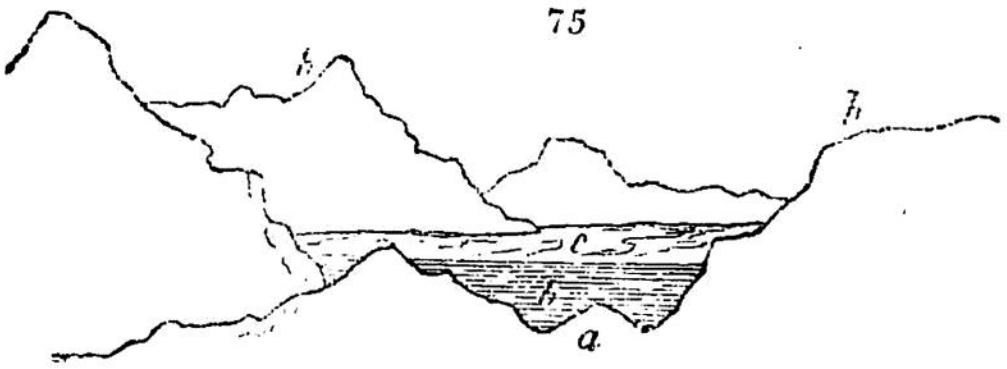
or at least their surface is generally level in the direction across the valley, whatever undulations exist beneath, and however rapid may be the longitudinal declivity of the valley. This is well seen in many valleys of the Swiss Jura, the Cotswold Hills, &c.



a. Irregular surface which is the original basis of the valley. *b.* The sediment left in it, with a plane surface *as if* deposited in a lake. *c.* The surface of the valley, uniformly declining among *h*, the bordering mountains.

When the materials are gravel and coarse sand, deposited by an impetuous stream, the general surface may be level, and yet the laminæ beneath are frequently much inclined, with slopes in various directions, as Mr. Lyell has noticed with regard to the detritus left by the stormy waters of the Arve. The same thing occurs in many of the stratified rocks which appear to have been accumulated under violent agitation near the sea-shore. (See Diag. No. 20. p. 61.)

Lakes on the Course of Rivers.

Plane surfaces existing along the course of valleys, are commonly, without further question, supposed to be indicative of the site of ancient lakes, which have been slowly but completely filled: the supposition is often correct, but it is sometimes erroneous. Rapid rivers, which, in times of inundation, drift coarse materials down their rough beds, and deposit them in the expansions of their valleys, are thus partly choked in their courses, and turned into new channels. Thus they wander irregularly over a large area, every where