

many of the strata appear to be composed almost entirely of their mineralised exuviæ, but generally in a broken state. The chain coral occurs occasionally in transition limestone. Other genera of radiated animals occur in the more recent formations of limestone, but seldom in sufficient abundance to compose nearly the whole mass of a stratum. This is the more remarkable, as coralline animals are forming extensive calcareous rocks in our present seas. Some genera and species of radiated animals which abound in transition rocks, have not left their remains in any of the upper strata; hence it might be inferred that they had long been extinct. In some instances, the inference is not correct; the *Madrepora stylina*, so common in transition limestone, is entirely wanting in the secondary and tertiary strata; but a living animal of this species has been recently discovered in the South Seas. The pentacrinus, which is distinguished from the encrinus chiefly by its pentagonal stem and branches, makes its first distinct appearance in the lias, but is not frequently met with in the upper strata, and disappears entirely in the uppermost formations: hence it was long supposed that the species was extinct. A living pentacrinus has, lately, been discovered in the West Indies, and its stem and branches in a perfect state have been sent to this country; and, still more recently, a living pentacrinus was found in the Cove of Cork.

The genus echinus makes its first appearance in the midst of the secondary strata, and various species are continued into the chalk, which abounds with remains of this animal, in high preservation. It may be remarked, that scarcely any calcareous stratum, abounding in marine organic remains, has been examined, in which remains of some species of radiated animals may not be found.

*Articulated Animals.*—Some species of worms (annelides) inhabiting tubes, have left their remains in the upper secondary, and tertiary strata: remains of crustaceous animals (crabs, &c.), are not numerous in the upper secondary strata, where they first occur; but they are more common in chalk and the tertiary beds of clay covering chalk. One of the very first inhabitants of the globe appears to have been a crustaceous aquatic animal, called in England the Dudley fossil, from its being first noticed in the transition limestone near that town. Its more appropriate name is the *Trilobite*, from the three parallel lobes or divisions of the body, with ranges of transverse ventral fins, somewhat similar to those under the tail of a lobster. The largest species are found in the slate quarries at Angers, in France. A specimen in my possession, from that place, measures seven inches in length: the body has taken the flat form, common to almost all fossils found in slate, (See Plate 5.) it scarcely rises more than one third of an inch above the surface of the slate; the upper slate contains the impression or mould of the animal. To this species Guettard has given the name of *Ogyges*, from its occurrence among the most ancient rock formations, that contain vestiges of organic life.