

I am led on to advert to his further suppositions regarding the assumed developmental or transition states thereof drawn by him.<sup>1</sup> Beyond any question Greef's figures 26, 27, and 28 represent nothing else than Barker's *Diplophrys Archeri*,<sup>2</sup> and nearly equally certainly Greef's figure 29 represents my own *Cystophrys oculca*.<sup>3</sup> The nearly orbicular (Fig. 26) or broadly elliptic (Figs. 27 and 28) figure of *Diplophrys* is there, the large characteristic conspicuous oil-like, amber coloured, refractive body, with the same little granular bodies, are there, and the two pencils of delicate pseudopodia emanating from opposite ends, but set slightly obliquely to one another, are there,—all just as they occur in this very marked little form, as it has presented itself in gatherings made from the east, south, west, and centre of Ireland. But although this wide distribution must be attributed to it, it is always seemingly scanty, and rarely encountered; this may indeed be, in part, due to its great minuteness. Perhaps Greef's otherwise excellent representation of this form would have been improved if he had indicated that sometimes the pseudopodia slightly subdivide dichotomously, and occasionally show more or less of a changeable dilatation at the point of ramification or along the length of a pseudopodium. I myself have never seen anything like Greef's figure 25.

(To be continued.)

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On a New POLYZOON, "VICTORELLA PAVIDA," from the VICTORIA DOCKS. By WM. S. KENT, F.Z.S., F.R.M.S. of the Geological Department, British Museum. With Plate IV.

In November, 1868, I briefly referred, in the pages of 'Science Gossip,' to a representative of the Ctenostomatous Polyzoa, taken by myself in the brackish waters of the Victoria Docks.

Though at the time possessing strong reasons for premising the species to be new to science, no name was conferred upon it, and it was rather brought forward with the view of attracting attention and possibly of recognition.

Having been fortunate enough this last autumn to secure fresh samples from the same locality, and feeling now convinced that the form represents not only a new species, but moreover, serves as the type of a new genus, and even family,

<sup>1</sup> L. c. t. xxvii, figs. 25, 26, 27, 28, 29.

<sup>2</sup> Proceedings Dublin Microscopical Club, in 'Quart. Journ. Micr. Science,' loc. cit.

<sup>3</sup> Ante in this paper, p. 265.

I proceed to describe it at greater length, and to bestow upon it a name which shall distinguish it from its congeners.

The sub-order of the *Ctenostomata*, in accordance with the system of classification most recently accepted, is subdivided into the two families of the *Alcyonidiadae* and the *Vesiculariadae*. The first of these is distinguished by the polypidom being sponge-like, fleshy, and irregular in shape, and in which the cells furnished with a contractile orifice are immersed. In the second the polypidom is plant-like, horny, and tubular, having free deciduous cells, whose extremities are flexible and invertile.<sup>1</sup> The species to which I would now direct attention, though possessing the cirlet of setæ characteristic of the order, secretes a polypidom referable to neither of the two forms just indicated.

Its affinities with the *Vesiculariadae* are the most marked, but, as will be seen on reference to the accompanying plate, the contour of the polypidom is entirely irregular, and wholly wanting in that uniformity and complexity of structure so characteristic of that family, possessing neither the main rachis nor the distinct deciduous cells by which all the members of the *Vesiculariadae* are so readily distinguishable.

Hence, it appears essential that another family should be specially constructed for its reception, and, taking into consideration the uniform structure of the polypidom, I propose the acceptance of the term *Homodiatidae* as a family name expressive of that same structure. The diagnosis of this third family may be briefly summed up as follows:

Polypidom horny, tubular; cells not deciduous nor separately distinguishable, but throughout freely communicating, their terminations flexible and invertile. The generic name I propose for this new polyzoon is *Victorella*, a somewhat lame acknowledgment of the great variety of animal life which the locality from whence it was procured has afforded me. The same characters above given serve also for its generic distinction, to which must be added that the animal has no gizzard, and is provided with eight ciliated tentacles.

<sup>1</sup> In Gosse's 'Marine Zoology,' and in the 'Micrographic Dictionary,' the genus *Pedicellina* is admitted as the representative of a third family of the *Ctenostomata*, but the error of such an arrangement becomes apparent on considering that the individual animals in the various species of this genus simply roll up their tentacles when at rest, and are unable to withdraw them within their polypidom; and hence the crown of protective setæ surrounding the orifice of the cell and characteristic of all the true *Ctenostomes* would be to them a simple superfluity, and the absence of these characteristic setæ, in conjunction with other well-marked structural peculiarities, has furnished ample grounds for setting this genus apart as the type of a separate sub-order known as the *Pedicellinae*.

It now only remains to furnish the specific title, and for reasons which I shall explain hereafter, I have chosen that of *pavida*, and, as *Victorella pavida*, its characters may thus be cited:

Polypidom minute, confervoid, adherent, or semi-erect, irregularly branching. Tentacles eight in number. No gizzard. Inhabiting brackish water, parasitic on the polypary of *Cordylophora lacustris*.

As is above intimated, I have so far only met with this minute and very elegant little polyzoon attached to the polypary of *Cordylophora lacustris*, and, to the unassisted eye, the only visible indication of its presence is afforded by the appearance of, as it were, a more or less entangled mass of confervoid filaments adherent to the protective sheath of its more robust though less highly organised supporter. The assistance of the microscope thus becomes essential for the elucidation of the true nature of the organism, and on the removal and examination of a fragment of the filamentous mass with the aid of that instrument, its true affinities are immediately made apparent. Each slender filament now proves to be a tiny tube containing a living organism of the most delicate and complex structure, and which, on expansion, is at once recognisable as a true representative of the Infundibulate Polyzoa; the presence, moreover, of the circllet of protecting setæ aiding still further to refer it to the Ctenostomatous section of that order.

One of the most striking features connected with the life-history of this little Polyzoon is its remarkably shy and retiring habits, and hence my choice of the specific name adopted. On first transferring a fragment from the aggregate mass to a hollow slide or zoophyte-trough, for more convenient microscopic examination, it at once retreats to the remotest corner of its domicile, and many minutes, and sometimes even hours, pass away before it again ventures to display itself; on its doing so, however, the patient observer is amply rewarded for the brief delay. A forward motion of the tentacles first takes place, then the circllet of setæ, in the form of a fascia, appears beyond the orifice of the cell, extended to their utmost, the tentacles push onward through and beyond them, and in far less time than has been occupied to record it, the little creature is expanded in its fullest glory. A crown of eight long, delicate, and remarkably flexible tentacula now surmounts the transparent stalk, and a tiny yet rapid maelstrom responds to the rhythmical vibration of the many thousand scarce visible cilia which clothe them, engulfing and hurrying away to a living tomb such

unfortunate infusorians or monads as may happen to wander within the precincts of its eddying vortex.

Of specimens of *Cordylophora* detached from the timber-baulks in the Victoria Docks in search of this Polyzoon, by far the richer supply has been found adherent to that which was taken some five or six feet below the surface of the water, little, if any, being met with on such as from its proximity to the surface was easily attainable with the hand alone; and this apparent partiality for deep water readily accounts for the difficulty that has hitherto been experienced in keeping it alive for any length of time in shallow vessels.

The morphological affinities of *Victorella pavidæ* are somewhat remarkable. Overlooking, for a brief interval, the structure of the polypidom, its relationship to various representatives of the Vesiculariadae are at once palpable and striking. Its possession of eight tentacula point out its affinity to the genera *Serialaria*, *Vesicularia*, *Valkeria*, *Mimosella*, and *Bowerbankia*, but the absence of a masticatory organ or gizzard restricts the comparison to the first and third alone of those five genera; and happening to have at hand an admirably prepared slide of *Valkeria pustulosa*, with the tentacles in a state of full expansion, I found that, except in size, the latter being much the larger, any histological difference between the two was difficult to determine.

Of as high importance, however, as the various modifications of the endoskeletal system of ossification in the different groups of the Vertebrate division of the animal kingdom, must be ranked the structure of the polypidom or exoskeletal system of support which obtains in that invertebrate section of the same kingdom to which we are now referring; and here, as has been already demonstrated, there is a most essential and important difference, and one which very few words will suffice to show carries with it a peculiar and no less important significance.

The infundibulate arrangement of the tentacula and, above all, the coronet of protecting setae at once suggest the necessity of referring *Victorella* to a sub-order,—the *Ctenostomata*, which has hitherto been known as having none other but marine representatives; while, on the other hand, the irregular and homogeneous structure of its polypidom is precisely what we meet with in *Plumatella* and other members of an order,—the *Hippocrepia*, of which not a single representative has yet been discovered inhabiting pure sea-water, and hence the sum total of the structural peculiarities of this minute denizen of brackish water seems to go far towards furnishing us with one link of a series which future investigation and comparison may demonstrate to unite the two.

In other papers<sup>1</sup> I have alluded to the extraordinary variety of animal life that is to be met with in the waters of these docks, some being of undoubted marine origin, and the remainder representing forms commonly frequenting our inland rivers and ponds; while again, as has just been shown, it is not wanting in a type of structure peculiar to itself,—or rather one possessing characters shared in by the two, though common to neither. On the whole, however, and if it is right to judge from the higher forms represented, the balance is greatly in favour of the freshwater species, since among these all the fish must be included, those which are taken there in considerable abundance being such fluviatile forms as perch, roach, dace, rudd, and bream, &c.

Among the Polyzoa *Plumatella repens* is frequently met with, and this last autumn I have had the satisfaction of taking from the same locality a no less truly marine representative of the class than *Bowerbankia imbricata*, though only in that immature and creeping condition which was at first described as *B. densa* by Dr. Farre, but which was subsequently demonstrated by Mr. G. Johnston to be simply the early stage of the first named species.

The idea may possibly suggest itself to some that the form just described as *Victorella pavida* is identical with the species last referred to. A glance, however, suffices to dispel any such illusion. *Bowerbankia* was at once recognised by its conspicuous and well developed gizzard, by its shorter and more rigid tentacula, and, lastly and most essentially, by the structure of its polypidom, which was in entire accordance with what obtains in and is characteristic of every representative of the *Vesiculariade*, having a main rachis bearing distinct cells constricted towards their point of attachment, and whose deciduous nature was made apparent by the facility with which they became detached from that point of juncture.

Another interesting form, which has not been previously referred to, as inhabiting these waters is that low type of the Annelida *Aelosoma quaternarium* Ehr. whose morphology has been so ably figured and described by Mr. E. Ray Lankester in vol. xxvi, part iii, 1869, of the Transactions of the Linnean Society, and a recent excursion to the 'Docks' in company with the above-named gentleman resulted in the capture of other representatives of the same sub-kingdom, which will probably be shortly introduced and described by him as new to science.

<sup>1</sup> "On a New British Nudibranch" (*Embletonia Grayi*), 'Proc. Zool. Soc.', Jan., 1869, and "On some New Infusoria from the Victoria Docks," in the 'Monthly Microscopical Journal' for May, 1869.

In the accompanying plate (Plate IV) the small figure in the left hand corner indicates a small detached fragment of *Victorella pavidæ* of the natural size (fig. 1); the centre group (fig. 2) is the same considerably enlarged, and beneath that again is a piece of *Cordylophora lacustris* magnified a few diameters, and showing the mode in which the Polyzoon attaches itself to it (fig. 3).

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On a CRUSTACEAN PARASITE of NEREIS CULTRIFERA, Grube.

By W. C. McINTOSH, M.D., F.R.S.E., F.L.S. With Plate V.

CRUSTACEAN parasites (Ectozoa) of the Annelids would not appear to be very common; but this may arise in some measure from their having been overlooked, rather than from their actual rarity. So far as I at present am aware, Dr. H. Krøyer is the only author who has described such a parasite upon an Annelid ('Naturhistorisk Tidsskrift,' 1864, p. 403, Tab. 18, f. 6, a—g). This species, *Silenium polynoes*, Krøyer, he found on an example of *Polynoe cirrata*, O. Fabricius, (the well-known and widely distributed *Harmothoe imbricata*, Lin.). In *Silenium polynoes* the body of the female is in the form of a simple saccate mass, with a petiolate process for attachment, and furnished with two flask-shaped ovaries at the posterior extremity. There are neither antennæ, rostrum, nor feet. The male, again, is much more minute, though more complex in organisation, for the produced anterior region of the cephalothorax is supplied with four pairs of feet, and the caudal process is triarticulate and setose. Dr. Baird also mentioned to me that he had seen a small crustacean parasite attached to a foreign *Lepidonotus*, while examining the collections in the British Museum.

On the rich shores of the Channel Islands several examples of *Nereis cultrifera*, Grube, a plentiful species under stones and in other places between tide-marks, were infested by a crustacean parasite, which, from its size, and the colour of the ovisacs, was very easily observed. They generally occurred towards the posterior end of the worm, and the largest specimen of the worm had about fifteen examples of the parasite, most of them, however, being small. The usual number was from three to five. They either adhered to the groove between two feet, or to the sides of the feet. In the living state they are of a dull whitish colour, and cling most securely to the worms, but they do not seem to incommode them to any extent; and it may be supposed that the *Nereis*