a sun-burned brick, and has chopped into polygonal partings, with wide rents between. And finally, let us suppose the whole in this state laid under water at the return of stream tides, and exposed to the ordinary sedimentary action. Does it not seem probable that the alternating beds in all their conditions would be given us by such a process? In the stratum represented by the mud-bank, the stone would be of what I have termed a *felted*, not a fissile character; its organic remains would exist in a fragmentary and scattered state,—for, torn up from their places of original deposition, and rolled onwards in the storm-impelled mud, they could not fail to be broken up and dispersed; and farther, they would be in large part those of bulky deep-sea fishes. And lastly, the surface of these beds would be polygonally cracked and flawed, and the wider cracks filled up by the substance of the overlying strata. And these overlying strata, on the other hand,—the result of a period of quiet deposition in shallow water,—would be regularly bedded, and their ichthyic remains, consisting mainly of small littoral fishes, would be preserved in a state of comparative entireness. For, however, such numerous repetitions of alternately *felted* and fissile ripple-marked strata as we find in the neighbourhood of Thurso,—repetitions carried on for hundreds of feet in vertical extent,—we require yet another condition,—that condition of gradual subsidence in the general crust which can alone account for the fact so often pressed upon the geologist in exploring the Coal Measures, that in deposits thousands of feet in thickness, each stratum in succession had been laid down in a shallow sea.]

It is a curious circumstance, that the Old Red flagstones which lie along the southern flanks of the Grampians, and are represented by the gray stone known in commerce as the Arbroath Pavement, have not, so far as is yet known, an organism in common with the Old Red flagstones of the north.