tains subject to disintegration by frost or the action of torrents, some loose matter is washed down annually, especially during the melting of



 A.B. Supposed original surface of rock.
C.D. Roads or shelves in the outer alluvial covering of the hill. snow, and a check is given to the descent of this detritus at the point where it reaches the waters of the lake. The waves then spread out the materials along the shore, and throw some of them upon the beach; their dispersing power being aided by the ice, which often adheres to pebbles during the winter months, and gives buoyancy to them. The annexed diagram illustrates the manner in which Dr. MacCulloch and Mr. Darwin suppose "the roads" to constitute mere indentations in a superficial alluvial coating which rests upon the hill-side, and consists

chiefly of clay and sharp unrounded stones.

Among other proofs that the parallel roads have really been formed along the margin of a sheet of water, it may be mentioned, that wherever an isolated hill rises in the middle of the glen above the level of any particular shelf, a corresponding shelf is seen at the tame level passing round the hill, as would have happened if it had once formed an island in a lake or fiord. Another very remarkable peculiarity in these terraces is this; each of them comes in some portion of its course to a col, or passage between the heads of glens, the explanation of which will be considered in the sequel.

Those writers who first advocated the doctrine that the roads were the ancient beaches of freshwater lakes, were unable to offer any probable hypothesis respecting the formation and subsequent removal of barriers of sufficient height and solidity to dam up the water. To introduce any violent convulsion for their removal was inconsistent with the uninterrupted horizontality of the roads, and with the undisturbed aspect of those parts of the glens where the shelves come suddenly to an end. Mr. Agassiz and Dr. Buckland, desirous, like the defenders of the lake theory, to account for the limitation of the shelves to certain glens, and their absence in contiguous glens, where the rocks are of the same composition, and the slope and inclination of the ground very similar, started the conjecture that these valleys were once blocked up by enormous glaciers descending from Ben Nevis, giving rise to what are called in Switzerland and in the Tyrol, glacier-lakes. After a time the icy barrier was broken down, or melted, first, to the level of the second, and afterwards to that of the third road or shelf.

In corroboration of this view, they contended that the alluvium of Glen Roy, as well as of other parts of Scotland, agrees in character with the moraines of glaciers seen in the Alpine valleys of Switzerland. Allusion will be made in the eleventh chapter to the former existence of glaciers in the Grampians: in the mean time it will readily be conceded that this hypothesis is preferable to any previous lacustrine theory, by