logical structure represented in Fig. 239. By noting the angles of dip it is possible to estimate the thickness of a series of beds, and how far beneath the surface any given bed might be expected to be found. If, for instance, the horizontal distance across the strike between beds S and A (Fig. 238) were found to be 200 feet, with a mean dip of 15°, the actual thickness would be 51·8 feet, and bed A would be found at a depth of 53·8 feet below the outcrop of S. If the same development of strata continues inland, the bed *a* should be found at a little more than 200 feet beneath the surface, if a bore were sunk to it in the quarry (Q). If the total depth of rock between *a* and *b* be 1000 feet, then evidently, if the strata could be restored to their original approximately horizontal position, with bed *a* at the surface, bed *b* would be covered to a depth of 1000 feet. It will be noticed also that, as the angle of dip increases, the outcrops
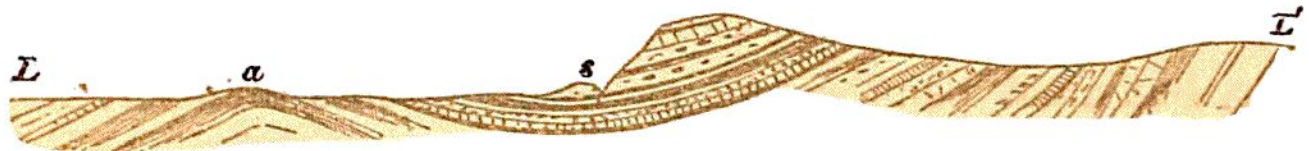

Fig. 239.—Section along the line L L' in Fig. 238.

are thereby brought closer together. Where the outcrops run along the face of a cliff or steep bank (B) they must likewise be drawn together on a map. In reality, of course, these variations take place though the same vertical thickness of rock may everywhere intervene between the several outcrops.

It is usually desirable to estimate the thicknesses of strata, especially where, as in Fig. 239, they are exposed in continuous section. A convenient though not strictly accurate rule for this purpose may be applied in cases where the angle of inclination is less than 45°. The real thickness of a mass of inclined strata may be taken to be $\frac{1}{12}$ of its apparent thickness for every 5° of dip. Thus if a set of beds dips steadily in one direction at 5° for a horizontal space of 1200 feet measured perpendicularly to the strike, their actual thickness will be $\frac{1}{12}$, or 100 feet. If the dip be 15°, the true thickness will be $\frac{3}{12}$, or 300 feet, and so on.[a]

[a] Maclaren's "Geology of Fife and the Lothians," 2d edit. p. xix. For tables for estimating dip and thickness see Jukes's "Manual," p. 748; Green's "Physical Geology," p. 460.