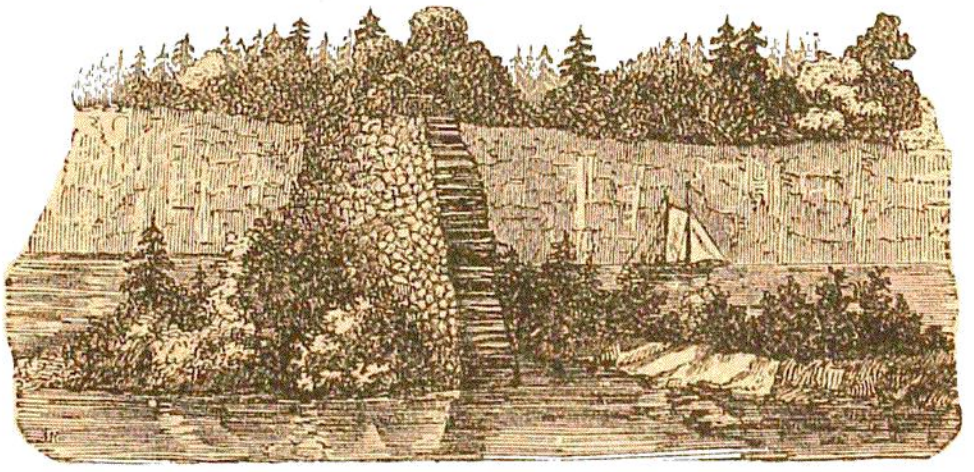
When a trap vein, or dyke, is columnar, the columns often lie horizontal, or rather perpendicular to the sides of the vein; and thus is produced a wall of stones regularly fitted to one another and laid up, apparently by man; while often a decomposition of the surfaces of the blocks produces a powder resembling disintegrated mortar. Such a wall occurs in Rowan county, North Carolina. Fig. 70 shows a similar example on Lake Superior.

Fig. 70.



Trap Dyke, Lake Superior.

Greenstone columns are quite common in North America, either standing upright or leaning a few degrees. The Palisadoes upon the Hudson river, a few columns upon Penobscot river, in Maine, and others at *Titan's Pier*, near Mt. Holyoke, on Connecticut river, are well-known examples in the eastern part of the continent. But the most extensive development of them is in Oregon and Washington Territories, especially upon Columbia river. The banks are from 400 to 1000 feet high, and are made up of columns of trap or basalt in successive rows, superimposed upon one another, and separated by a few feet of amygdaloid, conglomerate, and breccia.

We suppose that the columnar structure of trap rocks has resulted from a sort of crystallization, while they were cooling under pressure from a melted state, for two reasons: *First*, Precisely similar columns are found in recent lavas; and *secondly*, from experiment. Mr. Gregory Watt melted 700 pounds of basalt, and caused it to cool slowly, when globular masses were formed, which enlarged and pressed against one another until regular columns were the result.

Magnetism of Rocks.—Many unstratified and metamorphic rocks sensibly affect a magnet. When there is a large amount of magnetic iron present, the magnetic needle is affected at a considerable distance from the ledge. But there are many cases where the magnetizer is present in such small quantities, as to be unappreciated by the needle, except when placed in immediate proximity to the rock.