

Others have been left strewn over the bottom of the large intervening vale of Strathmore.*

It may be argued that the transportation of such blocks may have been due not to floating ice, but to a period when Strathmore was filled up with land ice, a current of which extended from the Perthshire Highlands to the summit of the Sidlaw Hills, and the total absence of marine or freshwater shells from all deposits, stratified or unstratified, which have any connection with these erratics in Forfarshire and Perthshire may be thought to favour such a theory.

But the same mode of transport can scarcely be imagined for those fragments of mica-schist, one of them weighing from eight to ten tons, which were observed much farther south by Mr. Maclaren on the Pentland Hills, near Edinburgh, at the height of 1,100 feet above the sea, the nearest mountain composed of this formation being fifty miles distant.† On the same hills, also, at all elevations, stratified gravels occur which, although devoid of shells, it seems hardly possible to refer to any but a marine origin.‡

Although I am willing, therefore, to concede that the glaciation of the Scotch mountains, at elevations exceeding 2,000 feet, may be explained by land ice, it seems difficult not to embrace the conclusion that a subsidence took place not merely of 500 or 600 feet, as demonstrated by the marine shells, but to a much greater amount, as shown by the present position of erratics and some patches of stratified drift. The absence of marine shells at greater heights than 525 feet above the sea, will be treated of in a future chapter. It may in part, perhaps, be ascribed to the action of glaciers, which swept out marine strata from all the higher valleys, after the re-emergence of the land.‡

* Proceedings of the Geological Society, vol. iii. p. 344.

p. 220.

† Maclaren, *Geology of Fife, &c.*

‡ See Appendix F, Geikie on Scotch Glacial Drift.