

prominent, leading characteristic of this series of fishes, — a large brain ?

But is not the “cartilaginous structure” of the Placoids analogous to the embryonic state of vertebrated animals in general? . Do not the other placoid peculiarities to which the author of the “Vestiges” refers, — such as the heterocercal or one-sided tail, the position of the mouth on the under side of the head, and the rudimental state of the maxillaries and intermaxillaries, — bear further analogies with the embryonic state of the higher animals? And is not “embryonic progress the grand key to the theory of development?” Let us examine this matter. “These are the characters,” says this ingenious writer, “which, above all, I am chiefly concerned in looking to; for they are features of embryonic progress, and embryonic progress is the grand key to the theory of development.” Bold assertion, certainly; but, then, assertion is not argument! The statement is not a reason for the faith that is in the author of the “Vestiges,” but simply an avowal of it; it is simply a confession, not a defence, of the Lamarckian creed; and, instead of being admitted as embodying a first principle, it must be put stringently to the question, in order to determine whether it contain a principle at all.

In the first place, let us remark, that the cartilaginous structure of the Placoids bears no very striking analogy to the cartilaginous structure of the higher vertebrata in the embryonic state. In the case of the *Delphinidæ*, with their soft skeletons, the analogy is greatly more close. Bone consists of animal matter, chiefly gelatinous, hardened by a diffusion of inorganic earth. In the bones of young and foetal mammalia, inhabitants of the land, the gelatinous prevails; in the old and middle-aged there is a preponderance of the earth. Now, in the bones of the dolphin there is