

a width varying from a few inches to several feet, and with its contents often arranged in layers upon each of the two walls, in the same order from the wall. Each of these layers is called a *comb*, and the whole is styled the *gangue*. The metalliferous layer is the *ore*. Many of the most important Old World mines are based on true veins. Many, also, in America; but in many of the most celebrated mines, the mode of occurrence of the ore is different.

In the Eureka mining district, in Central Nevada, we have a regular succession of strata consisting of limestones, shales, and quartzites, ranging from the Cambrian to the lower carboniferous, but mingled with porphyritic eruptions and all shattered by a process of faulting. The silver-bearing lead ore is found imbedded in the lower Carboniferous Limestone, within masses of hydrous iron oxide. The deposits are discovered and worked out by a regular system of mining through shafts and galleries; though, in the works of the Richmond company, these formalities are discarded, and the deposits are reached and worked out by the shortest cuts. It can scarcely be said that the ore occurs here in veins. It lies in masses having cavities above. Its origin is from below; but the stratified rocks have not served as its source. But the quartz-porphyry of the region, by leaching with hot alkaline waters, may have afforded the ore; and this is thought by Curtis to have been its probable source.

The silver-bearing galena of Leadville, in Colorado, according to Emmons, has a similar mode of occurrence. The deposit of the silver-bearing minerals took place in the lowest member of the Carboniferous System. They were derived from circulating waters, which obtained them in passing through eruptive rocks. How introduced into the eruptive rocks is a matter for speculation.

In the lead-producing region of Wisconsin, Iowa, and Illinois, the galena and blende occur as a lining on the walls of cavities or caverns in a magnesian limestone of upper Cambrian age. In Missouri, similar cavities in the Lower Magnesian Limestone, of lower Cambrian age, are found lined with galena and quartz.