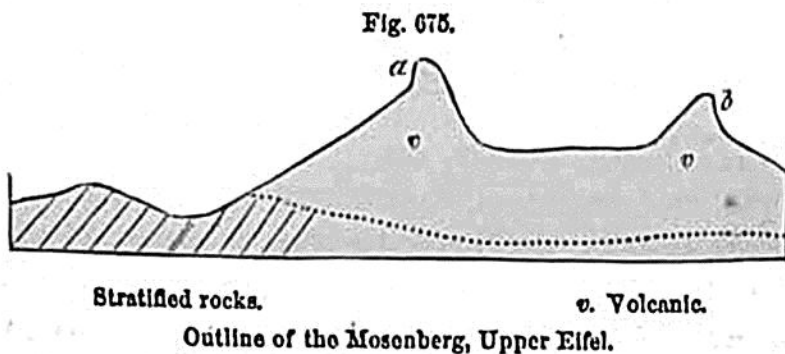


shale which exhibit no signs of the action of heat; and we look in vain for those beds of lava and scoriæ, dipping in opposite directions on every side, which we have been accustomed to consider as characteristic of volcanic vents. As we proceed, however, to the opposite side of the lake, and afterwards visit the craters *c* and *d* (fig. 674), we find a considerable quantity of scoriæ and some lava, and see the whole surface of the soil sparkling with volcanic sand, and strewed with ejected fragments of half-fused shale, which preserves its laminated texture in the interior, while it has a vitrified or scoriform coating.

A few miles to the south of the lakes above mentioned, occurs the Pulvermaar of Gillenfeld, an oval lake of very regular form, and surrounded by an unbroken ridge of fragmentary materials, consisting of ejected shale and sandstone, and preserving a uniform height of about 150 feet above the water. The side slope in the interior is at an angle of about forty-five degrees; on the exterior, of thirty-five degrees. Volcanic substances are intermixed very sparingly with the ejections, which in this place entirely conceal from view the stratified rocks of the country.\*

The Meerfelder Maar is a cavity of far greater size and depth, hollowed out of similar strata; the sides presenting some abrupt sections of inclined secondary rocks, which in other places are buried under vast heaps of pulverized shale. I could discover no scoriæ amongst the ejected materials, but balls of olivine and other volcanic substances are mentioned as having been found.† This cavity, which we must suppose to have discharged an immense volume of gas, is nearly a mile in diameter, and is said to be more than one hundred fathoms deep. In the neighborhood is a mountain called the Mosenberg, which consists of red sandstone and shale in its lower parts, but supports on its summit a triple volcanic cone, while a distinct current of lava is seen descending the flanks of the mountain. The edge of the crater of the largest cone reminded me of the form and characters of that of Vesuvius; but I was much struck with the precipitous and almost overhanging wall or parapet which the scoriæ presented towards the exterior, as at *a b* (fig. 675), which I can only explain by supposing that fragments of red-hot



\* Scrope, Edin. Journ. of Science, June, 1826, p. 145.

† Hibbert, Extinct Volcanos of the Rhine, p. 24.