

mediately over the Aymestry Limestone, and were so exceedingly diminutive, that they appeared to the naked eye as mere discolored spots; but resolved under the microscope into scattered groupes of minute spines, like those of the *Cheiracanthus*, with what seemed to be still more minute scales, or, perhaps, — what in such circumstances could scarce be distinguished from scales, — shagreen points of the scale-like type. The next ichthyic organism detected in the Silurian rocks occurred in the Wenlock Limestone, a considerably lower and older deposit, and was first described in the "Edinburgh Review" for 1845 by a vigorous writer and masterly geologist, (generally understood to be Professor Sedgwick of Cambridge,) as "a characteristic portion of a fish undoubtedly belonging to the Cestraciont family of the Placoid order." In the "American Journal of Science" for 1846, Professor Silliman figured, from a work of the States' Surveyors, the defensive spine of a Placoid found in the Onondago Limestone of New York, — a rock which occurs near the base of the Upper Silurian System, as developed in the western world; * and in the same passage he made reference to a mutilated spine detected in a still lower American deposit, — the Oriskany Sandstone. In the Geological Journal for 1847, it was announced by Professor Sedgwick,

* "This is the lowest position" (that of the Onondago Limestone) "in the State of New York in which any remains have been found higher in the scale of organized beings than *Crustacea*, with the exception of an imperfectly preserved fish-bone discovered by Hall in the Oriskany Sandstone. That specimen, together with the defensive fish-bone found in this part of the New York system, furnishes evidences of the existence of animals belonging to the class *vertebrata* during the deposition of the middle part of the protozoic strata." — *American Journal of Science and Arts* for 1846, p. 63.