characteristic of the species ; and of the eight rows which these all possess, it appears that at first there are only four, between which the others are afterwards produced.

The Ciliogrades abound in all seas, but many of them are rendered invisible to our dim vision by their pellucidity and small size. They move about with great alacrity, sometimes whirling on their own axis, or advancing forward obliquely, or rising to the surface and again quickly descend­ing. As already mentioned, their principal organs of lo­comotion (and they are at the same time the organs of res­piration) are the banded cilia, aided however by the con­tractility of the body itself, perhaps also by currents of wa­ter flowing through them, and in some genera ( *Ocyroes)* by the undulatory movements of certain fin-like expansions peculiar to them. When they wish to repose, they poise themselves in mid water by the aid of their tentacula, or by ceasing the play of the cilia ; but motion, constant motion, is their joy and occupation. Their vivacity, their extreme delicacy and fragility, the purity of the tints which colour their internal organs, and their varying iridescence reflected from the surface by the changes and motility of their cilia, have made them the objects of admiration to every one who has seen them. The Beroë ovum is, in the estimation of Otho Fabricius, the most beautiful of the class, but so frail as to be injured and broken by the gentlest handling ; and when we remember that their life is probably as transitory as that of the Ephemera, it does indeed require from their admirers all the philosophy of the poet to bid him say, unre­pining,

Oh I mourn not, that in nature, transitory Are all her fairest and her loveliest things.

The family is coequal with the order Ctenophores of Esch- scholtz, whose arrangement of the genera, though not the latest, is considered the most satisfactory. He divides the order into fa­milies and genera thus :

1° Callianihides, which have a small stomachal cavity and tentacula.

A. Tentacula simple, furnished with delicate filaments.

(*a*) Body extended laterally in the form of a ribbon. *Ccttum.*

(*b*) Body globular or ovoid. *Cydippe.*

B. Tentacula ramified. *Callianira.*

2°. Mnemiides, which have a small stomachal cavity without tentacula.

A. With straight prolongations near the mouth.

\* With rows of vibratile cilia on the body.

(*a*) Surface of the body furnished with papillæ, without large lobes at the mouth. *Eucharis.*

(*b*) Surface of the body even, with large lobes at the mouth. *Mnemia.*

\*\* No rows of vibratile cilia on the body. *Calymna.*

B. Without straight prolongations at the mouth. *Axiotima.* 3°. Beroïdes, which have a large central cavity in the place

of the digestive cavity.

A. The rows of vibratile cilia exposed.

(*a*) Cilia shorter than the interspaces. *Beroë.*

(*b*) Cilia one half longer than their interspaces. *Medeae.*

B. The rows of cilia in furrows, in which they can be hidden.

*Pandora.*

Mr Edward Forbes has kindly furnished us with the following synopsis of the British Ciliograda.

I. Cydippe. Eschscholtz. Filamentary appendages.

1. *C. pileus,* Linn.—Rows of cilia nineteen or twenty, on the

summits of the lobes; filamentary appendages white. *Hab.* East coast of Scotland and England: Irish Sea: Isle of Man.

2. *C*. *Flemingii,* Forbes—(Beroë ovatus, *Firm.)* Rows of ci­lia thirty-six, on the summits of the lobes ; filamentary appendages white. *Hab.* St Andrews Bay.

3. *C*. *lagena,* Forbes—Rows of cilia about twenty-five, placed in the furrows of the lobes; filaments white. *Hab.* North coast of Ireland.

4. *C. pomiformis,* Patterson.—Rows of cilia about twenty;

filaments rufous. *Hab.* Coast of Ireland and Firth of Forth. (Mr Patterson has given us a history of this spe­cies, written in a peculiarly interesting and pleasing style, in the *Trans, of the Royal Irish Academy,* V. xix., part 1st.)

*Obe—*Mr Forbes and Mr Goodsir have made many observations on the cilia of this genus, which lead to important conclusions on the nature of these organs in general. They found, as Mr Garner had previously ascertained, cilia on the walls of the stomach and vessels, and a row of minute ones surrounding the mouth ; but none was seen on the filamentary tentacula, or on the walls of the filamentary cavities. The cilia which are placed on the longi­tudinal ridges are linear-lanceolate, flat, and not hollow. They are not webbed together, and have no communication with the vessels which run beneath the ciliary ridges. Each row of cilia is mounted on a transverse base of a more solid texture, and less transparent than the rest of the body. The substance of this base consists of globules irregularly imbedded in a homogeneous sub­stance. When one of the cilia of a Cydippe is cut off, it has of itself no power of motion ; but if the smallest portion of the sub­stance of its base remains attached, it moves with great vivacity. Hence the observers conclude that the ciliary motion is effected by the *undulatory movements of this peculiar tissue ;* which explanation will also account for the rotatory appearance of the circles of cilia on certain animalcules. *Athenäum,* Sept. 26, 1840, p. 746.

II. Alcyöe, Rang. Tentacula round the mouth.

1. *Al. rotunda,* Forbes and Goodsir.—Ovate, rounded, crystal­line; tentacula rounded at their extremities; natatory lobes forming half the animal. *Hab.* Kirkwall Bay, Orkney.

2. *Al. Smithii,* Forbes.—Elongate-pyriform, sub-compressed,

crystalline ; natatory lobes about a third of the length of the animal ; tentacula acute lanceolate. *Hab.* Sea near Ailsa Craig.

3. *Al. [Botina] Hibernica,* Patterson—Ovate, crystalline ; ten­tacula acute ; natatory lobes nearly one half the length of the animal. An Mnemia Norvegica, *Sars.? Hab.* Irish coast, *Mr Patterson,* who has described it excellently in the work above quoted.

III. Beroe, Linn. Neither tentacula nor appendages.

1. *B. cucumis,* Otho Fabricius. No spots on the external surface ; internal dotted with red points ; ciliaferous ridges red *Hab.* Isle of May, in the Firth of Forth.

2. *B. fulgent,* Macartney. *Hab.* Hearne Bay.

*Obs.* The “ Eulimena quadrangularis” of Fleming appears to have been a ciliograde. The name Eulimena is pre-occupied for another genus of Medusa.

IV.—POLYPES.

The constituents of this class are in general animals of minute size, and of almost gelatinous consistency, charac­terized by having the oral aperture in the superior disc or extremity of the body encircled with a row, or sometimes with several rows, of tentacular filaments. The aperture always leads into a cavity appropriated to the digestion of the nutrient matter, but in all other particulars the Polypes differ so widely in their organization, that to give a view of it which shall have any distinctness or use, there is a ne­cessity to separate the class into groups, founding their distinctions on that knowledge of their anatomy which has been recently obtained through the labours of Cuvier, Blainville, Savigny, Rapp, Grant, Thompson, Ehrenberg, Milne-Edwards, Dujardin, Farre, Lister, and others.

It is an axiom, that no class of animals stands isolated, but every one has its kindred claims on those around it, proving, not that each has been evoked from the pre-ex­istent class by innate or external influences, but that the Creator has perhaps called his creatures into existence by a fiat worded in one spirit, and which matter has obeyed with one uniform intelligence. And thus it happens, that while Polypes have mostly felt the force of radiation in their development, they are not without their families that con­nect them with the unsymmetrical molluscans ; and since it seems to us to be of importance that these relations should be remembered (for what study is more interesting to the zoologist than the mutual harmonies of two apparently re­mote classes?) we shall in the first instance divide the class into two sections, distinguished in a manner that brings this relationship into prominent view. The mollus- can Polypes have both an oral and an anal aperture to the alimentary canal, and the tentacula that surround the for-