

insular or continental, tropical or temperate. And M. Agassiz, by the examination of an incredible number of specimens and collections of fossil fish, has been led to results which, expressed in terms of his own ichthyological classification, form remarkable general laws. Thus, according to him,<sup>6</sup> when we go below the lias, we lose all traces of two of the four orders under which he comprehends all known kinds of fish; namely, the *Cycloïdean* and the *Ctenoïdean*; while the other two orders, the *Ganoïdean* and *Placoïdean*, rare in our days, suddenly appear in great numbers, together with large sauroid and carnivorous fishes. Cuvier, in constructing his great work on ichthyology, transferred to M. Agassiz the whole subject of fossil fishes, thus showing how highly he esteemed his talents as a naturalist. And M. Agassiz has shown himself worthy of his great predecessor in geological natural history, not only by his acuteness and activity, but by the comprehensive character of his zoological philosophy, and by the courage with which he has addressed himself to the vast labors which lie before him. In his *Report on the Fossil Fish discovered in England*, published in 1835, he briefly sketches some of the large questions which his researches have suggested; and then adds,<sup>7</sup> "Such is the meagre outline of a history of the highest interest, full of curious episodes, but most difficult to relate. To unfold the details which it contains will be the business of my life."

[2nd Ed.] [In proceeding downwards through the series of formations into which geologists have distributed the rocks of the earth, one class of organic forms after another is found to disappear. In the Tertiary Period we find all the classes of the present world: Mammals, Birds, Reptiles, Fishes, Crustaceans, Mollusks, Zoophytes. In the Secondary Period, from the Chalk down to the New Red Sandstone, Mammals are not found, with the minute exception of the marsupial *amphitherium* and *phascolotherium* in the Stonesfield slate. In the Carboniferous and Devonian period we have no large Reptiles, with, again, a minute amount of exception. In the lower part of the Silurian rocks, Fishes vanish, and we have no animal forms but Mollusks, Crustaceans and Zoophytes.

The Carboniferous, Devonian and Silurian formations, thus containing the oldest forms of life, have been termed *palæozoic*. The boundaries of the life-bearing series have not yet been determined; but the series in which vertebrated animals do not appear has been

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<sup>6</sup> Greenough, *Address to Geol. Soc.* 1835, p. 19.    <sup>7</sup> *Brit. Assoc. Report*, p. 72.