

the Highlands to be of the same age as some of the older fossiliferous Silurian rocks, whether in the form of slates in Wales, of grauwacke-schist in the southern counties of Scotland, or in the conditions of mud and sand at St. Petersburg. The conclusions as respects the correlation of all the older rocks of Scotland have now indeed been summed up by Mr. Geikie and myself in the Geological Sketch-map of Scotland which we have just published, and a copy of which is now exhibited. Not the least interesting part of that production, that which explains the age of all the igneous or trappean rocks of the south of Scotland, as well as all the divisions of the Carboniferous formation, is exclusively the work of my able colleague.

“But if, through the labours of hard-working geologists, we have arrived at a clear idea of the first recognizable traces of life and their sequences, we are yet far from having satisfied our minds as to the *modus operandi* by which whole regions of such deposits have, as in the Highlands, been transmuted into a crystalline state. Let us therefore hope that, ere this meeting closes, we may receive instructions from some one of the band of foreign or British geologists who have by their experimental researches been endeavouring to explain the processes by which such wonderful changes in the former condition of the sedimentary deposits have been brought to light; such as that by which strata once resembling the incoherent Silurian clay which we see in Russia have been hardened into such rocks as the slaty grauwacke of other regions, and how hard schists of the south of Scotland have been metamorphosed into the crystalline rocks of the Highlands. But why are British geologists to see any difficulty in admitting what I have proposed, that vast breadths of these crystalline stratified rocks of the Highlands are of Lower Silurian age? Many years ago I suggested, after examination, that some of the crystalline rocks near Christiania in Norway were but altered extensions of the Silurian deposits of that region; and since then Mr. David Forbes and M. Kjerulf have demonstrated the truth of the suggestion. Again, and on a vastly larger scale, we know that in North America all the noted geologists, however they may differ on certain details, agree in recognising the fact that the vast eastern seaboard range of gneissic and micaceous schists is made up of metamorphosed strata, superior even to the lowest of the Silurian rocks. Logan, Rogers, Hall and Sterry Hunt are decidedly