

men (Plate VI., fig. 1) Agassiz has pronounced a new species the discovery of the writer. In all the remains of this curious fish which I have hitherto seen, the union of the osseous with the cartilaginous, in the general framework of the creature, is strikingly apparent. The external skull, the great shoulder-bone, and the rays of the fins, are all unequivocally osseous; the occipital and shoulder-bones, in particular, seem of great strength and massiveness, and are invariably preserved, nowever imperfect the specimen in other respects whereas, even in specimens the most complete, and which exhibit every scale and every ray, however minute, and show unchanged the entire outline of the animal, not a fragment of the internal skeleton appears. The *Cheirolepis* seems to have varied from fourteen to four inches in length. When seen in profile, the under line, as in the figured variety, seems thickly covered with fins, and the upper line well nigh naked. The large pectorals almost encroach on the ventral fins, and the ventrals on the anal fin; whereas the back, for two thirds the entire length of the creature, presents a bare rectilinear ridge, and the single dorsal, which rises but a little way over the tail, immediately opposite the posterior portion of the anal fin, is comparatively of small size. The tail, which, in the general condition of being developed chiefly on the lower side, resembles the tails of all the creature's contemporaries, is elegantly lobed. The scales, in proportion to the bulk of the body which they cover, are not more than one twentieth the size of those of the *Osteolepis*. They are richly enamelled, and range diagonally from the shoulder to the belly in waving lines; and so fretted is each individual scale by longitudinal grooves and ridges, that on first bringing it under the glass, it seems a little bunch of glittering thorns, though, when more minutely examined, it is