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the pumiceous superstratum; and this last follows the slope of the hill, just as it would have done had it fallen in showers from the air on a declivity partly formed of loess.

But, in general, the loess overlies all the volcanic products, even those between Neuwied and Bonn, which have the most modern aspect; and it has filled up in part the crater of the Roderberg, an extinct volcano near Bonn. In 1833 a well was sunk at the bottom of this crater, through 70 feet of loess, in part of which were the usual calcareous concretions.

The interstratification above alluded to, of loess with layers of pumice and volcanic ashes, has led to the opinion that both during and since its deposition some of the last volcanic eruptions of the Lower Eifel have taken place. Should such a conclusion be adopted, we should be called upon to assign a very modern date to these eruptions. This curious point, therefore, deserves to be reconsidered; since it may possibly have happened that the waters of the Rhine, swollen by the melting of snow and ice, and flowing at a great height through a valley choked up with loess, may have swept away the loose superficial scorim and pumice of the Eifel volcanoes, and spread them out occasionally over the yellow loam. Sometimes, also, the melting of snow on the slope of small volcanic cones may have given rise to local floods, capable of sweeping down light pumice into the adjacent low grounds.

The first idea which has occurred to most geologists, after examining the loess between Mayence and Basle, is to imagine that a great lake once extended throughout the valley of the Rhine between those two places. Such a lake may have sent off large branches up the course of the Main, Neckar, and other tributary valleys, in all of which large patches of loess are now seen. The barrier of the lake might be placed somewhere in the narrow and picturesque gorge of the Rhine between Bingen and Bonn. But this theory fails altogether to explain the phenomena; when we discover that that gorge itself has once been filled with loess, which must have been tranquilly deposited in it, as also in the lateral valley of the Lahn, communicating with the gorge. loess has also overspread the high adjoining platform near the village of Plaidt above Andernach. Nay, on proceeding farther down to the north, we discover that the hills which skirt the great valley between Bonn and Cologne have loess on their flanks, which also covers here and there the gravel of the plain as far as Cologne, and the nearest rising grounds.

Besides these objections to the lake theory, the loess is met with near Basle, capping hills more than 1200 feet above the sea; so that a barrier of land capable of separating the supposed lake from the ocean would require to be, at least, as high as the mountains called the Siebengebirge, near Bonn, the loftiest summit of which, the Ochlberg, is 1209 feet above the Rhine, and 1369 above the sea. It would be necessary, moreover, to place this lofty barrier somewhere below Cologne, or precisely where the level of the land is now lowest.

Instead, therefore, of supposing one continuous lake of sufficient extent