

### § i. Mineral-Veins or Lodes

A true mineral-vein consists of one or more minerals deposited within a fissure of the earth's crust, and is usually inclined at from  $10^{\circ}$  to  $20^{\circ}$  from the vertical. The bounding surfaces of such a vein are termed walls, and, where inclined, that which is uppermost is known as the *hanging*, and that which is lowest as the *lying* or *foot* wall. The surrounding rock, through which veins run, is termed the *country* or *country-rock*. A vein may coincide with a line of fault or of joint, or may run independent of any other structural divisions; in all cases it is independent of the bedding or foliation of the "country." Cases occur among crystalline massive rocks, however, and still more frequently among limestones, where the introduction of mineral matter has taken place along gently inclined or even horizontal planes, such as those of stratification, and the veins then look like interstratified beds. Mineral-veins are composed of masses or layers of simple minerals or metallic ores alternating, or more irregularly intermingled with each other, distinct from the surrounding rock, and evidently the result of separate deposition. They are in no respect to be confounded with veins of rock injected in a molten condition from below, or segregated from a surrounding pasty magma into cracks in its mass. But they are commonly most frequent and most metalliferous in districts where eruptive rocks are abundant.

**Variations in breadth.**—Mineral-veins vary in breadth from a mere paper-like film up to a great wall of rock 150 feet wide or more. The simplest kinds are the threads or strings of calcite and quartz, so frequently to be observed