

not until he had devoted some days to the examination of actual glaciers in the Alps that he acquiesced in the correctness of Professor Agassiz's theory relative to Switzerland. On his return to Neuchâtel from the glaciers of Rosenlauri and Grindelwald, he informed M. Agassiz that he had noticed in Scotland and England phenomena similar to those he had just examined, but had hitherto attributed them to diluvial action: thus in 1811 he had observed on the head rocks on the left side of the gorge of the Tay, near Dunkeld, rounded and polished surfaces; and in 1824, in company with Mr. Lyell, grooves and striæ on granite rocks near the eastern base of Ben Nevis. About the same time Sir George Mackenzie pointed out to Buckland in a valley near the base of Ben Wyvis, a high ridge of gravel, laid obliquely across in a manner inexplicable by any action of water, but in which, after his examination of the effects of glaciers in Switzerland, he recognised the form and condition of a moraine.

After these general remarks, Dr. Buckland proceeded to describe the evidence of glaciers observed by him in Scotland during the previous autumn, partly before and partly after an excursion, in company with Professor Agassiz; but he forbore to dwell on the phenomena of parallel terraces, though he was convinced that they were the effects of lakes produced by glaciers.

The following discussion then took place¹:—

Mr. MURCHISON called upon the mathematicians and physical geographers present to speak of the objections to Dr. Buckland's glacial hypothesis, he himself should attend only to the facts of the case. Of the scratches and polish on the surface of certain rocks there is no doubt, and 'Are glaciers the cause?' is the question. Could they be done by ice alone? If we apply it to any as the necessary cause, the day will come when we shall apply it to all. Highgate Hill will be regarded as the seat of a glacier, and Hyde Park and Belgrave Square will be the scene of its influence. Dr. Buckland has in his paper *assumed* that all these heaps of diluvium are moraines; but I would rather examine the subject under the old name Diluvium, and with our old ideas of diluvial action, than by using the term moraines, assume the question proved. On Schiehallion there are . . . rocks. If

¹ The notes of discussion were made by S. P. Woodward, then sub-curator to the Geological Society, and they were printed in the *Midland Naturalist*, vi. 1883, pp. 225-29. One or two remarks have been inserted in square brackets to complete the sense of the observations; otherwise the discussion is an exact copy of the MS. notes.