

retained to a considerable degree the peculiar qualities of the original substance, in the same manner as the adipocire of wet burying-grounds preserves fresh and green the bones which it encloses.

In support of his anti-development views, Mr. Miller devotes his next and *sixth* chapter to the recent history, order, and size of the fishes of the Upper and Lower Silurian rocks. Of these ancient formations, the bone bed of the Upper Ludlow rocks is the only one which, besides defensive spines of fish, contains teeth, fragments of jaws, and shagreen points, whereas, in the inferior deposits, defensive spines alone are found. The species discovered by Professor Phillips, in the Wenlock shale, were microscopic; and the author of the *Vestigies* took advantage of this insulated fact to support his views, by pronouncing the little creatures to which the species belonged as the foetal embryos of their class. Mr. Miller has, however, even on this ground, defeated his opponent. By comparing the defensive spines of the *Onchus Murchisoni* of the Upper Ludlow bed with those of a recent *Spinax Acanthias*, or dog-fish, and of the *Cestracion Phillippi*, or Port Jackson shark, he arrives at the conclusion, that the fishes to which the species belonged must be all of considerable size; and in the following chapter *on the high standing of the Placoids*, he shews that the same early fishes were high in intelligence and organization.

In his *ninth* chapter on the *History and Progress of Degradation*, our author enters upon a new and interesting subject. The object of it is to determine the proper ground on which the standing of the earlier vertebrata should be decided, namely, the test of what he terms homological symmetry of organization. In nature there are monster families, just as there are in families monster individuals — men without feet, hands, or eyes, or with them in a wrong place — sheep with legs growing from their necks, ducklings with wings on their haunches, and dogs and cats with more legs than they require. We have thus, according to our author — 1, *monstrosity through defect of parts*; 2, *monstrosity through redundancy of parts*; and 3, *monstrosity through displacement of parts*. This last species, united in some cases with the other two, our author finds curiously exemplified in the geological history of the fish, which he considers better known than that of any other division of the vertebrata; and he is convinced that it is from a survey of the progress of degradation in the great Ichthyic division that the standing of the kingly fishes of the earlier periods is to be determined.

In the earliest vertebrate period, namely, the Silurian, our author