often of [illegible] ll size, sometimes concentrically arranged (Fig. 27), sometimes irregularly distributed like the grains in a section of granite. The main constituents appear to be smaltite, arsenopyrite and pyrite with small amounts of what appears to be niccolite or breithamptite—perhaps both. On treating a fragment with hydrochloric acid till the arsenides are partly dissolved, a thin network of native silver is revealed.

A sample of the mass was analyzed with the following results:

	Ag	Co + small amount of Ni		Fe		Bi	Cu	As		S		Sb	Quartz	Total
Per cent	2.12	17.34 / 58.97	=.2941	10.28 / 55.84	=.1799	.95	.09	60.77 / 74.96	=.8106	8.08 / 32.07	=.2520	.47	.12	100.22

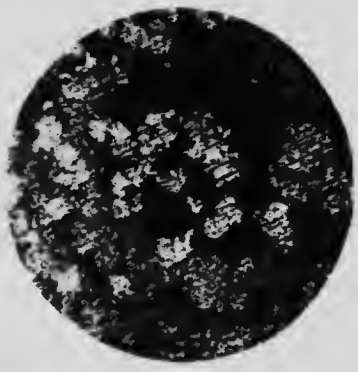

Fig. 27.

Fig. 28.

Fig. 27. Concentric structure, representing an intergrowth of several different arsenides. The black central part is more or less square in outline, suggesting a cube of smaltite or chloanthite.

Fig. 28. Matildite inclusions (dark), in light ground mass of galena.

This material serves very well as an example of the extreme microscopic complexity of much of the Cobalt ore. There appears to be no evidence, however, which would lead to the supposition that glaucodot is one of the constituent minerals.

After examining a considerable quantity of the massive material microscopically, another sample, which was apparently purer than the first lot, was selected and analyzed, with results as below:

	Co		Fe		Ni		As		S		Cu, Bi, Ag and Sb	Total
Per cent.	17.22 / 58.97	=.2920	10.79 / 55.84	=.1933	1.80 / 58.68	=.0307	63.14 / 74.96	=.8422	6.75 / 32.07	=.2105	trace	99.70

The ratios here are much the same as in the first analysis, but smaller amounts of copper, bismuth and antimony are present. There is no evidence that glaucodot is one of the constituents.

Summary—The material is a complex micro-scopic intergrowth of several minerals, which are so intimately mixed that they cannot be definitely assigned to