

and enters its estuary. It is probable that the great line of fracture, which here truncates the Ochil Hills, may have led to the formation of such a hollow at the surface as would guide the Forth out to sea (see Fig. 75). But the widening of the fissures into a valley has been effected by erosion. The actual fissure is only a few yards in width, but the valley at its narrowest part is more than a mile. The Abbey Craig and Craigforth are little prominences left in the removal of the rock that once surrounded and covered them. When we cast our eye over this singular strait, with its abrupt sides and its flat meadow-like bottom, stretching away into the wide mosses of Menteith on the one side and the broad Carse of Falkirk on the other, we recognise that, in the cutting down and widening of this gap, the Forth may have had much help from the sea. Yonder, indeed, not many miles to the east, is the blue firth. The level valley is plainly an old sea-bottom, and sea-shells are dug up abundantly from its sands and clays. Even now, so little is it above high-water mark that a depression of ten feet would send the tide up the valley for eighteen miles,¹ and if the land were sunk very little more, the firths of Clyde and Forth would meet, and a set of vexed tides would ebb and flow across the centre of Scotland. Such has doubtless often been the condition of the country in the geological past.

The course of the Clyde across the Midland Valley is much longer than that of the other two rivers, and presents many additional points of geological interest. This stream takes its rise among the Southern Uplands, and flowing northward across the strike of the Silurian rocks, traverses the boundary fault, with which for a short way it runs parallel, and then, skirting the base of Tinto, winds across

¹ *Trans. Roy. Soc. Edin.* iii. 268.