

by their abundant slickensides (p. 878). The polished and striated walls have been coated with mineral matter, which has subsequently been similarly polished and grooved by a renewal of the slipping.

Structure and contents.—A mineral-vein may be either simple, that is, consisting entirely of one mineral, or compound, consisting of several; and may or may not be metalliferous. The minerals are usually crystalline, but layers or irregular patches of soft decomposed earth, clay, etc., frequently accompany them, especially as a layer on the wall-face (*flucan*). The non-metalliferous minerals are known as gangue or vein-stones, the more crystalline being often also popularly classed as spars. The metal-bearing minerals are known as ores. The commonest vein-stones are quartz (usually either crystalline or cryptocrystalline, with numerous fluid-inclusions), calcite, barytes, and fluorite. The presence of silica is revealed not only by the quartz, but by the hard siliceous bands so often observable along the walls of a vein. These can often be determined to be portions of the "country" which have been indurated by the deposition of silica in their pores. The ores are sometimes native metals, especially in the case of copper and gold; but for the most part are oxides, silicates, carbonates, sulphides, chlorides, or other combinations. Some of the contents of mineral-veins are associated with certain minerals more usually than with others, as galena with blende, pyrite with chalcopyrite, gold with quartz, magnetite with chlorite. Of the manner in which the contents of a mineral-vein are disposed the following are the chief varieties.

(1) **Massive.**—Showing no definite arrangement of the contents. This structure is especially characteristic of veins