ART. VI.—*On Minium from Leadville*; by J. DAWSON
HAWKINS.

IN 1885, Mr. A. Chanute, while in Leadville, collected some specimens of minium from the "Rock Mine." The specimens lay untouched in his collection until some weeks ago, when he gave me some of the mineral for examination.

The mineral was found between two ledges of outcropping rock, one of porphyry and the other of limestone, the ore of the mine being carbonate of lead, with occasional occurrences of galenite. The minium does not occur as a solid mass, but is interspersed with cerussite, and close examination also showed small particles of galenite occurring with the cerussite. The galenite found in the analysis, however, is not this. The sample taken for analysis was a very carefully picked one, a lump of the mineral being broken up, and the red particles of minium alone being taken. This sample was again carefully picked over in order to insure the absence of anything else than the pure mineral. The analysis gave the following results:

		Insoluble.	
Insoluble in HCl.....	7.51	{ SiO ₂	2.00
Pb calculated as Pb ₃ O ₄ ..	91.39	{ Al ₂ O ₃ Fe ₂ O ₃	.41
Fe ₂ O ₃	.80	{ CaO.....	.28
V ₂ O ₅	.52	{ Pb 4.42 PbS.....	5.08
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100.22		7.77	

Physical characters.—Specific gravity (in powder), 4.55, 4.59; hardness, 2.5; fusibility, 1.; luster, dull; color, bright red; streak, orange-red; fracture, cubical.

From the cubical fracture of the minium, resembling that of galenite, and the occurrence of galenite in the red minium, it would appear that the minium here is a pseudomorph after galenite. The vanadic oxide which was found in the mineral, no doubt existed as vanadinite, which has been frequently found in Leadville.

The occurrence of sulphide of lead in the pure mineral is rather remarkable and also suggestive. Externally the particles of minium showed no evidence of the presence of any other mineral; it was not until the powdered mineral had been treated with hydrochloric acid and all Pb_3O_4 dissolved, that the galenite could be observed. This seems to be conclusive evidence that the minium in this case, was a direct alteration from galenite. A like deduction is forced, as regards the plattnerite lately found in the Cœur d'Alene Mts., Idaho, where all the lead ore is sulphide.

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