensim attenuati, basi haud latissimi; spinæ ambulacrales graciles, quaternis vel quinis sulcis transversæ, intimis duobus longissimis, cæteris sensim brevioribus; oris anguli interradiales acuti, spinis 4–5 utrinque muniti; radiorum latera et superficies inferiores tessellis transversis, angustis, lamellaribus (quæ versus radiorum apicem fere ad spinas ambulacrales productæ, sed basim versus ab illis, spatium triangulare in angulo interradiali relinquentes, recedunt) instructa; hæ tessellæ spinis minutis scabris amictæ, ad angulos interradiales longissimæ, et versus radiorum apices sensim decurtatæ; inter eas spinasque ambulacrales fere per radiorum longitudinem totam series est unica fasciculorum parvorum spinarum brevium, sed versus radiorum basim sunt sensim series secunda, tertia et quarta, omnes ordinatim cum tessellis dispositæ; superficies dorsalis fasciculos pedunculatos confertos spinarum brevium gerens; tessella madreporiformis mediocriter magna, subovalis, marginalis, in angulo interradiali sita, et spinarum fasciculis obtecta.

Disci diam. 23 millim., crass. 8; radiorum longit. 38, diam. ad basim 13.

The fascicles of little spines on the dorsal surface are raised on short fleshy peduncles, and are very closely packed; and the madreporic plate is concealed by similar groups of spines.

Ophiuridæ.

Ophiacantha vivipara?, Ljungman.

The specimens from Kerguelen's Island appear to differ slightly in a few respects from those described by Ljungman, in the 'Œfversigt af Kongl. Vetenskaps Akad. Förhandl.' 1870, p. 471. The habitat given (Altata, on the west coast of Mexico) is probably an error, as suggested by Lütken, 'Zoological Record' for 1872, p. 448, who gives Patagonia as the home of this species. The Kerguelen examples at hand are rather smaller, the diameter of the disk being 12 millims.; but this may be accounted for by age. The conical scabrous tubercles on the disk are similar to those described by Ljungman; the oral shields are about as long as broad; the adorals more quadrangular than triangular, the angles being rounded, and they are not a great deal smaller than the oral shields, the oral sides being broader than the aboral, and the lateral margins consequently converging slightly outwardly. The lower and side arm-plates agree with the description of those of the typical form, and the spines and ambulacral papillæ also; but the dorsal ray-shields are not so broad as described by Ljungman.

Thus it will be seen that a few slight differences are found in the specimens from Kerguelen's Island, but not sufficient (at all events without comparison with the types) to warrant the separation of this variety from the Patagonian species.

Ophioglypha hexactis, sp. nov.

Discus hexagonalis, angulis radiis interruptis, ad latera leviter concavus, depressus; papillæ orales (ad quemque angulum) 7, apicalis longissima, tres utrinque sensim breviores, omnes conicæ, acutæ; scuta oralia parva, ligoniformia, manubrio brevissimo latissimoque aboraliter sito, apice ad os verso, manubrio ipso cordiformi, lateribus inferioribus convergentibus, leviter concaviusculis; scuta adoralia præcedentibus contigua, angustissima, linearia; infra illa et iis transversa oris angulos occupantia sunt scuta duo similia, oblonga, subovalia, et eorum basi unicum parvum apicali transverse situm; radii 6, elongati, longitudine quam disci latitudo duplo vel triplo majores; scuta inferiora—sextum a basi transverse latissimum, breve, margine aborali medio leviter angulato, lateribus brevissimis, rotunde truncatis, marginibus oralibus aboralibus fere similibus, sed angulo medio productiore; scuta brachialia lateralia inferne adjuncta, junctarum lineis versus brachiorum apicem sensim longioribus; scuta superiora (prope brachii medium) subquadrata, extra quam versus discum latiora, margine exteriore arcuato, interiore concavo, marginibus lateralibus rectis, versus discum leviter vergentibus; scuta aliqua propius discum forma longe diversa, sensim decrescentia, brevia, transverseque lata, subovalia, ad scuta lateralia scutulis aliis parvis irregularibus juncta; disci squamæ minutæ, numerosæ, forma et digestione irregulares; scuta radialia parva, elongato-subovalia, longe distantia; papillæ ad latera incisuræ disci minimæ numerosissimæ (circiter 40), et ad basim brachiorum superiorum est lacinia papillaris sex superioribus seriei aliæ opposita; spinæ brachiales 3

breves, crassiusculæ, haud multo acuminatæ, suprema generaliter earum longissima, infima brevissima; papillæ ambulacrales supra poros ultimos (infrabrachiales) fissuræ oris junctos 4, supra penultimum 3, paucos sequentes supra 2, et reliquos supra 1, forma diversæ, aliquæ scutis brevibus compressis similes, aliæque fere spinis brachialibus similes sed aliquanto breviores. Color superne purpureo-niger, inferne sordide albidus.
Disci diam. 21 mill.

Hab. Kerguelen's Island.

This species cannot be confounded with any which have hitherto been described; the number of the rays, the spade-like form of the oral shields, and the peculiarities of the ray-shields and spines at once distinguish it. The portion of the disk which is visible on the lower side between the arms is large, and the oral shields are only as long as the space between them and the sides of the disk.

Ophioglypha brevispina, sp. nov.

Discus latitudine radiorum longitudinis circiter $\frac{1}{3}$ æquans, compressus, ad margines leviterque supra rotundatus; papillæ orales 7–8 ad quemque oris angulum, extrema cæteris latior, his brevibus, crassis, et conicis, earum centrali ad anguli apicem longissima; dentes 4, compressi, hastulæformes, lateribus curvatis; scuta oralia longiora quam lata, triangulariter cordiformia, angulis duobus superioribus et margine rotundatis, lateribus leviter, apice orali aliquanto acute acuminatis; scuta adoralia angustissima, oralium lateribus inferioribus adjuncta, latiora intus, ubi contigua; radii 5, mediocriter elongati, paulo latiores quam crassi; scuta inferiora—sextum a basi latius quam longum, margine aborali curvato sed medio leviter acuminato, marginibus lateralibus brevissimis rectiusculis, marg. oralibus paululum excavatis, apice acuto convergentibus; scutum basale cæteris dissimile, superne sinuatum vice anguli levis, basique haud acuminatum secundum sequente majus, cæteraque versus radiorum apices sensim minora, denique minutissima: scuta brachialia lateralia inferne haud usque ad scutum quartum vel quintum adjuncta (junctura linea inde versus brachiorum apicem sensim longiore), superne haud usque ad scutum 17^{um} contigua; scuta brachialia dorsalia—sextum a basi quam longa paulo latius, arcuatum, margine exteriore rotundato, lateribus versus discum recte vergentibus; marg. interiore concavo-truncato; scuta cætera versus brachiorum apices sensim angustiora, margine interiore præsertim, et denique angulo acuto producto; disci squamæ forma et magnitudine irregulares, una centralis, et 5–6 ab illa paululum remotæ mediocriter magnæ; scuta radialia æque magna ac præcedentia, forma irregularia, contigua; papillæ ad latera incisuræ disci (in exemplo maximo) 22, (in minoribus 16–17), supremæ 6–7 cæteris majores; spinæ brachiales ternæ, brevissimæ, crassæ, paululum tantum longiores squamis ambulacralibus, his numero duabus supra scutum tertium, quartum, aliquando quintum, unica supra cætera, et supra quimque marginem pori ambulacralis primi (infrabrachialis) papillis 4–5. Color albidus.
Disci diam. 9 millim.

Hab. Swain's Bay.

The spines on the rays are very small, and similar to those described by Ljungman as existing in *O. Lymani*, which cannot be confounded with the present species, as it differs in size, length of the arms, form and size of the radial shields, &c.

XII.—*Descriptions of some new Species of Hydroida from Kerguelen's Island.* By Professor Allman, M.D., LL.D., F.R.S., P.L.S.

Seven species of Hydroida were collected recently in Kerguelen's Island while the English Transit Expedition was there. They comprise one representative of the Gymnoblastic and six of the Calyptoblastic hydroids. None of them has been previously described; and one is the type of a new genus.

I reserve figures and full particulars respecting them for my formal report upon the collection, giving merely short descriptions of them here.

Hydroida Calyptoblastea.

Genus Sertularella, Gray.

Sertularella kerguelenensis, n. sp.

Trophosome. Hydrocaulus about an inch in height, much and irregularly branched, monosiphonic; internodes with shallow annulations at their proximal ends. Hydrothecæ springing each from an internode close to its distal end, somewhat tumid below, tapering towards the summit, which is slightly incurved towards the stem; orifice with four distinct teeth.

Gonosome. Gonangia springing each from a point just below a hydrotheca, subsessile, ovoid, with a short tubular 4-toothed summit, annulated, the annulations becoming obsolete towards the base.

Hab. Swain's Bay (*Eaton*).

Nearly allied to *S. polyzonias*.

Sertularella unilateralis, n. sp.

Trophosome. Hydrocaulus about 1½ inch in height, alternately pinnate, monosiphonic. Hydrothecæ deep, divergent, and somewhat tumid below, slightly curving towards the stem above, strongly 4-toothed, all deflected towards one side of the stem and branches.

Gonosome. Gonangia arising just below the base of a hydrotheca, ovoid, with a 4-toothed terminal orifice; distal portion with wide annulations, which become obsolete towards the proximal end.

Hab. Swain's Bay (*Eaton*).

Sertularella lagena, n. sp.

Trophosome. Hydrocaulus springing from a creeping stolon, about 1 inch high, slightly branched; internodes much attenuated towards their proximal ends, where they are also marked with two or three oblique well-defined annulations. Hydrothecæ rather distant, borne by the internode close to its distal end, tumid below, becoming narrow towards the distinctly 4-toothed orifice.

Gonosome not known.

Hab. Observatory Bay, Royal Sound (*Eaton*).

Genus HALECIUM, Oken.

Halecium mutilum, n. sp.

Trophosome. Hydrocaulus about 1 inch in height, irregularly branched, the branches with two or three oblique annulations at their origin; internodes short, each carrying close to its distal end, for the support of the hydranth, a bracket-shaped process which is not produced into a tube (in this respect it resembles *H. macrocephalus*, Allman, and *H. sessilis*, Norman, which are also without the usual tubular prolongation), and is surrounded by a narrow, slightly everted punctate margin.

Gonosome not known.

Hab. Observatory Bay (*Eaton*).

? Genus CAMPANULARIA, Lam. (restrict.).

Campanularia cylindrica, n. sp.

Trophosome. Hydroid about ¼ inch high; peduncles springing from a creeping filiform stolon, each with several annulations at its proximal end, followed by a slightly corrugated space, which is succeeded by a single globular annulation bearing the hydrotheca. Hydrothecæ deep, cylindrical, with the margin deeply and strongly 12-toothed.

Gonosome. Gonangia cylindrical above, with a flat summit, tapering below towards the very short peduncle, which springs from the creeping stolon.

Hab. Swain's Bay (*Eaton*); also Baffin's Bay.

In the absence of any fuller knowledge of its gonosome, this species (which is undistinguishable from a species obtained last autumn in Baffin's Bay by H.M.S. 'Valorous') is only provisionally referred to the genus *Campanularia*.

Genus HYPANTHEA, n. g.

Trophosome. Hydrothecæ pedunculate, inoperculate, with the walls enormously thickened, and so encroaching upon the cavity as to prevent the complete retraction of the hydranth.

Gonosome. Gonangia enclosing fixed sporosacs.

Type *H. repens*, n. sp.

Hypanthea repens, n. sp.

Trophosome. Peduncles about ¼ inch high, springing at intervals from a creeping stolon, with a globular annulus just below the hydrotheca, but otherwise smooth. Hydrothecæ obconical with very oblique margin, their cavity forming distally a shallow cup, which is prolonged as a narrow cylindrical tube backwards through the axis of the hydrotheca.

Gonosome. Gonangia elongated, narrow, passing gradually into a short pedicle which springs from the creeping stolon; colonies monœcious, the male gonangia surpassing in height the hydrothecal peduncles, fusiform, opening on the summit by a narrow circular orifice; the female shorter than the male, scarcely narrowing towards the distal extremity, where is a wide orifice.

Hab. Swain's Bay (*Eaton*).

HYDROIDA GYMNOBLASTEA.

? Genus CORYNE, Ehrenb.

Coryne conferta, n. sp.

Trophosome. Hydrocaulus about 1½ inch high, much and irregularly branched, forming dense tufts; stems and branches distinctly and regularly annulated. Hydranth with about twenty tentacles.

Gonosome not known.

Hab. Observatory Bay (*Eaton*).

In the absence of the gonosome, it is impossible to ascertain whether this is a *Coryne* or a *Syncoryne*.

January 8, 1876.

XIII.—*Descriptions of some new Species of Polyzoa from Kerguelen's Island.* By Professor G. Busk, F.R.S.

The collection of Polyzoa made in Kerguelen's Island during the stay of the British Transit-of-Venus Expedition contains twenty-six species and four varieties of a twenty-seventh, all of which, excepting six species and three of the varieties, have been previously described. Most of them are common to the southern extremity of America; a few are also European, South-African, Australian, or New-Zealand species; but I do not observe a single Arctic form among them, which is rather surprising, since two or three species that inhabit the Arctic sea are known to exist in the Antarctic regions also. I fancy their absence is due to the circumstance that the collection was made exclusively in the Laminarian zone, the majority of the specimens having been obtained by a ten-tooth grapple attached to six fathoms of cord cast from the shore.

The following are the novelties. Figures of them and of some other species will be given in my full report upon the collection.

Suborder Cheilostomata.

Fam. **Salicornariadæ**.

Genus Onchopora, Bk. (restricted).

Type *Onchopora Sinclairii*, Bk.

The genus *Onchopora* as originally constituted embraced *Tubulicellaria* of D'Orbigny; but I now propose to confine it to those forms which have no tubular prolongation of the mouth, which certainly constitute a very distinct type.

Fam. **Flustradæ**.

Genus Diachoris, Bk.

Diachoris costata, n. sp.

Cells elongated oval, posterior surface glistening; aperture protected by nine to twelve acute, sometimes furcate costæ, which arch over and interdigitate in the middle line; four to six strong oral spines; a pedunculate reclinate *avicularium* on one or, more usually, both sides, near the upper part of the cell.

Hab. Swain's Bay, Kerguelen's Island (*Eaton*); Falkland Islands (*Darwin*).

The cells have some resemblance to those of *Beania australis*,

which, however, are more or less erect, are attached in a linear series to a connecting tube, and are without *avicularia*. In *D. hirtissima*, Heller, which otherwise much resembles the present species, there are no *avicularia*, and the back of the cells is set with numerous forked spines or setæ.

Fam. **Membraniporidæ**.

Genus Lepralia, Johnst.

§ *Inarmatæ*.

Lepralia Eatoni, n. sp.

Cells broadly oval, distinct; mouth semicircular, lower lip straight, notched in the middle; four to six erect oral spines. Surface of cells in interior of zoarium smooth, entire or obscurely pitted round the border, sometimes umbonate; in the marginal cells a row of distinct pores exists round the border; ovicell prominent, subglobose, with faint radiating lines in front and a row of small pores round the base.

Hab. Swain's Bay, Kerguelen's Island (*Eaton*).

Lepralia hyalina, Linn.

In addition to the varieties of this protean species given in the British-Museum Catalogue, the present collection contains three which are doubtfully referred to it.

Var. *ε. conferta* (n. var.), characterized by the crowded and compressed growth of the cells and ovicells in the central portion of the patch, giving the zoarium the aspect of a *Cellepora*, and by the wide and patulous mouth, more especially of the marginal cells.

Var. *ζ. Bougainvillei*, which appears to be identical with the form figured by M. d'Orbigny, whose name I have therefore retained.

Var. *η* (n. var.), characterized by the smaller than normal size of the cells, and by their surface being thickly studded with short spines, as is also that of the ovicells.

Suborder Cyclostomata.

Fam. **Crisiadæ**, Bk.

Genus Crisia, Lamouroux.

Crisia kerguelensis, n. sp.

Zoœcia 3–5 in each internode; branches arising from the second or third, elongated, curved abruptly forwards; mouth slightly expanded; peristome thin, membranous: oœcia

pyriform, somewhat compressed and subacuminate at top; opening behind curved, tubular. Growth lax, straggling, irregular.

Hab. Swain's Bay.

It has much of the habit and general aspect of *Crisidia geniculata*, but differs in the number of cells in the internode, the very sparse punctuation of the surface, and in the form of the œcœcia.

Fam. Tubuliporidæ.

Genus TUBULIPORA, Lam.

Tubulipora stellata, n. sp.?

Zoarium irregularly stellate; zoœcia diverging from the centre in all directions.

Hab. Swain's Bay, Kerguelen's Island (*Eaton*).

Fam. Discoporellidæ.

Genus DISCOPORELLA, Bk.

Discoporella infundibuliformis, n. sp.

Zoarium stipitate infundibuliform: zoœcia arising from the interior of the funnel; mouth expanded, with five or six acute teeth.

Hab. Swain's Bay, Kerguelen's Island (*Eaton*).

Discoporella canaliculata, n. sp.

Zoarium circular, bordered, slightly convex; tubes very irregularly uniserial, with a raised canalicular fillet on one side; interspaces cancellous.

Hab. Swain's Bay, Kerguelen's Island (*Eaton*).

XIV.—*On Mr. Carter's Objections to* Eozoon.

By Principal J. W. DAWSON, LL.D., F.R.S.

WITH reference to these, as stated in the December number of the 'Annals,' I beg to make an explanation as to matters of fact. The woodcut which Mr. Carter criticises was introduced into my little book in connexion with the *history of the discovery of Eozoon*, and as an illustration from Dr. Carpenter of the tubulated wall first recognized by him. There are in the book several other illustrations of these structures, though of course not nearly so many as my collections could furnish. The appearance of this cut as an illustration of my note in 'Nature' was an accident for which I am not responsible. I sent with the note a tracing of the structures in question from a specimen of my own; but, instead of engraving this, the Editor borrowed, as I suppose, the cut which had appeared in Dr. Carpenter's paper, and which certainly represented structures of the same character.

As to the relations of the canal-system to the tubuli, I can only say that, after studying a very large number of slices and other preparations of *Eozoon*, and comparing these with *Nummulina*, *Calcarina*, and other more modern forms, many of them prepared and mounted with my own hands, I cannot discover any greater diversity of structure than that which might be expected in a gigantic Stromatoporoid form of so great antiquity, and separated by so vast an interval of time from any thing with which we can compare it.

In any case *Eozoon* exists, and, projecting in *Stromatopora*-like masses from the weathered outcrops of our Laurentian limestones, so resembles certain well-known fossils that the geologist cannot deny it attention, however its presence may clash with any preconceived notions; and I have yet to learn that the laborious collection of such specimens, the preparation and study of hundreds of slices, and the comparison of them with the forms, recent and fossil, which they may be supposed to resemble, can be fairly stigmatized as "wild speculation." It is certainly a speculation which makes more demands on time, muscle, and eyesight than some others that can be mentioned; and I only regret that I am unable adequately to present to naturalists the materials, almost a museum in themselves, that have accumulated on my hands in the study of this ancient fossil, and which have testified more and more not only to its importance and wide distribution, but to its organic nature. I am not a specialist in the study of the Foraminifera any further than the Postpliocene species of Canada and their successors in the Gulf of St. Lawrence are concerned. The study of *Eozoon* was forced on me by circumstances and by its evident geological significance, and has been pursued as specimens presented themselves and as time permitted, but, I can honestly affirm, without any desire to support any preconceived hypothesis or to further any current speculation. On the one hand, I can plainly perceive the use which may be made of it to favour theories of development in which I have no faith; on the other, I can equally see its inconsistency with the exaggerated antiquity claimed by many for the human period in geology; but the investigation and statement of facts must be independent of all consideration of such consequences.

McGill College, Montreal,
Dec. 24, 1875.