

bear in the axils of their leaves minute circular cases, which form the receptacles of their spore-like seeds. "If we stand," says Hugh Miller, "on the outer edge of one of those iron-bound shores of the Western Highlands, where rock and skerries are crowned with sea-weeds; the long cylindrical lines of *chorda-filum*, many feet in length, lying aslant in the tideway; long shaggy bunches of *Fucus serratus* and *F. nodosus* drooping from the sides of the rock; the flat ledges bristling with the stiff cartilaginous many-cleft fronds of at least two species of *Chondrus*; now, in the thickly-spread Fucoids of this Highland scene we have a not very improbable representation of the Thallogenuous vegetation. If we add to this rocky tract, so rich in Fucoids, a submarine meadow of pale shelly sand, covered by a deep-green swathe of *Zosteræ*, with jointed root and slim flowers, unfurnished with petals, it would be more representative still."

Let us now take a glance at the animals belonging to this period.

The class of Fishes seem to have held the first rank and importance in the Old Red Sandstone *fauna*; but their structure was very different from that of existing fishes: they were provided with a sort of cuirass, and from the nature of the scales were called *Ganoid* fishes. Numerous fragments of these curious fishes are now found in geological collections; they are of strange forms, some being completely covered with a cuirass of many pieces, and others furnished with wing-like pectoral fins, as in *Pterichthys*.

Let any one picture to himself the surprise he would feel should he, on taking his first lesson in geology, and on first breaking a stone—a pebble, for instance, exhibiting every external sign of a water-worn surface—find, to appropriate Archdeacon Paley's illustration, a watch, or any other delicate piece of mechanism, in its centre. Now, this, thirty years ago, is exactly the kind of surprise that Hugh Miller experienced in the sandstone quarry opened in a lofty wall of cliff overhanging the northern shore of the Moray Frith. He had picked up a nodular mass of blue Lias-limestone, which he laid open by a stroke of the hammer, when, behold! an exquisitely shaped Ammonite was displayed before him. It is not surprising that henceforth the half-mason, half-sailor, and poet, became a geologist. He sought for information, and found it; he found that the rocks among which he laboured swarmed with the relics of a former age. He pursued his investigations, and found, while working in this zone of strata all around the coast, that a certain class of fossils abounded; but that in a higher zone these familiar forms disappeared, and others made their appearance.

He read and learned that in other lands—lands of more recent