

Limestone. The body of the fish was covered with rounded, overlapping, bony scales nearly circular in outline, and about an inch in diameter.

Please notice that these oldest American fishes, dating from the Corniferous Period, are Elasmobranchs and Ganoids. Of the former, there were two types, Cestracionts and Chimaeroids. Of the latter, also two types—related to sturgeons and gar-pikes.

I must now inform you that fish-like creatures began existence earlier in the Old World than in the New—at least, that is the opinion long entertained, though we shall probably have to abandon it when our information is more complete. In the Upper Ludlow rocks of England, which form the upper part of the Silurian, is a “bone-bed” composed almost entirely of the remains of fishes, much triturated and matted together. From this bed spines of *On-chus* have been obtained—a fish apparently belonging to the Cestraciont type of sharks. In the Upper Ludlow have been found, also, portions of *Ceph-al-as'-pis*, or “Shield-head,” having the head covered by a broad plate. This fish was intermediate between Placoderms and Ganoids. Still lower down in the “Lower Ludlow,” relics of a similar fish called *Pter-as'-pis* or “Wing-shield” have been found. So we say the oldest fishes of Great Britain lived in the Silurian Age. We know also, that very similar fishes dwelt contemporaneously in the waters which covered Russia and Bohemia.

I have next to inform you that this record is beaten by America. It has very recently been announced by Professor Claypole that the Corniferous Period was *not* the earliest date of American fishes. He finds remains of fishes in the lower and upper portions of the Salina Group of Pennsylvania. They appear to be related to Placoderms and Ganoids, and he has bestowed on them the name *Pal-æ-as'-pis* or “Ancient Shield.” Still lower than this he reports some fish remains which he thinks may be referred to the genus *On-chus*. These are at the bottom of the Clinton Group, which in Pennsylvania is fifteen hundred feet below the Corniferous Limestone,