

place in post-tertiary times, I should obtain some fresh verifications of their authenticity.

In the hope of clearing away all doubts on this subject, I determined to visit North Wales in the summer of 1863, and, accordingly, in company with my friend the Rev. W. S. Symonds, I first examined some points in the neighbourhood of Snowdon, where Professor Ramsay had seen marine shells at the height of about 1,300 feet. But at this point we were entirely unsuccessful; and I am persuaded that, like many of our predecessors, we should also have failed in our search on Moel Tryfaen, had we not fortunately ascended that hill just after the newly-formed Alexandra Mining Company had opened a new and deep cutting in the drift near the summit of that hill, probably on the exact spot where Mr. Trimmer, in 1831, removed some of the same gravel in search of slates.

In the long and deep cutting alluded to, we had an opportunity of studying a mass of stratified and incoherent sand and gravel, 35 feet thick, for the most part in thin and irregular layers, and containing here and there fragments of shells, with a few entire ones. The beds bore every mark of gradual and successive accumulation, some layers being composed of fine, others of coarser materials, and in the lower beds were several large boulders, one or two of them heavier than we could lift, of far-transported rocks glacially polished, and scratched on more than one side. Underneath the whole mass we saw the edges of the vertical slates exposed to view.

Mr. R. D. Darbshire had already called the attention of the workmen and overseers to the fossil shells. We received from the men, and collected ourselves, a set of specimens, which, though many of them were in fragments, Mr. Jeffreys was able to refer to twenty species, all of them now living in the British or Northern seas. When I showed them to Dr. Torell, he observed that, although they constituted a Northern fauna, and bore testimony to a colder climate than that of the present British seas, they by no means indicated such an intensity of cold as did the assemblage of shells lately brought to light on the borders of the estuaries of the Forth and Tay, where, in the ancient glacial drift or clay of Elie in Fife, and Errol in Perthshire, the Rev. Thomas Brown has found thirty-five shells of living species, all now inhabitants of arctic regions, such as *Leda truncata*, *Pecten Grænlandicus*, *Crenella lævigata* Gray, *Crenella nigra* Gray, and others first brought by Captain Parry from the coast of Melville Island, lat. 76° N. The same fossil fauna of Scotland exhibits no admixture of species peculiar to the seas south of Spitzbergen, and the individuals consist of varieties proper to the coldest latitudes.