GLACIATION AND ITS IMPACT ON THE LANDSCAPE

Dr Richard Waller, senior lecturer in Geography at Keele University, gave a fascinating and informative account by Zoom of the formation, movement and effects of glaciation to an audience of over 60 members of Penrith and North Lakes U3A group last week. He explained that 10% of the world's land surface is covered by glaciers and ice sheets, showing illustrations of well-known examples including La Mer de Glace in France and Grosser Aletschgletscher in Switzerland. Seeing his first glacier at a young age, when on holiday with his parents, sparked an abiding interest which led to his career in researching the phenomenon of glaciation. Richard guided us through the stages of accumulation and subsequent ablation of glaciers explaining how quickly some of the world's glaciers are retreating, exemplifying this with a graph of the shrinking of the Grosser Aletsch glacier since 1940. We were shown the impact of recent and former glaciers on many landscapes, exemplified by striations on the surfaces of rocks passed over by glaciers, by the transport of large boulders, known as erratics, well away from their original places of formation, and by the deposition of sediment or moraine.


Red Tarn, a glacial tarn below Helvellyn's summit

Previous periods of glaciation in Britain such as the Ice Age of about 20,000 years ago were considered. Much of Britain, apart from Southern England and South Wales, were covered by the British-Irish ice sheet. An amazing depiction of the advance and retreat of the ice sheet during this last period of glaciation in Britain has been devised by 'Britice'. Signs of these earlier periods of glaciation are well illustrated in our local landscape. Richard showed us many familiar examples of such features. Striding and Swirral Edges on Helvellyn are glacial arrêtes, Red Tarn is a glacial tarn in a corrie; Langdale is a typical glacial valley; hummocky ridges of moraine can be seen at Greenup Gill near Rosthwaite; Bannerdale near Bencathra shows us an example of the brief reformation of the British-Irish ice sheet. Drumlins formed in the Howgills and the north Pennines as the ice retreated into the Irish Sea. Old meltwater streams running parallel to the fells rather than downwards are readily seen near Murton, Knock and on the western flank of Great Dun Fell. Many local examples of erratics can be found in our area: Richard showed us a large Shap granite boulder perched on a limestone base, for instance. Interestingly, we heard that as the ice melted from the Eden Valley, some found its way to the east coast and later it retreated into the Irish Sea.

Richard's talk prompted much interest and a range of questions took the subject in various further directions, including the reasons behind glacial formation; the possible impact of volcanic activity on the cooling of the earth was considered; and the ice albedo effect

whereby snow and ice contribute to the cooling of the earth by reflecting solar radiation was explored.

Josie Dunlop, chair of our local U3A and who has a particular interest in Geology, thanked Richard warmly for his talk which also prompted great applause from the members watching it at home.