

An organ which has served an important purpose in one animal, may be of less use in another, occupying a higher station in the scale, and the change of circumstances may even render it wholly useless. In such cases we find that it is gradually discarded from the system, becoming continually smaller, till it disappears altogether. We may often, however, perceive some traces of its existence, but only in a rudimental state, and as if ready to be developed, when the occasion may demand it.

In the greater number of organic structures we may trace a tendency to the repetition of certain organs, or parts, and the regular arrangement of these similar portions either round a central axis, or in a longitudinal series. The former is apparent in the verticillated organs of plants, and in the radiated forms of zoophytes. The linear arrangement is exhibited in the similar segments of annulose and other articulated animals, and also in the pieces which compose the spinal column of vertebrated animals. In these two latter classes, also, a remarkable law of symmetry obtains in the formation of the two sides of the body, which exhibits the lateral junction of similar but reversed structures. The violations of this law are extremely rare; yet some remarkable instances of anomalous formations, in this respect, will hereafter be noticed.

In treating of the particular functions of the animal and vegetable economy I shall follow a different order from that in which I have presented them in the preceding sketch. As the Mechanical functions depend upon the simpler properties of matter and the well known laws of Mechanism, I think it best to commence with the examination of these. Our attention will next be directed to the highly interesting subjects which relate to the Nutritive or Vital functions both of vegetable and animal structures: for as they involve the chemical properties of organized substances, and are, therefore, of a more refined and intricate nature than the preceding, I conceive they will be best understood after the general mechanism of the frame has been explained. These