

always at opposite ends, and usually also the sexual organs, though their opening is sometimes farther forward; this occurs, however, more frequently in the females, in which these organs have a double function, than in the males. When both sexual organs are removed from the posterior extremity, the opening in the female usually lies farther forward than in the male. So is it in the Myriapods and the Crabs. The Leeches and Earthworms present a rare exception. The receptive pole being thus definitely fixed, the organs of senses, as instrumental to the receptivity of the nervous system, early reach an important degree of perfection. The intestinal canal, as well as the vascular stems and the nervous system, extend through the whole length of the body, and all organic motion in these animals has the same prevailing direction. Only subordinate branches of these organs arise laterally, and chiefly wherever the general contrast, manifested in the whole length is repeated in such a manner that, for each separate segment, the same contrast arises anew, in connection with the essential elements of the whole organism. Hence the tendency in these animals to divide into many segments in the direction of the longitudinal axis of the body. In the true Insects, undergoing metamorphosis, these segments unite again into three principal regions, in the first of which the life of the nerves prevails; in the second, motion; in the third, digestion; though neither of the three regions is wholly deprived of any one of these functions. Besides the opposition between before and behind, a less marked contrast is observed in a higher stage of development between above and below. A difference between right and left forms a rare exception, and is generally wanting. Sensibility and irritability are particularly developed in this series. Motion is active, and directed more decidedly forward, in proportion as the longitudinal axis prevails. When the body is contracted as in spiders and crabs, its direction is less decided. The plastic organs are little developed; glands, especially, are rare, and mostly replaced by simple tubes.

III. *The Massive Type.* We may thus call the type of Mollusks, for neither length nor surface prevails in them, but the whole body and its separate parts are formed rather in round masses which may be either hollow or solid. As the chief contrast of their structure is not between the opposite ends of the body, nor between the centre and periphery, there is almost throughout this type an absence of symmetry. Generally the discharging pole is to the right of the receptive one. The discharging pole, however, is either near the receptive one, or removed from it, and approximated to the posterior extremity of the body. As the tract of the digestive apparatus is always determined by these two poles, it is more or less arched; in its simplest form it is only a single arch, as in *Plumatella*. When that canal is long, it is curled up in a spiral in the centre, and the spiral probably has its definite laws. For instance, the anterior part of the alimentary canal appears to be always placed under the posterior. The principal currents