

of Scotland as strongly saliferous as any of the newer sandstones, of well nigh as bright a brick-red tint, of as friable and mouldering a texture, and variegated as thickly with its specks and streaks of green and buff-color. But in all these instances there are strongly characterized groups of fossils, which, like the landmarks of the navigator, or the findings of his quadrant, establish the true place of the formations to which they belong. Like the patches of leather, of scarlet, and of blue, which mark the line attached to the deep-sea lead, they show the various depths at which we arrive. The Earls of Sutherland set themselves to establish a coal-work among the chambered univalves of the Oolite, and a vast abundance of its peculiar bivalves. The coal-borers who perforated the Lias near Cromarty passed every day to and from their work over one of the richest deposits of animal remains in the kingdom — a deposit full of the most characteristic fossils; and drove their auger through a thousand belemnites and ammonites of the upper and inferior Lias, and through gryphites and ichthyodorulites innumerable. The sandstones of Strathearn and the Carse of Gowrie yield their plates and scales of the *Holoptychius*, the most abundant fossil of the Upper Old Red; and the shale of the little dell in which the first Earl of Cromarty set his miners to work, contains, as I have said, plates of the *Cocosteus* and scales of the *Osteolepis* — fossils found only in the Lower Old Red. Nature, in all these localities, furnished the index, but men lacked the skill necessary to decipher it.* I may mention that, inde-

* There occurs in Mr. Murchison's *Silurian System* a singularly amusing account of one of the most unfortunate of all coal-boring enterprises; the unlucky projector, a Welsh farmer, having set himself to dig for coal in the lowest member of the system, at least six