Some calcite is present as the material effervesces with dilute hydrochloric acid but this was not quantitatively determined —presumably it constitutes the 6.66 per cent not accounted for in the above analysis. If this analysis be calculated on the basis of 100 the result shown in II is obtained, which agrees very closely with the theoretical composition of calamine (III)

HOPEITE

This mineral is found in the solution cavities observed on the stalactitic masses of calamine and spencerite. It appears to be a secondary mineral formed from the spencerite. The crystals are never more than three millimeters across and seldom more than one centimeter in length. Hopeite appear to be relatively insoluble as compared with spencerite as the crystals are always sharp and very brilliant. At the H. B. Mine hopeite is a rare mineral, the total amount observed being only a few grammes in weight. Only qualitative chemical tests were made. The specific gravity as determined by potassic mercuric iodide solution is 3.03. Under the microscope the crystals exhibit parallel extinction in the prismatic zone. The lustre is vitreous except on the macro-pinacoid which is pearly. There are three well marked cleavages corresponding to the three pinacoids.

CRYSTALLOGRAPHIC PROPERTIES.

Five crystals were measured. They resemble one another closely in habit (Fig. 9).

The macropinacoid is generally the predominant form. The prism (120) is usually well developed, while of the terminal faces the most prominent are the unit pyramid (111) and the unit macrodome (101). The other terminal faces are usually quite small, but, considering their size, remarkable for the accuracy with which they can be measured. The measurements on the larger crystals, while satisfactory, are somewhat less concordant than those obtained from the small crystals. The following forms were observed: