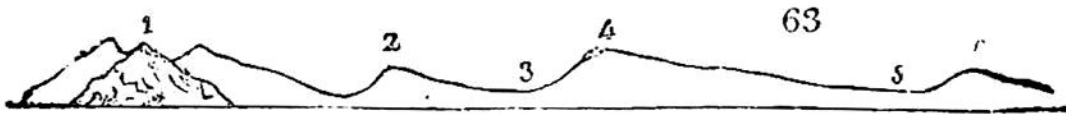


physical configuration of the neighbouring regions had great influence: they are found to descend from the Cumbrian mountains northward in the Vale of Eden to Carlisle, eastward to the foot of the Penine chain, southward by the Lune and the Kent to the narrow tract between Bolland Forest and the bay of Morecambe; and from the vicinity of Lancaster they are traced at intervals through the comparatively low country of Preston and Manchester, lying between the sea and the Yorkshire and Derbyshire hills, to the valley of the Trent, the plains of Cheshire and Staffordshire, and the vale of the Severn, where they occur of great magnitude. It thus appears, that the Penine chain, ranging north and south, acted as a great natural dam, limiting the eastward distribution of the blocks; but at Stainmoor, directly east of Shap fells, a comparatively low part of the chain (1400 feet above the sea), granite from Shap fell, which is about 1500 feet, as well as sienitic rocks from Carrock fell, which is 2200 feet, and red conglomeritic masses from Kirby Stephen, only 500 feet above the sea, have been drifted over the ridge.



1. Shap fells, whence the granite blocks have been drifted to
2. Orton Scar, a range of limestone hills, and from these have passed
3. The Vale of Eden, in new red sandstone.
4. Stainmoor Forest, across which, in the lowest part of the range of the Penine chain of hills, the boulders have gone to
5. The Vale of York, &c.
6. The Oolitic moorlands.

This great barrier passed, the blocks are scattered from Stainmoor, as from a new centre, to Darlington, Redcar, Stokesley, Osmotherly, Thirsk, and the whole front of the Hambleton hills; they have gone down the whole length of the vale of York, and by the base of the chalk wolds to the Humber. But the barrier of oolite and chalk has been in places surmounted, and the