same fancy may see in them the living models on which our umbrellas have been made. The margin is usually fringed with tentacular filaments ; and in many species we also observe, placed at wide intervals, a circle of coloured warts, which, from their organization, are evidently organs of im­portance in the animal’s economy. Ehrenberg believes them to be branchial, for connected with each of them he has discovered a partial circulation of a fluid analogous to blood ; and, what is still more singular, he has detected in their near vicinity an organ retractile, within a sheath, and containing a mineral crystal, to which he assigns the office of an eye, because it is similar in structure to the eye of several infusory animalcules, and is more amply provided with nerves than any organ other than one of sense ought to be.

The under surface of the umbrella is sometimes entirely naked, sometimes furnished with numerous scattered tenta­cular suckers, as in Porpita and Velella, or with greatly di­versified brachial appendages, which depend usually from the lips of the mouth. These are either free from each other and separate to the base, or they coalesce so as to form a kind of stalk previous to their ramification into lobes or filaments, each division having at its extremity pores for the absorption of the thin nutriment on which such species must necessarily subsist. The Medusæ with this structure resemble a bulbous root with its radical fibres, and were therefore called *Rhiznslomous* by Cuvier.@@1 The greater number of the Medusides, however, have a distinct mouth, placed always centrally, either sessile or at the end of a species of proboscis more or less prolonged. It has no hard parts, nor teeth, nor jaws, and leads by a very short oesophagus into the stomach, consisting frequently of four separate cavities excavated in the gelatinous parenchyma, without any peculiar lining. From the stomach proceed nu­merous vessels, which all bend to the circumference. Some of these vessels are simple and undivided, others ramify di­chotomously like veins, and form anastomoses among their ultimate divisions. Injections from the stomach pass more readily into the simple than into the ramose vessels ; but both kinds serve for the conveyance of the digested food, whose unassimilated remains pass from the body through their extremities, which open by apertures on the rim. The portion intended for nutrition and growth probably trans­udes in part into the parenchyma, while it flows along the vessels ; and a part seems to enter a peculiar vessel which runs round the periphery that it may pass into the partial circulations at the marginal tubercles, and be submitted to the action of the air. It must, however, be admitted that these tubercles exist in comparatively few species ;@@s and there can be little doubt that the principal airing of the nutritive fluids is effected by the action of the circumfluent water on the exterior surface, as well as in the internal cavities and vessels. To effect this great purpose the more completely, we find that the oral and marginal filaments are clothed with vibratile cilia, which drive currents of water over them in determinate directions ; and these cilia are said likewise to line some of the interior cavities. It is from their action that portions cut off from the appendages continue to move like independent and perfect beings; a circumstance appa­rently so demonstrative of their completeness, as to have given origin to several spurious species.

The Rhizostomes, as we have already mentioned, feed only on fluid matters, and such also is the condition of those genera which Peron and Le Sueur named *agastric,* from a belief that they had neither mouth nor alimentary sacs ; for although this latter statement has been shewn to be erroneous, yet the absorption of the aliment appears to be through pores. But the bulk of the Medusides love a grosser fare, and there is some slight evidence in fa­vour of their having a discrimination in the matter ; for Gaede remarks that he has never found fishes in the sto­mach of Medusa capillata, but often worms ; while in that of Medusa aurita there are frequently fishes, rarely worms. The latter species, according to our observation, feeds more frequently on pelagic Gammari ; and minute Crusta­cea and entomostraca constitute the principal food of most of them. Digestion is extremely rapid. We remember once observing in the stomachs of Medusa aurita, several specimens of a Gammarus unknown to us,@@’ and which we were anxious to examine : they were living when first seen, and when we left the Medusa in a basin of sea-water for half an hour, we little dreamed of the disappointment awaiting our return, for not a trace of the Crustacea was then visible.

All the species are propagated by ova generated in ap­propriate organs situated generally in the immediate vici­nity of the stomach, but very variable in appearance and ge­neral structure. Previously to the deposition of the spawn, the ovaries swell in a very remarkable manner, and the young Medusæ, according to Blainville, are cast out through the mouth, sometimes after a certain degree of develop­ment in the appendages. In the Medusa aurita, according to Ehrenberg, the ova, previously to their maturation, escape through the peculiar aperture of the ovarial sac into the water, where they are laid hold on by the tentacula and the two layers of the brachial appendages, and received into little sacs which are formed on these layers, and which have a direction from the interior outwards. It is in these sacs that the ova are metamorphosed and matured. While in the ovary they have a thin smooth membranous enve­lope, are of a roundish figure, and filled with a dark-violet granulous fluid ; but in the fætal sacs they have no shell, and present themselves under three distinct forms. Some resemble bramble-berries, and their colour is a pale violet ; others, also of a pale violet, are disciform, in shape like a miniature Medusa, without arms, and without nutritive canals ; and the third, which is the most numerous, has a cylindrical form, truncated at both ends, and of a yellowish- brown tint. The last two are densely covered with cilia, and swim freely. The largest among them attain a diame­ter equal to the one eighth of a line ; and they are about one third of this size when they lose their shell. From being unable to discover male organs in this Medusa, Ehren­berg has hazarded the conjecture that the smaller ova may become, as we understand him, males, which remain always of a microscopical size, while the females only grow Urge;@@\* but the conjecture is a bold one. We are scarcely able to reconcile these interesting facts with one observed by Μ. Saars. In a small volume published some years ago, this Swedish naturalist described a new genus of Medusides under the name of *Strobila,* from its great similitude to a fir cone ; but he now assures us that the Strobila is the young of Μ. aurita. In its strobiline state, it is composed of a series of circular pieces, with numerous tentacula, and the cone is surmounted by a cylindrical shaft : in its develop­ment the pieces separate successively into disciform ra­

*@@@, Règne Animal,* iii. p. 278. Figures illustrative of the structure are given in the *Bridgew. Treatise* of Dr Roget, ii. p. 888-9.

@@@3 We may here warn the student that be should guard against the too great extension of these general remarks ; for the truth is, few species have been examined anatomically, and even the most general detail will be found to have many individual exceptions.

@@@3 Probably the Oniscus medusarum of O. Fabricius. *Faun. Groenl.* p. 257.

*@@@4 Ann. dee Sc. Nat.* n. s. iv. p. 297. Rathke apparently borrows his account of the development of the Medusæ principally from Ehren­berg, but he omits their escape into the sea previously to their introduction into the brachial sacs, which is really incredible ; and he says that when lodged in these sacs they have no longer a chorion, as Ehrenberg pretends, and are consequently already young Medusæ. See Burdach's *Traité de Physiologie,* tom. iii. p. 67, &c.