Note on the Occurrence of the Crustacean *Scyllarus Arctus* in England. By JONATHAN COUCH, Esq., F.L.S.

[Read Dec. 5, 1861.]

THE *Scyllarus Arctus* has been of too rare occurrence in Britain to have acquired an English name; and, indeed, it appears uncertain whether hitherto its existence on our shores has ever been placed beyond a doubt. It has been said that one example, and perhaps two, have been found in Mount's Bay, in Cornwall; but as the same authority reports it to have its residence in shallow water, where it lives in a burrow formed by itself, and we have proof that it has been carefully sought for in vain in the district referred to, there seems to have been some reason hitherto for retaining a distrust of the evidence which could only rest on the supposed occurrence of examples twice in the space of a hundred years. This difficulty, however, can no longer be felt; and I have the satisfaction of reporting to the Linnean Society the occurrence of a specimen, which was obtained at a distance of about a couple of leagues from this place (Polperro). The discovery itself is due to the diligence of Mr. William Laughrin, A.L.S., whose practice of examining the stomachs of fishes has been long continued, and for scarce specimens of Crustaceans highly successful; but it was only at the beginning of this present November (1861) that he was so fortunate as to find the Crustacean here mentioned. It was in the stomach of a Cod, which was taken with a line by a fisherman of Polperro, at the depth of about forty fathoms; and from this depth of water we learn that this Crustacean is not so entirely, if at all, an inhabitant near the shore and in shallow water, as has been supposed. This example of a rare Crustacean had suffered very slightly from the digestive action of the stomach; and in its prison it had for its companions two specimens of *Alpheus ruber*—a species which appears to exist in considerable numbers on the ground frequented by the codfish at the depth above specified.

On a New Genus of *Tunicata* occurring on one of the Bellona Reefs. By JOHN DENIS MACDONALD, R.N., F.R.S., Surgeon of H.M.S. 'Icarus.' (Communicated by the Secretary.)

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AMONGST many interesting objects of natural history obtained by H.M.S. 'Herald' during her visit to the Bellona Reefs (lat. 21°

51' S., long. 159° 28' E.) was a very remarkable Ascidian, which, as it appears to be quite new, merits brief notice.

The external appearance of the animal so much resembled the nidamental case of some large Gasteropod, affixed to a block of coral, that no suspicion of its real nature was entertained until it had been minutely examined. Soon, however, it was ascertained that within a thin coriaceous test, fashioned like a snuff-box, with a perfectly applied lid, a little tunicary was enclosed, enjoying the power of opening and closing the operculum or door of its retreat at will.

The case (figs. 1 & 2) was about $\frac{1}{2}$ an inch in length, and over $\frac{3}{5}$ of an inch in breadth, though rather fuller in front than behind. The attached side was flat (fig. 2), but the free surface (equivalent to the right side of the recumbent animal) was convex and rounded (*d*); so that the aperture at the anterior end presented a D-shaped or semicircular figure (fig. 4); and this was accurately fitted with a lid of a corresponding shape. The free margin of both the aperture and the lid was beset with minute and rigid spines, having an inward curvature protecting the entrance from invasion. In continuity with these margins a thin layer of test-substance was traceable as a kind of conjunctiva (fig. 4 *c*), upon the anterior part of the contained animal, to the borders of the branchial (*d*) and cloacal openings (*e*), which occupied the same plane in the mouth of the cell, being merely divided by a narrow transverse depression. Both these openings were simple though somewhat puckered in the contracted state, and encircled at a little distance from the free edge by a broad band of pale-red pigment.

The mantle was closely applied to the inner surface of the test, without, however, giving off any palliovascular processes. A dark-coloured reticulation, visible through the outer epithelium, marked off the distribution of the blood-vessels; and the disposition of the internal organs was traceable through the semitransparent tissues (fig. 3).

Not wishing to destroy the specimen, I did not determine the arrangement of its respiratory membrane; but I observed that the branchial orifice was guarded by a circle of simple tentacula (fig. 4 *d*).

The œsophagus was short, soon opening into a subglobular stomach with thick glandular walls thrown into longitudinal folds. The intestine proceeded from the posterior end of the stomach, around which it turned inferiorly, and having coursed forwards to within a short distance of the cloacal opening, it ended in the vent.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

The heart (fig. 3 *d*) lay in front of the stomach, extending into the interval between that organ and the œsophagus.

The follicles of the testicle skirted the convexity of the intestinal curve, and immediately superficial to these were the sacculi of the ovarium. The ducts, however, converged from the hollow of the intestinal loop, and led forwards beside the rectum (fig. 3 *c*).

Perophora is a pouch-bearer; but the present genus, being a little pouch in itself, may be called *Pera*; and the species *Huxleyi*, after one who, above all English observers, has added most to our precise knowledge of the *Tunicata*.

The original specimen from which this imperfect description was taken is now in the possession of Professor Huxley; and I may mention, in conclusion, that Professor Claparède suggested to me the existence of a similar operculate condition of the test in the case of the so-called house of *Appendicularia*, in which, however, I believe each aperture is furnished with a distinct valve.

REFERENCES TO THE FIGURES.

Fig. 1. Front view of the animal with the lid closed.

Fig. 2. Side view of ditto (nat. size).

Fig. 3. Posterior view magnified, with a portion of the test removed to show the internal organs.

„ *a.* Mantle detached from the test below.

„ *b.* Stomach.

„ *c.* Intestine.

„ *d.* Heart.

„ *e.* Testicular follicles.

„ *f.* Ovarium.

„ *g.* Ducts.

Fig. 4. Front view magnified, with the operculum thrown open.

„ *a.* Operculum.

„ *b.* Body of the cell.

„ *c.* Conjunctive membrane.

„ *d.* Branchial orifice with tentacula appearing.

„ *e.* Cloacal orifice.

„ *f.* Occluser muscular fibres.