

these rocks were actually the *first-formed rocks of what is now Scotland*,—that the gneiss was gneiss, and the slate was slate, ere ever our oldest fossiliferous formations began to be deposited, or the organisms which they contain had lived or died. Into the question raised regarding the form in which they were deposited, or the condition of our planet during the period of their deposition, I do not at present enter. On the other point, however,—the comparative antiquity of these unfossiliferous rocks in Scotland,—the evidence seems very conclusive: the base of some of the oldest deposits in which we find organisms enclosed consists of broken, and in most cases water-rolled, fragments of the gneisses, quartz-rocks, clay-slates, and mica-schists of the primary regions of the country.¹ These primary regions are of great extent. The *gneiss* region contains nearly ten thousand square miles of surface; the mica-schists, fully three thousand; and the quartz-rock and clay-slate united about fourteen hundred miles more. Comprising almost all the Highlands of Scotland, with the greater part of two of our Lowland counties, Banffshire and Aberdeen, their entire area, if we add about fifteen hundred miles additional of granite and primary porphyry, does not fall short of sixteen thousand square miles. It would be a bold and perilous task for one who has in some degree appreciated those sublimely impressive word-paintings of the Highlands which have added so largely to the well-earned celebrity of your distinguished President, and which seem invested with the very atmosphere of our hills, or who has seen with admiration and delight not only the very features, but all the poetry, of our noble mountain scenery, glowing from the canvas of Macculloch and of Hill,—it would, I say, be a perilous task, under the recollection of achievements such as theirs, to attempt a dull analysis of the geologic principles on which the peculiarities of our Highland

¹ See Murchison's *Siluria*, 2d edition, App. 553, 554, and 556.