depth of 80 or 100 feet, it seldom or never happens that tin is found below it in the same vein." Mr. Fox adds,—" There are, however, many instances of tin ore accompanying copper ore to a great depth; and in Dolcoath mine it is found in a copper lode more than 200 fathoms below the surface, and even under the copper." Mr. Carne observes,—" In general an ochreous oxide of iron (gossan) is found in the upper part of the copper veins, to which sulphuret of iron ('mundic') frequently succeeds, below which the miners confidently expect to obtain copper ore."

Relation of Veins to each other.

Adopting the opinion of Werner, that veins which cross and cut through others are of newer formation, we shall find great interest in the description given by Mr. Carne of the principal vein systems of Cornwall*, and Werner's earlier classification of the veins of Freyberg.

Mr. Carne, distinguishing between contemporaneous veins and those which he considers as " true veins†," arranges the latter according to the difference of their antiquity, as inferred from their observed intersections, in eight classes.

The *First Class* includes *the oldest tin veins.* The underlie of these oldest tin veins is to the north; they are traversed by those of the second class. They form a very large majority of the whole.

The *Second Class* includes *the more recent tin lodes.* There are few veins of this class; they underlie to the south. The tin veins are generally east and west veins‡, ranging from 5° to 15° south of east and north of west; in some cases due east and west; and less frequently north of east and south of west. In St. Just,

* In the Trans. of the Geol. Soc. of Cornwall, vol. ii.
† In Cornwall, metalliferous veins are called " lodes."
‡ The directions are by compass, whose westerly variation is in Cornwall about 25°.