

shore of the Moray Frith." Here the geology of the district exhibited itself in section.

"We see in one place the primary rock, with its veins of granite and quartz, — its dizzy precipices of gneiss, and its huge masses of hornblende; we find the secondary rock in another, with its bed of sandstone and shale, — its spars, its clays, and its nodular limestones. We discover the still little known but highly interesting fossils of the Old Red Sandstone in one deposition; we find the beautifully preserved shells and lignites of the lias in another. There are the remains of two several creations at once before us. The shore, too, is heaped with rolled fragments of almost every variety of rock, — basalts, ironstones, hypersthènes, porphyries, bituminous shales, and micaceous schists. In short, the young geologist, had he all Europe before him, could hardly choose for himself a better field. I had, however, no one to tell me so at the time, for geology had not yet travelled so far north; and so, without guide or vocabulary, I had to grope my way as I best might, and find out all its wonders for myself. But so slow was the process, and so much was I a seeker in the dark, that the facts contained in these few sentences were the patient gatherings of years." — *Old Red Sandstone*, pp. 9, 10.

In this rich field of inquiry, our author encountered, almost daily, new objects of wonder and instruction. In one nodular mass of limestone he found the beautiful ammonite, like one of the finely sculptured volutes of an Ionic capital. Within others, fish-scales and bivalve shells; and in the centre of another he detected a piece of decayed wood. Upon quitting the quarry for the building upon which the workmen were to be employed, the workmen received half a holiday, and our young philosopher devoted this valuable interval to search for certain curiously shaped stones, which one of the quarriers told him resembled the heads of boarding-pikes, and which, under the name of *thunder-bolts*, were held to be a sovereign remedy for cattle that had been bewitched. On the shore two miles off, where he expected these remarkable bodies, he found deposits quite different either from the sandstone cliffs or the primary rocks further to the west. They consisted of "thin strata of limestone, alternating with thicker beds of a black slaty substance," which burned with a bright flame and a bituminous odor. Though only the eighth part of an inch thick, each layer contained thousands of fossils peculiar to the lias, — scallops and gryphites, ammonites, twigs and leaves of plants, cones of pine, pieces of charcoal, and scales of fishes, — the impressions being of a chalky whiteness, contrasting strikingly with their black bituminous lair. Among these fragments of animal and vegetable life, he at last detected his *thunder-bolt* in the