

destruction is only partial, the other homonodynamic portions temporarily ministering, thanks to their more independent relation to the injured region.

When the faculty of repair of damage, occasioned by the severing of the animal into two or more portions, has in the course of generations become more and more complete, it can be readily understood that it becomes at the same time a defensive instead of being only a curative process. An animal that at the approach of danger can separate in two or more parts, each of them capable of reproducing an entire new animal, evades this danger very effectively by doing so; whereas another that is attacked in the same way and does not possess this faculty, is laid hold of, shaken about, and wholly or partly swallowed. So in the *Nemertea* there is indeed a very strong faculty of spontaneous division combined with the faculty of repair¹; and anybody who has observed a fresh and living *Cerebratulus*, with its extremely delicate sense of touch, commence to rupture into two, in preference at the spot where it was grasped with the forceps, cannot fail to see in this a defensive action.

This mode of self-defence may in quite another respect be useful to the species, because at the same time it serves for propagation. Thus we see that the passage of this defensive process to that of reproduction by fission is so gradual, that it would be impossible to decide in every case what name should properly be applied to it. It cannot well be denied that in all probability ours is only a special case, in which the power of reproducing the species by a process of fission, reaching down as far as the unicellular ancestors, has come to be regulated by other motor forces than growth and—if it may not be called voluntary fission—still may be regarded as sudden and spontaneous fission, brought about by external influences, of a threatening nature to the further existence of the specimen. This regulation is no doubt a consequence of selection. Schizogony having once been established, it must have been further beneficial to the species, on the grounds that were developed above, that the internal organs should be present in multiple numbers, and this having once come about it is easy to understand, that a regular, rigorously metamerous arrangement of this multiple material, still more fully answers the same purpose, and is gradually evolved under the influence of selection.

Thus we may be said to be able to follow the appearance of metamery in a bilateral animal, along all the gradual steps by which it is evolved, and many of these steps have remained fixed and permanent in different Nemertean genera.

The last system that will participate in this metamery is the muscular system, and a rash conclusion—such as is not rare in these days of ontogenetic fetichism—might lead to the rejection of the views concerning metamery here developed, on the consideration that it is exactly the metamery of the muscular system which appears first of all in the

¹ Both McIntosh and Barrois have observed and described very peculiar cases of repair in *Nemertea*, where the head, brain, side-organs, &c., were reproduced on a headless trunk-piece. These experiments are well worthy of careful repetition. It might be that only those fragments in which a portion of the œsophagus was retained were capable of repair of the head.