made the still more singular discovery that the Pentacrinite of the Irish seas, which he first described under the name of *Pentacrinus Europatu,* and which has since been made the type of the genus *Phytocrinus* by De Blainville and Agassiz, is a Comatula in its earlier states of development. When not more than one eighth of an inch in height, this Pentacrinus “ resembles a little club, fixed by an expanded basis, and giving exit at its apex to a few pellucid tentacula ; no other part of the solid fabric is observable, but an indistinct appearance of the perisome. In those specimens which have made a little more progress, together with the elonga­tion of the pedicle or stem, its joints begin to make their appear­ance ; the body acquires a larger size and brownish tint, from a grosser food ; the tentacula of the mouth protrude in a greater degree, and move slowly in various directions. In others still more advanced, the joints of the stem become quite obvious, from their opacity and white colour, and the base of the future arms, as well as the auxiliary side-arms, are rendered palpable. The arms from this period lengthen apace from their bifurcation, and have superadded to them a double range of transparent jointed tentaeula ; so that the animal begins to put on a more perfect appear­ance, and now for some time merely acquires a somewhat greater size and an extension of its arms, which, although they solidify from their origin upwards, remain pellucid and thick at their apices, where elongation, evolution, and the secretion of calcareous matter is gradually going on.” Subsequently the arms again bifurcate at or near to their extremities, a second and even a third time, and having reached the full development entitling it to the name of a Pentacrinite, the head appears to be cast off, that it may become a nomade Comatula. How just then the conclusion of Mr Thompson from these interesting discoveries. “ From these ob­servations connected with the growth of this animal, and by which it appears to present itself at various stages of its progress under considerable diversity of form, naturalists may learn to avoid the unnecessary multiplication of the genera and species of the Cri­noidea, by giving undue weight and consideration to characters originating in the progressive evolution of individual species, and which are consequently of a transitory and delusive nature.”@@'

Genus Comaster, *Ag.—*This genus has the same organization as the preceding, but the arms are ramified instead of being simply furcate.

Genus Ganymedλ, *Gray.—*The genus which Mr Gray describ­ed under this name in the *Proc. Zool. Soc. of London* for 1834, p. 15, he has ascertained to be founded on what is evidently only the basal joint of the body of the English species of Comatula.—*An­nals and Mag. of Nat. Hilt.* i. p. 158.

Genus Pentacrinus, *Miller—*Pedicle more or less pentagonal, bearing at intervals simple verticillate rays ; rays of the disc fixed to the pedicle, each by a cuneiform piece, followed by two simple pieces, after which the rays bifurcate, and at a little farther dis­tance divide into two, which then branch out into numerous ap­pendices, pinnate at their edges. The space between the base of the rays, occupied by the visceral cavity, is formed by numerous small laminæ. The only living species *(P. caput Medusa)* is a na­tive of the Carribbean seas.

III*.—*ACALEPHÆ.@@.3—SEA-JELLIES.

The Acalephæ have been named by Blainville the *Arachnodermata,* to mark in a stronger manner how re­markably they contrast with the *Echinodermata* in the structure of the skin, which is a soft serous pellucid cuticle, containing sometimes miliary granules, but always smooth and even, and as thin as the gossamer’s web. They are radiated animals of a gelatinous consistency, with an unarm­ed mouth in the centre of the ventral surface, the entrance into a stomachal cavity without proper parietes, but fur­nished with vasculiform canals ramified through the body ; their respiratory apparatus is ciliary, and their mode of ge­neration oviparous ; they are all nomade and marine, and move through the water by alternate contractions and dilata­tions of their periphery, or by the aid of vibratile cilia. The constituents of the class are divisible into two orders, viz., 1. The Medusides, with a body almost always circular, convex dorsally and concave below, supported in a few ge­nera by an internal cartilaginous plate ; the rim, as well as the oral aperture, mostly fringed with tentacular ciliated appendages : 2. The Acalephes properly speaking, whose body is irregular and multiform, bilateral, and sometimes orbicular, with brachial or filamentous appendages, and ci­liary fringes.

ORDER I—MEDUSIDES.@@’

Among animate creations, there is none that excels the Medusides in beauty and ornament, or in the variety and eccentricity of their forms ;

—————— there’s not a gem Wrought by man’s art to be compared to them ; Soft, brilliant, tender, through the wave they glow, And make the moonbeam brighter where they flow.

When floating in the ocean, most of them appear like crys­tal bowls of the purest transparency, veined and patterned with the most brilliant colours, and their rims ornamented with fringes, furbelows, and arbuscles of such delicacy and intricacy of workmanship, that even the most experienced in nature’s works marvel how it is that such textures, too frail to bear the lightest handling, are kept entire amid the restless element of their nativity.@@4 We have often watched with intense interest some of the least complicated, and, it may be, some of the least beautiful, as they floated by us on the surface of a summer’s sea. On a hasty examination, they may seem to be supported there by their own inhe­rent buoyancy, and to be carried onwards with the tide or current, which they have apparently no power to resist ; but watched a while, they are seen alternately to contract and expand the whole periphery of the body at regularly-timed intervals, in a manner which Dr Roget has aptly illustrated by comparing it to the opening and shutting of a parasol, and with a quickness and force which we have felt to be considerable. By these motions the Medusides can swim against a gentle current, though they more commonly yield themselves up to its persuasive violence ; and when alarmed they can also sink deep into the bosom of the sea with con­siderable velocity, so as frequently to elude an attempt to secure them. They can stop and maintain themselves at any depth, and rise again with equal ease to enjoy a nearer intercourse with light and air. Lamarck’s speculations rendering it necessary to deny to them either nerves or muscles, he has persuaded himself that these motions of the body are entirely mechanical, produced by the influx and efflux of imponderable fluids, such as electricity, permeating and flowing through its gelatinous texture ;@@5 but we are very sure that he will summarily reject this theory who has once observed the phenomena, which are certainly in some de­gree under the control of the animal, and regulated by its will and sensations. It seems indeed to be now proved, more especially by the anatomies of Ehrenberg,@@6 that they are the effects of the contraction of muscular fibres, radiat­ing from near the centre of the body to the circumference, running alongside the vein-like nutritious canals, and by others in the rim, which have a circular direction. We know also that the Medusides do possess a nervous system, formed after the same plan, and rather more complete than it is in other radiated beings.

The figure of the Medusides is regular and almost always circular (for the Velella alone are oval), sometimes discoid or spheroidical, but generally hemispherical, so as to allow of a comparison between them and the mushrooms, which they are presumed to represent in the animal kingdom ; and the

@@@1 See J. V. Thompson’s *Memoir on the Pentacrinus Europoeus,* Cork, 1827, 4to ; the *Edin. New Phil Journal* for 1836 ; and Mr Edward Forbes’s *History of British Star-fishes.*

@@@2 Synonymes : Radiares mollasses ; Orties de mer libres ; Arachnodermes ; Gelatines ; Jelly-Fish ; Sea-Blubbers.

@@@8 Synonymes : Radiares medusaires : Acalephes simples ; A. Discopbores ; Acalepha Cyclomorpha ; Medusida.

@@@4 See Kirby’s *Bridgew. Treat.* i. p. 199.

*@@@4 Anim. Vert.* ii. p. 444, 446, and 452-5.

*@@@6 Ann. des Sciences Nat.* n. s. iv. p. 290, &c.