

feet. They hold their course continuously in a certain prevailing direction for miles or leagues, passing through rocks varying in mineral composition.

*That metalliferous veins were fissures.* — As some intelligent miners, after an attentive study of metalliferous veins, have been unable to reconcile many of their characteristics with the hypothesis of fissures, I

Fig. 710.

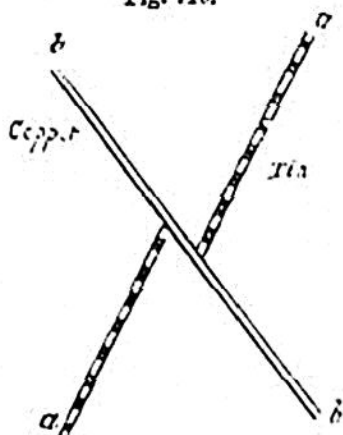


Fig. 711.

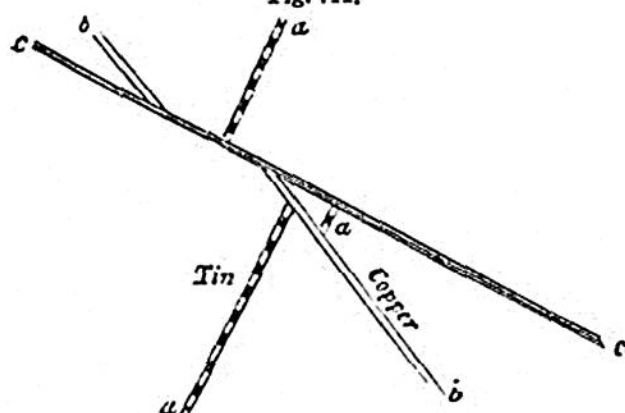
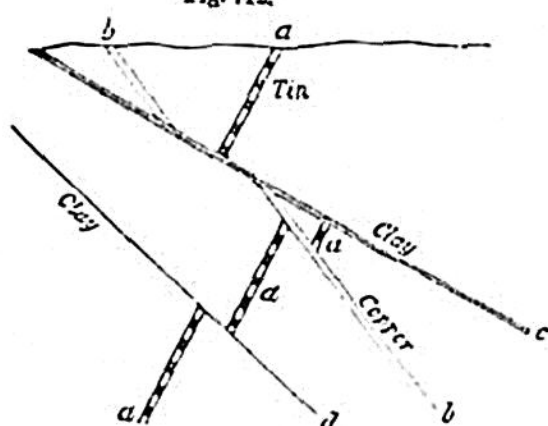


Fig. 712.



Vertical sections of the mine of Huol Peever, Redruth, Cornwall.

shall begin by stating the evidence in its favour. The most striking fact perhaps which can be adduced in its support is, the coincidence of a considerable proportion of mineral veins with *faults*, or those dislocations of rocks which are indisputably due to mechanical force, as above explained (p. 61). There are even proofs in almost every mining district of a succession of faults, by which the opposite walls of rents, now the receptacles of metallic substances, have suffered displacement. Thus, for example, suppose *a a*, fig. 710, to be a tin lode in Cornwall, the term *lode* being applied to veins containing metallic ores. This lode, running east and west, is a yard wide, and is shifted by a copper lode (*b b*), of similar width.

The first fissure (*a a*) has been filled with various materials, partly of chemical origin, such as quartz, fluor-spar, peroxide of tin, sulphuret of copper, arsenical pyrites, bismuth, and sulphuret of nickel, and partly of mechanical origin, comprising clay and angular fragments or detritus of the intersected rocks. The plates of quartz and the ores are, in some places, parallel to the vertical sides or walls of the vein, being divided from each other by alternating layers of clay, or other earthy matter. Occasionally the metallic ores are disseminated in detached masses among the vein-stones.