

stone. They were originally supposed to be Old Red Sandstone, and to represent the lower sandstones and conglomerates of that system in the east of Sutherland and Ross. After the discovery of what were believed to be Lower Silurian fossils in the Durness limestones, Murchison assigned these sandstones to the Cambrian system. But the recent detection of the *Olenellus*-zone among the strata which unconformably overlies them proves that they must be of still older date. They are now classed as Torridonian in the pre-Cambrian formations or systems of Britain.

The interval between the deposition of the highest visible portion of the Torridonian series and the base of the Cambrian formations must have been of prolonged duration. For not only had the red sandstones been upraised, but they had been profoundly trenched by denudation. So vast and unequal was the erosion that while at one place the lower quartzites are seen reposing on 3000 or 4000 feet of Torridon sandstone, at another only a few miles distant they rest directly on the Lewisian gneiss, the intervening massive group of strata having been entirely bared away.<sup>32</sup>

But besides the solid areas of pre-Cambrian rocks in the northwest of Scotland there are extensive tracts where these rocks do not remain in their original positions, but have been pushed into their present places by great subterranean disturbances, and have actually been shoved over strata of recognizably Cambrian age. In the account already given (pp. 1036-1041) of the structure of that region it was shown that by these earth-movements slice after slice of the Lewisian gneiss and of the Torridon sandstone has been shorn from the mass of these formations below ground, has been piled one on the other, and has been driven westward over the Cambrian strata which originally lay above them; that the rocks, subjected to such enormous pressure, dislocation and deformation, have undergone serious metamorphism; and that finally by a gigantic rupture and thrust a thick series of gneissose flagstones ("Moine schists") have been brought forward. By way of further explanation of this extraordinary structure the annexed sections are given (Figs. 334, 335). It will be seen what an enormous body of gneiss has here been displaced and pushed over the Cambrian strata, which in turn have been cut into slices and piled up above and against each other. Among the alterations of the

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<sup>32</sup> This structure is shown both in Figs. 311 and 334.