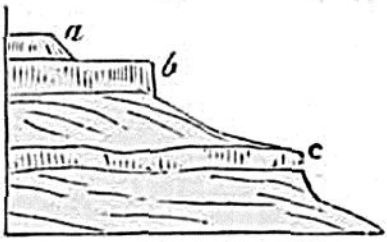
http://www.geology.19thcenturyscience.org/books/1859-Lyell-Elements/README.h

ceased to flow, and grown solid, very commonly ends in a steep slope, as at *a*, fig. 620. But, secondly, the step-like appearance arises more frequently from the mode in which horizontal masses of igneous rock, such as *b c*, intercalated between aqueous strata, or showers of volcanic dust and ashes, have, subsequently to their origin, been exposed, at different heights, by denudation. Such an outline, it is true, is not peculiar to trap rocks; great beds of limestone, and other hard kinds of stone, often presenting similar terraces and precipices; but these are usually on a smaller scale, or less numerous, than the volcanic *steps*, or form less decided features in the landscape, as being less distinct in structure and composition from the associated rocks.

Fig. 620.



Step-like appearance of trap.

Although the characters of trap rocks are greatly diversified, the beginner will easily learn to distinguish them as a class from the aqueous formations. Sometimes they present themselves, as already stated, in tabular masses, which are not divided by horizontal planes of stratification in the manner of sedimentary deposits. Sometimes they form chains of hills often conical in shape. Not unfrequently they are seen as "dikes" or wall-like masses, intersecting fossiliferous beds. The rock is occasionally columnar, the columns sometimes decomposing into balls of various sizes, from a few inches to several feet in diameter. The decomposing surface very commonly assumes a coating of a rusty iron color, from the oxidation of ferruginous matter, so abundant in the traps in which augite or hornblende occurs; or, in the felspathic varieties of trap, it acquires a white opake coating, from the bleaching of the mineral called felspar. On examining any of these volcanic rocks, where they have not suffered disintegration, we rarely fail to detect a crystalline arrangement in one or more of the component minerals. Sometimes the texture of the mass is cellular or porous, or we perceive that it has once been full of pores and cells, which have afterwards become filled with carbonate of lime, or other infiltrated mineral.

Most of the volcanic rocks produce a fertile soil by their disintegration. It seems that their component ingredients, silica, alumina, lime, potash, iron, and the rest, are in proportions well fitted for the growth of vegetation. As they do not effervesce with acids, a deficiency of calcareous matter might at first be suspected; but although *the carbonate* of lime is rare, except in the nodules of amygdaloids, yet it will be seen that lime sometimes enters largely into the composition of augite and hornblende. (See Table, p. 475.)

Cones and Craters.—In regions where the eruption of volcanic matter has taken place in the open air, and where the surface has never since been subjected to great aqueous denudation, cones and craters constitute the most striking peculiarity of this class of formations. Many hundreds of these cones are seen in central France, in the ancient provinces of