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MAGAZINE OF NATURAL HISTORY,

INCLUDING

ZOOLOGY, BOTANY, AND GEOLOGY.

(BEING A CONTINUATION OF THE 'MAGAZINE OF BOTANY AND ZOOLOGY,' AND OF LOUDON AND CHARLESWORTH'S 'MAGAZINE OF NATURAL HISTORY.')

CONDUCTED BY

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1844.

granules which are usually regularly arranged. There is some difference in their form at different stages, as well as in the different species of *Fucus*. Figs. 9, 10, 11 represent those of *F. vesiculosus*; fig. 12 those of *F. nodosus*.

The presence of these bodies being so constant, it is not unreasonable to suppose that they perform some important function. Those who believe that impregnation is necessary in cellular plants, in the same sense at least as in the higher tribes, may probably consider that they are representatives of the anthers, and perform similar functions.

A few attempts were made for the purpose of ascertaining if they would germinate, by treating them in the same way as the *basisperms* of *F. canaliculatus* already mentioned. The experiments failed, and the difficulty seems to be to preserve the water at a proper and uniform temperature, for, owing to the delicacy of their structure, they are easily affected by changes. I believe, however, that they afford one means by which the Fuci are propagated, for the reason that the structure of the reproductive organs of *Alaria, Laminaria,* &c. is essentially that of *acrosperms*: this will be more particularly alluded to in a subsequent paper. The true species of *Fucus* may be considered as *heterospermous,* and it will be shown afterwards that other genera are *basispermous* and others *acrospermous*.

[To be continued.]

III.—*Descriptive Catalogue of the Zoophytes from the Crag.*

By S. V. Wood, Esq., F.G.S.

Mr. Richard Cowling Taylor, in a very valuable paper upon British "Antediluvian Zoology and Botany," communicated to the 'Magazine of Natural History' in 1830, was, I believe, the first to draw attention to the variety and interesting forms presented by the Corals of the Crag, and many very good figures are given by him in the above periodical, but unaccompanied by generic or specific characters.

In the following Catalogue I have endeavoured to furnish a list of these Polypifera, which are principally derived, as might be expected, from the deposit that has been termed *par excellence* "Coralline" Crag. This formation in the neighbourhood of Orford presents a close analogy to some of the coral reefs now forming, being composed almost entirely of corals, and sufficiently indurated to serve as a building-stone.

Among the corals of the crag we are presented with as great anomalies as among the Mollusca; recent species strictly British being associated with genera wholly unknown in a living state, as for example, *Fascicularia* and *Theonoa*. Although inferences re-

specting the temperature of the coralline-crag sea must be highly conjectural where such incongruous forms are associated, I should still be disposed to adhere to the opinion I have already expressed as to the probability of its approximating that of the coast of Portugal. A current of water like that which now rolls through the Gulf of Florida may have introduced *Pyrula, Pholadomya, Lingula* and other tropical forms, or these genera, at the time of the coralline crag being deposited, might have been the only living representatives of a tropical fauna otherwise extinct.

The fauna of the red crag must, I think, be regarded as indicating a temperature much lower than that which existed during the deposition of the coralline crag. The general characters of its Polypifera agree with those of our own seas, for I consider my red-crag specimens of *Theonoa* and *Fascicularia* to have been introduced into this deposit from the underlying coralliferous beds. The greater part of my red-crag corals are attached to the mouths of univalves or the interior of bivalves.

I have not as yet seen any corals from the mammaliferous crag.

Though many of the crag polypidoms are in a very perfect condition, others, particularly among the *Escharidæ,* from various causes, have undergone structural alterations which render their correct determination often a matter of great difficulty. *Flustra membranacea,* for example, is generally found with nothing but the bare walls of its cells remaining, and other species have had prominent parts entirely removed; these alterations are wholly independent of that change which takes place in the external covering of the cells during their progress to maturity, so ably pointed out by M. Edwards in his essay upon the *Escharidæ,* and which may be seen in various cells on the same specimen.

The following are from my own cabinet except where otherwise expressed.

Class ZOOPHYTA.

Fam. LAMELLIFERÆ.

Balanophyllia, n. g.

Polypidom permanently fixed, simple, exterior striated longitudinally; disc stellated, with a central style; lamellæ radiating in trios, converging to a point at the circumference.

This differs from *Caryophyllia* in the tripartite arrangement of the lamellæ, and from *Dendrophyllia* in not being dendroidal.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Balanophyllia calyculus, n. s.		Sutton.	

"Polyp. subcylindrical; disc subovate, cup-shaped, with an elongate central style; lamellæ radiating and fasciculated, sides of lamellæ finely granulate, exterior rugosely striate."—*Mag. of Nat. Hist.* vol. iii. 1830, p. 272. f. 60. *d.*

The disc of this coral is partially bisected by a central style, around which are arranged twelve rays, each ray composed of three lamellæ, which converge to a point as they approach the circumference. In the intervals formed by the divergence of these rays are placed twelve other rays also tripartite, and the smaller spaces between the terminations of these twenty-four rays are each bisected by a single plate. One in every three of the thirty-six lamellæ attached to the style is elevated above those contiguous to it. From the extreme rarity of unmutilated specimens, I am unable to state whether the number of rays be constant in this species, but its form varies so greatly that I should presume some variation in the number of its parts to be very probable. It is occasionally much depressed, the base spreading to more than twice the diameter of the disc; sometimes it is a reversed cone, the disc exceeding the base tenfold, such variation appearing to depend upon its place of attachment; it often occurs much elongated, generally single, never branched, though occasionally three or four individuals are grouped together.

The lamellæ appear promiscuously arranged where the disc is much injured, which is generally the case with crag specimens. The species is also found in the tertiary formation of Touraine: a specimen in my possession, from this locality, has a portion of a thin periostracum remaining upon the exterior.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Fungia semilunata, *Lamk.* (*2nd edit. Hist. des An. sans Vert.* vol. ii. p. 371).	Iken.		

I am only acquainted with two specimens of this species, one in the cabinet of Mr. Bunbury, and the other in the possession of Mr. Wm. Colchester.

1. Turbinolia Milletiana, *De France* (*Dict. des Sci. Nat.* vol. lvi. p. 93. Turbinolia ——? *Taylor, Mag. Nat. Hist.* vol. iii. p. 272. f. 60. *c*).	Sutton.	Sutton.	
1. Cladocora cariosa, *Lonsdale MS.* (Madrepora cariosa, *Goldf. Pet.* t. 8. f. 8; *De Blainv. Dict. des Sci. Nat.* t. 60. p. 355).	Ramsholt.	Sutton.	

Class BRYOZOA.

Fam. Crisiadæ.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Crisia eburnea, *Lamx.* (*Expos. Méth. de Pol.* p. 6; *Johnston, Brit. Zooph.* p. 262. pl. 31. f. 3, 4).	Sutton.	.....	Britain.
2. — luxata? *Flem.* (*Johnston, Brit. Zooph.* p. 262. pl. 31. f. 5, 6).	Sutton.	.....	Britain.

Only one fragment, which however differs from the description at the above reference. My specimen has the tubes alternate, depressed, suborbicular; surface rugose, probably porous; the cells are not adnate, but distant from each other rather more than the diameter of the tubes.

Fam. TUBULIPORIDÆ.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Fascicularia aurantium, *M. Edw.* (*Lyell's Elements*, p. 304. edit. 1838, var. *a*; *Taylor, Mag. of Nat. Hist.* vol. iii. 1830, p. 272. f. 61; *id.* var. *β*. f. 63).	Aldbro'.	Sutton.	

Abundant in the coralline crag. A specimen in my possession measures six inches and a quarter in diameter.

1. Theonoa? globosa (Blumenbachium globosum, *Koenig, Icon. Foss.* pl. 5. f. 69. Theonoa cristata, *M. Edw. MS. Taylor, Mag. Nat. Hist.* vol. iii. 1830, p. 273. f. 64 & 65).	Sudbourn.	Sutton.	

In its young state this coral is of a discoidal form with a very short pedicel of attachment; it then resembles a reversed specimen of *Polyporus*, and rarely attains half an inch in diameter. The upper surface exhibits the openings of numerous subpolygonal tubes which are most abundant towards the margin; these tubes converge towards the pedicel as a common centre, and their direction may be sometimes traced along the under surface, which is smooth and entire. The polygonal form of the tubes is probably the result of lateral compression.

The mode of increase appears to be by gemmules formed upon or near the margin of the disc; as these enlarge, their horizontal extension is interrupted by the mutual approximation of their edges, which consequently bend upwards, except at the points furthest from the centre of the disc upon which they are formed; and here, as there is nothing to prevent the free extension of the gemmules, they project beyond the parent disc, and in a slightly downward direction: each disc is thus twisted into a triangular or subquadrangular form, producing a sort of depressed compartment by the union of the under surfaces which project around in the form of a crest. In this manner the shape presented by the adult coral is ultimately produced, and is either hemispherical or subglobular, according to its place of attachment. This polypidom has sometimes a radius of more than two inches.

1. Heteropora dichotoma, *De Blainv.* (*Man. d'Actinol.* p. 417. Ceriopora dichotoma, *Goldf. Pet.* t. 10. f. 9. var. *β*. *d—f*).	Ramsholt.		

What I conceive to be the young state of this coral is a small

attached hemispherical body, consisting of a congeries of tubes radiating from a common centre. This increases cylindrically and branches; a longitudinal section then displays the tubes, arising at the first centrally with a vertical direction, but afterwards bending suddenly at nearly a right angle to reach the exterior; a transverse section would consequently divide the tubes throughout a portion of their extent longitudinally, while in the centre of the branch it would cut them transversely. The tubes are subpolygonal with circular openings, many of which are nearly closed, owing probably to the more extended lives of some of the polypes.

This polypidom attains a height of several inches.

	Cor. Crag.	*Red Crag.*	*Recent.*
2. Heteropora septosa (var. *α.* polymorpha; var. *β.* pustulosa).	Sudbourn.	.....	Britain.

Polypid. boletiform, irregular, sometimes investing; pores irregular.

One fossil specimen invests an *Emarginula,* and corresponds with a recent British species in my possession upon an *Arca lactea.*

Var. *β.* is globose and pustuliform; pores irregular, large and small, subpolygonal; a section shows rows of tubes long and straight, with transverse partitions like those in *Chætetes.*

1. Diastopora meandrina, n. s.	Sutton.		

Polypid. globosely foliaceous; foliations anastomosing or meandering with two layers of opposite cells; cells tubular, slightly raised, or rather strongly inclining towards the plane of axis, irregularly quincunxial; aperture orbicular; surface granular; radius one inch and a half.

Sect. *α.* adnate.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Tubulipora obelia, *Johnston* (*Brit. Zooph.* p. 269. t. 30. f. 7, 8).	Sudbourn.	Sutton.	Britain.
2. — patina, *id.* (*Brit. Zooph.* p. 267. t. 30. f. 1—3).	Sudbourn.	Sutton.	Britain.
3. — serpens, *id.* (*Brit. Zooph.* p. 268. t. 30. f. 4—6).	Sudbourn.	.....	Britain.
4. — palmata, n. s.	Sudbourn.	Sutton.	

Polypid. adnate, divergent; branches enlarging, palmate, truncate; surface rugose, porous, with numerous dwarfish tubular cells, increasing in number (as it diverges) from one or two to seven or eight.

Extent of polypidom three-eighths of an inch.

5. — repens, n. s.	Sutton.	Sutton.	

Polypid. adherent by a narrow base, linear, dichotomously or irre-

gularly branched; upper surface studded with tubular curved cells irregularly quincunx, seldom more than three tubes in the width of each branch.

Polypidom spreading one inch, diameter of branches $\frac{1}{20}$.

Sect. β. free.

	Cor. Crag.	*Red Crag.*	*Recent.*
6. Tubulipora ? intricaria, n. s.	Sutton.		
7. — ? arborea, n. s.	Sutton.		
8. — ? agaricia, n. s.	Sutton.		

The above three species do not strictly belong to this genus, but I have placed them here provisionally until better specimens and more information be obtained respecting them.

1. Idmonea disticha, *De Blainv.* (Retepora disticha, *Goldf. Pet.* t. 9. f. 15).
   Sutton.

1. Discopora hispida, *Flem.* (*Brit. An.* p. 530; *Johnston, Brit. Zooph.* p. 270. t. 30. f. 9—11).
   Sudbourn. | Sutton. | Britain.

1. Alecto gracilis ? *M. Edw.* (*An. des Sci. Nat.* 1838, tom. ix. t. 16. f. 2. Alecto —— ? *Woodward, Geol. of Norf.* t. 4. f. 16. Chalk).
   Sutton.

My only specimen is not in good preservation.

Filicella, n. g. (*filum*, a thread, and *cella*).

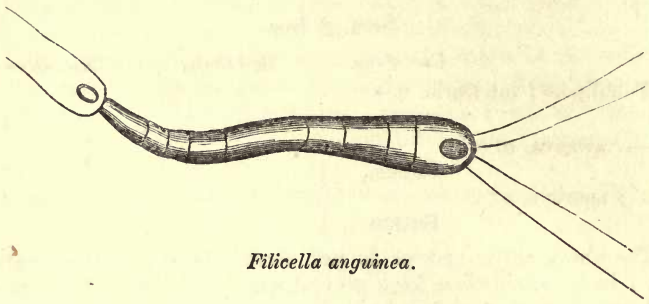
Gen. Char. Cells filiform, distinct, adnate, united at the extremities; dichotomous aperture subterminal, not projecting.

1. Filicella anguinea, n. s.
   Ramsholt.

Repent, snake-like, elongated, subcylindrical, or rather club-shaped, tubulous, glossy, united at the extremities, adnate, dichotomous; aperture oval, rather depressed, subterminal.

I propose this genus for the reception of a very minute zoophyte from the coralline crag which much resembles *Alecto*, but differs in being more elongated, less cylindrical, and with its peritreme even with the cell; it does not adhere by an expanded side like *Alecto*, but is filiform throughout, the cells are more distinctly separated, and are but slightly attached (laterally) to the surface of the interior of an *Echinus*. The cell is compact, smooth, not porous. This is the smallest zoophyte I am acquainted with, being scarcely visible to the naked eye.

Dimensions, one-fifth of a line in length; diameter of the widest part near the mouth of the cell about the eighth part of its length, and this twice the width of the lower portion adjoining its cognate cell. The annexed drawing was made with the camera lucida.



Filicella anguinea.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Hornera reteporacea, *M. Edw.* (*An. des Sci. Nat.* vol. ix. t. 10. f. 2).	Sutton.	Sutton.	
2. — striata, *M. Edw.* (*An. des Sci. Nat.* vol. ix. t. 11. f. 1).	Sudbourn.		

The figure above referred to must have been made from an old specimen in which the intermediate pores are closed up; when young and perfect, the superior surface is striated and porous between the cells.

Fam. Escharidæ.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Retepora cellulosa, *Johnston* (*Brit. Zooph.* p. 297, vignette no. 46. p. 283; *M. Edwards, 2nd edit. of Lamarck,* tom. ii. p. 276; *Lamouroux, Exp. Méth. des Polyp.* pl. 26. f. 2).	Sudbourn.	Sutton.	Britain.

The crag coral corresponds with the British var., and may probably be distinct from that found in the Mediterranean, whose meshes are much larger. This latter is also supposed by M. Edwards to be distinct from the one quoted by him as from the Indian Ocean.

1. Eschara monilifera, *M. Edw.* (*An. des Sci. Nat.* vol. vi. pl. 9. f. 1).	Ramsholt.	Sutton.	
2. — pertusa, *M. Edw.* (*An. des Sci. Nat.* vol. vi. pl. 10. f. 3).	Sudbourn.		
3. — Sedgwickii, *M. Edw.* (*An. des Sci. Nat.* vol. vi. pl. 10. f. 5).	Sudbourn.		
4. — incisa, *M. Edw.* (*An. des Sci. Nat.* vol. vi. pl. 9. f. 2).	Sudbourn.		

I have not seen this species.

	Cor. Crag.	*Red Crag.*	*Recent.*
5. Eschara foliacea, *Johnston* (*Brit. Zooph.* p. 297. t. 40).	Sutton.	.....	Britain.
6. — porosa? *M. Edw. An. des Sci. Nat.* vol. vi. pl. 11. f. 7.	Sudbourn.		

The cells of this are found open.

1. Ulidium Charlesworthii (Melicertina Charlesworthii, *Ehrenb.* Melicerita Charlesworthii, *M. Edw. An. des Sci. Nat.* vol. vi. pl. 12. f. 19).

Sutton.

Melicerta has long been used as a genus in the class Crustacea, *Melicertum* in Acalepha. *Melicerita* as stated by Ehrenberg is not correct. *Melicertina* is objectionable, as the *ina* is generally used for a family termination. I therefore propose the name *Ulidium* (*οὐλίδιον, a scar*), from its close connexion with *Eschara*.

1. Cellaria fistulosa (Tubularia fistulosa, *Linn.* Cellaria salicornia, *Lamx. Exp. Méth. des Polyp.* p. 5. Farcimia fistulosa, *Flem. Brit. An.* p. 534).

Sutton. | Walton Naze. | Britain.

Articulations cylindrical; cells elongato-rhomboidal, immersed; sides elevated, sharp; larger opening transversely lunate, unarmed; smaller opening above transverse, semilunate; surface of cells porous.

The cells occasionally vary in shape upon different articulations of the same specimen, like those represented by Ellis, Coral. pl. 23. D., some being of a subhexahedral form with nearly parallel sides. The lower part of the larger opening (the operculum) is elevated in the centre, projecting outwards; this in the fossil is occasionally separated into denticulations: the smaller opening above is generally transverse, sometimes lunate, and often orbicular in worn specimens. In those most perfect the smaller opening is a narrow transverse fissure close to the partition, as may be seen in dead specimens of the recent species, and is probably accidental in all. Fragments of this fossil are abundant, but the articulations are generally separated.

2. — crassa, n. s.

Sutton. | Sutton.

Articulations ovate; cells rhomboidal, immersed, plain; sides elevated, sharp; aperture transverse, sublunate.

The cells in some are hexagonal, and the aperture appears as if armed with four teeth, two proceeding from the upper edge pointing downwards, and two from the lower, more obtuse, pointing upwards; these are probably produced from decomposition: the smaller opening above the mouth varies in shape, being sometimes orbicular, sometimes lunate, and is also in all probability accidental.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Lunulites alveolatus, n. s.			
	Sutton.	Sutton.	

Polypid. cupuliform, convex above, concave beneath, thick; cells radiating in straight lines, open ?, subquadrate; margin without denticulations; surface beneath striated and porous ?

2. — Owenii, *Gray* (*Spicilegia Zoologica*, p. 8. t. 3. f. 15).			
	Sutton.	.....	Coast of Africa.

Fam. Celleporidæ.

1. Cellepora pumicosa, *Johnston* (*Brit. Zooph.* p. 273. t. 32. f. 1—3).			
	Sutton.	Sutton.	Britain.

Var. α. irregularis.
Var. β. globularis.
Var. γ. pustulosa. This always envelopes a univalve shell.

Some specimens of *irregularis* are pierced the entire length, as if originally grown upon the stem of a sea-weed.

2. — cellulosa (Scyphia cellulosa, *Goldf. Pet.* t. 33. f. 12).			
	Sutton.		
3. — ramulosa ? *Johnston* (*Brit. Zooph.* p. 274. pl. 32. f. 4).			
	Sutton.	.....	Britain.
4. — coronopus, n. s.			
	Ramsholt.		

Polypid. dichotomously branched; branches subcylindrical, tapering, terminations not compressed.

1. Lepralia variolosa, *Johnston* (*Brit. Zooph.* p. 278. t. 34. f. 4).			
	Sutton.	Walton Naze.	Britain.
2. — ciliata, *Johnston* (*Brit. Zooph.* p. 279. t. 34. f. 6).			
	Sudbourn.	.....	Britain.

The spines are gone, but there are five short tubes (which I presume to be their remains) occupying about two-thirds of the peristome.

3. — puncturata, n. s.			
	Sudbourn.	Sutton.	

Polypid. discoidal, radiating; cells subcylindrical, convex, porous and granular, with generally six rows of punctures; aperture transverse, sublunate, bordered and edentate, with an open ? ear-like process on each side of the mouth.

On various shells.

4. — umbonella, n. s.			
	Sudbourn.		

Polypid. discoidal, radiating; cells depressed, subtrapezoidal, slightly granular, separated by one row of large oblong perforations, two or three on each facet; aperture transverse, sublunate; operculum worn into denticulations; a prominent umbo below the aperture.

On a *Terebratula*.

Cor. Crag. *Red Crag.* *Recent.*

5. Lepralia abstersa, n. s.

| Walton Naze. |

Polypid. ramose; cells elongato-ovate, ventricose, smooth; aperture subterminal, subcircular, depressed.

One specimen on a *Pholas*.

6. — catena, n. s.

Sutton. | |

Polypid. cateniform; cells ovate, costated; costæ five, lateral one terminal; aperture suborbicular, armed; three teeth?

One specimen on an oyster.

7. — geniculata, n. s.

Sutton. | Walton. | Mediterran.

Polypid. discoidal, radiating; cells ovate, slightly granular, obtusely costated, lines of punctures between the costæ radiating; aperture semiovate, bordered, armed with five denticulations.

On various shells.

The denticulations have disappeared, leaving so many short tubes. This is identical with a recent species brought from the Mediterranean by Mr. E. Forbes.

8. — pyriformis, n. s.

Sudbourn. | |

Polypid. radiating; cells elliptical at the upper part, or rather pear-shaped; aperture transverse, semiovate, unarmed.

On a *Terebratula*.

9. — mammillata (Cellepora mammillata, *De Blainv. Man. d'Actinol.* p. 444).

Sutton. | |

Polypid. adnate; cells subconical, rugose; aperture terminal, suborbicular; peritreme thickened and armed with five long and sharp spines, occupying three-fourths of the anterior portion, one obtuse spine at the posterior part; base of the cell punctured.

On various shells and pebbles. Named by De Blainville but not described.

10. — unicornis? *Johnston MS.* (Lepralia coccinea, *Johnston, Brit. Zooph.* p. 278. pl. 34. f. 1—3, bad).

Sutton. | ..... | Britain.

The aperture of this has vestiges of spines.

The ovarian capsule above the aperture, observable in many specimens of this genus, will occasionally alter the shape of the aperture, and is itself sometimes worn into an opening.

1. Catenaria dentata, n. s.

| Walton Naze. |

Cells slender, ovato-lanceolate; aperture oval, margin dentate.

Specimen attached to a *Pholas*. It is dichotomously and divari-

cately branched, emitting a cell sometimes from both sides, at others only from one; it somewhat resembles *Hippothoa lanceolata*, Gray, 'Zool. Misc.' 35, but differs in having the margin of its aperture armed with eight or nine long denticulations curving inwards. When magnified, the surface of the cells appears finely granulated.

Cor. Crag. *Red Crag.* *Recent.*

1. Flustra distans, *Johnston* (Flustra Peachii, *Couch, Cat. of Zooph. of Cornwall*).
| Sutton. | Britain.

Identified by Dr. Johnston.

2. — membranacea, *Johnston* (*Brit. Zooph.* p. 287. t. 37. f. 1—3).
Sutton. | Sutton. | Britain.

This is generally found with the cells open and nothing but the partition-walls remaining. Specimens from the coralline crag are however occasionally met with quite perfect, showing the form of the mouth and with the obtuse spines at the corner of the cells.

3. — coriacea, *Esper*.
Sudbourn. | |

Identified by Dr. Johnston.

4. — trifolium, n. s.
Sutton. | |

Polypid. adnate, discoidal, radiating; cells elongato-hexagonal; surface rugose; centre depressed; aperture irregularly tripartite, unarmed.

On various shells.

5. — holostoma, n. s.
Sutton. | |

Polypid. adnate; cells radiating, irregular, bordered; centre depressed; surface rugose; aperture subcircular, unarmed.

The cells in form somewhat resemble those of *F. flabelliformis*, Lamx., 'Expos. Méth.' p. 113. pl. 76. f. 11—13, but it is an encrusting coral, and the interior of the cells are not parallelograms, and the aperture not so central. On various shells.

These last two are probably altered forms.

1. Membranipora pilosa? *Auct.* (*Johnston, Brit. Zooph.* p. 280. pl. 34. f. 10—12).
| Sutton. | Britain.

The perforation through the hollow base is visible, but there are no denticles remaining, and as such I consider it a doubtful identification.

2. — membranacea, *Johnston MS.* (Flustra tuberculata, *Johnston, Brit. Zooph.* t. 34. f. 9. Flustra membranacea, *Müller, Zool. Dan.* Flustra unicornis, *Flem. Brit. An.* p. 536).
Sutton. | ..... | Britain.

Fam. Orbitulitidæ.

1. Orbitulites coscinodiscus, n. s.
Sutton. | |

Polypid. discoidal, smooth, flat; cells concentric, linear, and radiating in straight lines.

The cells differ in form and arrangement from those of *Orb. complanata.*

Ord. Carnosa.

Fam. Alcyonidiadæ.

	Cor. Crag.	*Red Crag.*	*Recent.*
1. Alcyonidium circumvestiens, n. s.	Sutton.	Sutton.	

Polypid. enveloping univalve shells, surface papilliform and rugose.

This covering attains a thickness of more than half an inch, and can be partially removed in layers; in some instances the univalve is entirely absorbed. Not restricted to one species of shell.

Class AMORPHOZOA.

1. Grantia compressa, *Johnston* (*Brit. Sponges*, p. 174. pl. 20. f. 1).
| Walton Naze. | Britain.

Three very minute specimens, found by Dr. Johnston adhering to the interior of a shell.

Class LITHOPHYTA.

1. Nullipora.
Sutton. | |

IV.—*On the existence of Branchiæ in the perfect state of a Neuropterous Insect,* Pteronarcys regalis, *Newm., and other species of the same genus.* By George Newport, Pres. Ent. Soc. &c.*

Having been favoured by Mr. Barnstone with a specimen of that magnificent Neuropterous insect, *Pteronarcys regalis,* captured by himself in the high latitude of 54° on the Albany river, North America†, and preserved in spirit, I have been agreeably surprised at finding in the perfect state of this species *a series of thoracic branchiæ,* a condition of the external respiratory organs that is usually met with only in the preparatory larva and pupa states of insects. The persistence of external branchiæ in a winged insect, fitted in every other way for flight in the open atmosphere, like other species of the order to which it belongs, is an anomaly that requires a close attention to its habits to explain. This is the only genus, so far as I am aware, in which the branchial form of the respiratory organs, so common in the larva and pupa of the

* Read at the meeting of the Entomological Society, December 4, 1843.

† It was brought by Mr. Barnstone with a large collection of Canadian insects which he had recently captured, and has since presented to the British Museum.