

was wrenched from its fastenings at a height of 86 feet and washed round to the other side. Such enormous force cannot but produce marked effects on all rocks exposed to its fury. In May 1807, during the building of the lighthouse, six large blocks of stone which had been landed on the reef, were removed by the force of the sea and thrown over a rising ledge to the distance of twelve or fifteen paces, and an anchor, weighing about 22 cwt., was thrown up upon the rock.<sup>1</sup> This power of transport from the surrounding sea-bed during severe gales has been frequently observed here. Stones measuring upwards of 30 cubic feet, or more than two tons in weight, have often been cast upon the reef from deeper water.<sup>2</sup> These large boulders are so familiar to the light-keepers at this station as to be by them termed *travellers*.<sup>3</sup>

The Scottish coast-line from the mouth of the Firth of Tay to Stonehaven is formed of Old Red Sandstone, and, as usual with that formation, presents a picturesque succession of sea-cliffs of red sandstone worn into tunnels and solitary stacks, crags of hard volcanic rocks that seem ready to topple into the surf, creeks in which the gurgling tides are for ever rolling to and fro, caves sometimes out of reach of the waves, and then coated with mosses and ferns, sometimes at a low level, and filled well-nigh to the brim when the tide runs at its full, while the space between tide-marks is a chaos of craggy rocks and skerries, and huge scattered boulders. Amid such wild ruin as this, the mind instinctively thinks of some cataclysm or convulsion of nature, some earthquake or outbreak of volcanic fire that

<sup>1</sup> R. Stevenson, *Account of Erection of Bell-Rock Lighthouse*, p. 163.

<sup>2</sup> The sea at a distance of 100 yards all round the sunken reef of the Bell Rock has a depth of two or three fathoms at low water.

<sup>3</sup> *Edin. Phil. Journ.* iii. 54.