tuff is furnished by abundant pieces of inclosed coniferous wood, which may have belonged to trees or brushwood that grew upon the dry slopes of the cones; for these fragments are seldom to be seen in the estuarine and marine strata, out of which the necks rise.

It is common to find among necks of tuff numerous dikes and veins of lava which, ascending through the tuff, are usually confined to it, though occasionally they penetrate the surrounding strata. They are often beautifully columnar, the columns diverging from the sides of the dikes and being frequently curved.

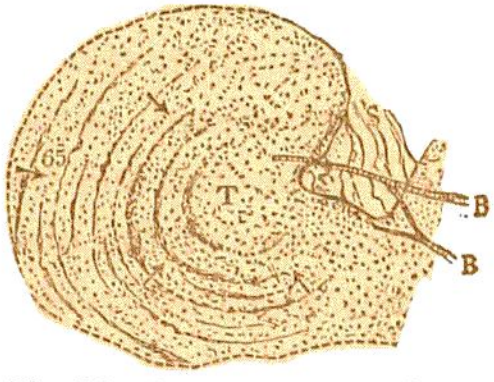

Fig. 299.—Plan of Neck, on shore, at Elie, Fife.

T, tuff; the arrows marking the inward dip; S, sandstones through which the Neck has been blown open; B B, basalt dikes.

Proofs of subsidence round the sides of vents may often be observed. Stratified rocks, through which a volcanic funnel has been opened, commonly dip into it all round, and may even be seen on edge, as if they had been dragged down by the subsidence of the materials in the vent. Beautiful examples occur along the shores of the Firth of the Forth.[38] (Figs. 300, 301). The fact of subsidence beneath modern volcanic cones has been already referred to (pp. 395, 418).

Effects on Contiguous Rocks.—The strata round a neck are usually somewhat hardened. Sandstones have acquired a vitreous lustre; argillaceous beds have been indurated into porcellanite; coal-seams have been fused, blistered, burned, and rendered unworkable. The coal-workings in Fife and Ayrshire have revealed many inter-

[38] Trans. Roy. Soc. Edin. xxix. p. 469. For an excellent example from New Zealand, see Heaphy, Q. J. Geol. Soc. 1860, p. 245.