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ON SIDEROPHYLLITE—A NEW MINERAL.

BY HENRY CARVILL LEWIS.

Among other interesting minerals which are found in the neighborhood of Pike's Peak, Colorado, is a hard black mica, occurring sometimes in large and fine crystals, which the writer has been unable to identify with any known species.

It is monoclinic, and has an eminent micaceous basal cleavage. It has the following characters:

Hardness, 3.2. Specific gravity, 3.1. Lustre, bright micaceous. Color, black by reflected light, and fine chrome-green by transmitted light. Opaque except in very thin pieces. Streak, pale green. Laminæ very brittle. Biaxial; optic-axial divergence $10° \pm$.

In its composition it appears to be an iron-alumina mica. The analysis here given is a mean of two made by the writer. In one the mineral was fused with sodic carbonate before solution, and in the other it was dissolved in hydrochloric acid. The analyses were performed in the usual way. Iron was estimated by solution in sulphuric acid in a closed flask, and subsequent titration. The percentage of alkalies was kindly determined by Mr. F. A. Genth, Jr. The percentage of water is that given off on moderate ignition. On strong ignition the mineral loses over 3 per centum of its weight, some of the alkalies being driven off.

		O ratio.		
SiO_2	36.68	2.44	2.44	2.00
Al_2O_3	20.41	1.19	1.25	1.02
Fe_2O_3	1.55	.06		
FeO	25.50	.71		
MnO	2.10	.06		
MgO	1.14	.06		
CaO	.81	.03	1.22	1.00
Na_2O	1.09	.03		
Li_2O	.37	.02		
K_2O	9.20	.20		
H_2O	1.01	.11		
	99.86			

This gives $\dot{R} : \ddot{R} : Si = 1 : 1 : 2$, and for the ratio of bases to Silica 1 : 1. It is therefore a Unisilicate in which the water is basic.

It has the formula

$$\overline{Si} \parallel O_4 \parallel (\tfrac{1}{2}(K_2, \overline{Fe}) + \tfrac{1}{2}\beta\ \overline{Al})_2.$$

and the symbol

$$R_3,\ \overline{R},\ Si_3,\ O_{12}.$$

Before the blowpipe it fuses with intumescence at about 2.5 to a black glass. It sometimes gives a red lithia color to the flame. It is soluble in hydrochloric and sulphuric acids, with separation of silica. In its pyrognostic properties it is thus similar to Annite, although Annite is less fusible. Its oxygen ratio is that of Biotite, but the absence of magnesia, and its physical and optical properties, distinguish it from that mineral. It occurs in good crystals back of Pike's Peak, Colorado. Amazon-stone and Astrophyllite occur in the vicinity. The material upon which this investigation has been made was obtained from Dr. A. E. Foote, of this city.

The name of *Siderophyllite* (*σίδηρος φύλλον*) has been given in allusion to the large percentage of iron which it contains.