ART. XL.—*Partzite—a new mineral;* by ALBERT ARENTS, Mining Engineer and Metallurgist.

THIS mineral was discovered early in the year 1865 in the Blind Spring mountains, situated in Mono county, California, and first denoted as a silver ore by Dr. A. F. W. Partz, for which reason I applied to it the above name.

It has hitherto never been found in crystals or of a crystalline structure, but always in amorphous masses generally without luster and rarely of a glistening appearance. Its fracture varies from conchoidal to even, and its color from yellowish-green to blackish-green and black—the lighter-colored portions containing the most silver. Oftentimes the mineral has considerable resemblance to the product obtained during the middle of the raking period in cupellation. The amount of silver it contains ranges between 4 and 12 per cent.

In the veins of the Blind Spring district the Partzite occurs in irregular deposits which are often nodular in shape, and occasionally occupy for a distance of many feet the whole width of the veins.

Its sp. gr. is 3·8; its H.=3–4. Before the blowpipe on platinum it is melted, but with difficulty, to a black slag; on charcoal, and especially by adding soda and pulverized charcoal, a metallic button is easily obtained which bears much resemblance to pure antimony. SO_3, ClH, and NO_5 decompose the mineral even in the cold, liberating oxyd of antimony and forming a copper-silver solution.

An analysis of the mineral shows the following composition:

		Relation of oxygen.		Relation of equivalents.		
SbO_3	= 47·65	7·47	7·47	$\frac{7·47}{24}$ = 0·311	=	1
CuO	= 32·11	6·47				
AgO	= 6·12	0·42	=7·54	$\frac{7·54}{8}$ = 0·942	=	3
PbO	= 2·01	0·14				
FeO	= 2·33	0·51				
HO	= 8·29	7·37	=7·37	$\frac{7·37}{8}$ = 0·921	=	3
	98·51					

From the above it will be seen that for 1 eq. of acid there are 3 eq. of bases and 3 eq. of water. We thus obtain the following formula: $(CuO, AgO, PbO, FeO)_3 SbO_3 + 3HO$.

Of arsenic but slight traces were detected which, however, in all probability were due to the presence of fine reticulations of a brilliant green color, by which the mineral is more or less interwoven.

The Partzite occurs together with argentiferous galena, in veins of a magnitude varying from nine inches to eight feet, and has already become the object of extensive mining operations.