provided any portion of the disc remain attached, will live and become cinquefoil, as it was previously to its miserable mutilation. There was a time when these phenomena gave rise to expressions of the greatest wonder,@@1 and to specula­tions more curious than edifying, touching the possible di­visibility of the soul, and other metaphysical subtilties. We may safely from them infer, that the susceptibility to pain in these animals must be very considerably, and almost in­finitely, less than in animals of a more perfect kind, since in these the pain consequent on such injuries, and the sym­pathetic fever which follows as its necessary result, would be sufficient to kill them, independently of any other cause.@@®

In relation to *habitat,* the Stellendes may be enumerated among the denizens of the shores of every sea, living ge­nerally at a depth of several fathoms, where they congre­gate in incalculable herds. There are beds of some species on our own coasts, that spread over an extent of some hundreds of yards, lying, in some spots, one upon another, to the thickness of a foot or more. The species are more various, if not more productive, in tropical than in tempe­rate or cold seas. They prey upon small testaceous mol- lusca, which they catch with their suctorial feet, and retain opposite the mouth by means of the spinous projections surrounding it. We have found in their stomachs various univalved species, but the conchifera are supposed to be more especial favourites. Μ. Eudes Deslongchamps has observed five or six individuals of Asterias rubens clustered together in the form of a ball, the nucleus of which was a Mactra. The star-fish had retroverted their vesicular stomachs, and were found endeavouring to suck out the fish from between the valves of the shell ; but it is impossible to believe, with this naturalist, that the Asterias had sepa­rated, or were capable of separating them, so as to inject within a fluid capable of benumbing the mollusc and pla­cing it beyond resistance, the more especially as this fluid has no other than imaginary existence. There can be no doubt that the valves had partially opened, from the feeble­ness or death of the molluscum, before it was set upon by the star-fish.@@3 We have seen similar clusters around a Turbo or whelk. Deslongchamps’s opinion is indeed only worth notice as coinciding with that of the fishermen, who, regardless of the certain inefficiency of the agent, are fond of telling of the exterminating war waged by the Asterias against the oysters ; a tale which has its invention at a far- distant date, being found in Aristotle, paraphrased by Ælian, and versified by Oppian, and hence copied without question by every subsequent popular compiler.

In their turn the Stellendes are greedily preyed upon by fish of almost every sort ; for they who assert that the acridity of their flesh, or the spines and prickles of their skin, render them distasteful or formidable,@@4 know nothing of the voracity and power of their foes. We have very often found the stomach of cods and haddocks crammed with the remains of star-fish, more especially of the prickly Ophiuræ, and that at a season when the fish were in high perfection. Dr Knox has attempted to prove that the ova of the Echinodermata are the proper food of the salmon, which is only fit for the table of the epicure when he has been feeding on them: "from the richness of the food on which the true salmon solely subsists, arises, at least to a certain extent, the excellent qualities of the fish as an article of food.”@@5 Vast numbers are more certainly destroy­ed by the fisherman, who finds they materially injure the pro­duce of his art, by clinging to and clustering round his baits,

and who therefore wreaks his vengeance on them by throw­ing them in heaps on the dunghill. In some places the com­mon species have even been used as manure ; but other­wise man has not found them adapted to his use, for the me­dicinal virtues which the early physicians and astrologers ascribed to them, have disappeared in their modern gene­rations.

To remedy that looseness of description which of necessity be­longs to such general views as we have been giving, we proceed to notice the systematic arrangements of the order, whose only common characters seem to be, us Linck long ago observed, a de­pressed multifid coriaceous body, with rays or lobes radiating from the margin of the disc, and an inferior central mouth. Linck’s primary division of it into the fissured and entire (fissæ et inté­gra) indicates his perception of those differences in structure on which modern naturalists found their principal families; but his want of knowledge of system becomes very obvious in the subor. dinate details, when he exclusively drew the character of his se­condary divisions from the number of the rays ; a character of such trivial importance as not even to be specifical, but subversive of every natural affinity. Linnæus arranged the whole under one genus (Asterias) ; which Lamarck divided into four, whose essen­tial characters may be shortly stated thus :

• Rays articulate, distinct from the disc.

1. Comatula. Rays of two kinds, dorsal and marginal; the

dorsal simple, short and filiform ; the marginal larger, and pinnate.

2. Eubyale. Rays marginal, alike, dichotomous, and much

divided.

3. Ophiurλ. Rays alike, marginal and simple.

\* \* Rays continuous with the disc.

4. Astebias. Rays furrowed underneath, and tentaculiferous.

Cuvier adopted the genera of Lamarck, but, with a proper re­gard for the rights of priority, for Comatula he substituted the name *Alecto,* and for Euryale that of *Gorgonoccphalus,* which had been previously bestowed on the same groups by our celebrated countryman Dr Leach. The genus Ophiura, Cuvier further pro­posed to divide into two ; the one embracing those species whose rays are furnished with mobile lateral spines, and between whose articulations small fleshy tentacular filaments *(pieds)* issue on each side ; the other those in which the rays, having no lateral spines, resemble the tails of lizards. In these “the central disc has, in each interval of the rays, on the side where the mouth is, four holes, which penetrate into the interior, and serve perhaps for respiration, or, according to others, for the issue of the eggs. There are no feet, except in five short furrows, which form a star around the mouth.” The genus Encrinus, which Lamarck had referred to the Zoophytes, Cuvier properly placed near the Comatula, adopting the views of Miller implicitly in regard to its struc­ture and further subdivisions.

Miller names the family of which the Encrinus may be consi­dered the type, *Crinoidea* or lily-shaped animals, a family ren­dered interesting, as Mr Parkinson@@6 remarks, not only by their curious forms and extraordinary structure, but also by their being among the earliest inhabitants of this planet. Hence they are so far aliens of this world, that whilst immense tracks of rocks are literally formed of the entombed remains of different species in a mineralized condition, only five or six species have yet been dis­covered in a recent state.@@7 “ An idea of their structure may be obtained if we imagine an Asterias placed with its mouth upwards on a columnar jointed stem, one end of which is connected to the dorsal surface of the animal, and the other most probably fixed at the bottom of the sea. The rays or arms extending from the circumference of the body are much branched, and at last pin­nated ; other jointed processes, named auxiliary arms, surround the stem in whorls placed at short intervals. The column is perforated in its centre with a narrow canal, down which a pro­longation of the stomach extends, and lateral canals proceed from the central one through the verticillate auxiliary arms The Comatula has rays spreading from the circumference of the body, branched and pinnated like those of the Pentacrinite. It is not fixed on a column, but the dorsal surface of the body is elevated in the middle, and bears a number of smaller rays or arms ; and this dorsal eminence, with its rays, has been sometimes compared

@@@1 Reaumur, *Hist. des Insect.* vi. pref lx. &c.

@@@i Good’s *Book of Nature,* i. 429.

*@@@• Edin. New Phil. Journ.,* ii. p. 394.

@@@4 Blumenbach’s *Man. of Nat. Hist.,* trans. p. 267.

@@@s “ On the Nat. Hist, of the Salmon,” &c. p. 8, a pamphlet from the *Trans. of the Boy. Soc. of Edin.* vol. xii. The same food is said to com­municate poisonous qualities to the mussel. “ C’est ce frai qui, dit-on, rend les moules dangereuses à manger.” Blainv. *Actinolog.* p. 234.

@@@6 Introd. *Foss, Org. Remains,* p. 95.

@@@7 Kirby is led by his speculations to believe that the extinct forms stiil exist in the deepest abysses of the world of waters. *Bridgew. Treat.* ii. p. 15.