NOTES ON SOME PEGMATITE MINERALS FROM RWANDA

by

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A new phosphate mineral.

A new lithium-calcium phosphate mineral has been observed from the Buranga pegmatite mine. The mineral is white to faintly pink in colour resembling amblygonite, although with much less pronounced cleavage. It occurs mainly in association with muscovite, augelite, brazilianite and lazulite in addition to smaller amounts of crandallite and apatite. On the basis of a preliminary X-ray and chemical investigation the mineral corresponds closely to palermoite described by Mary E. Mrose in 1953. However, palermoite contains less lithium and more sodium and the major earth alkali is strontium whereas in the present mineral calcium predominates.

The two minerals obviously belong to the same series, the one from Buranga corresponds to the calcium end member palermoite being the strontium analogue.

From the chemical analysis (table I, anal. 2) the formula $(Li, Na)_2 (Ca, Mn) Al(OH - PO_4)_4$ has been deduced.

The strongest X-ray powder lines (see plate) are :

d Å:	I:		I:		I:
4.65	m	3.04	vs	1.65	m
3.29	m	2.87	s	1.59	m
3.09	vs	2.59	s	1.43	m
		2.42	s	1.29	m

vs = very strong, s = strong, m = medium.

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Table I.

Chemical analysis of palermoite and a new Li - Ca - Al phosphate.

	(1)	(2)
P_2O_5	42.89 %	45.34 %
Al_2O_3	30.83	33.42
Fe_2O_3	0.30	none
FeO	none	0.98
MgO	0.10	tr.
MnO	-	0.76
CaO	1.39	8.36
SrO	12.93	tr.
BaO	0.10	tr.
Na_2O	1.32	0.34
K_2O	0.10	tr.
Li_2O	4.00	4.21
H_2O+	5.36	5.36
H_2O-	0.30	0.07
F	none	1.68
Insol.	-	0.27
	99.62 %	100.79
$O \equiv F$		0.71
		100.08 %
S. G.	3.22 (Meas.)	3.10 (Meas.)

(1) Palermoite from Palermo mine, North Groton, New Hampshire, U. S. A. Anal. Jun Ito. (Clifford Frondel and Jun Ito, Am. Mineralogist, Vol. 50, Nos 5-6, p. 777, 1965).

(2) A new phosphate from Buranga mine, Rwanda. Anal. O. von Knorring.

Arrojadite $Na_2 (Fe, Mn)_5 \left[\overline{PO_4}\right]_4$

Arrojadite has been identified from the Buranga pegmatite mine. It occurs in dark brownish-green resinous masses intergrown with bronzy alluaudite.

Barbosalite $Fe^2 Fe^3_2 \left[\overline{OH} - PO_4\right]_2$

Tavorite $Li\ Fe \left[\overline{OH} - PO_4\right]$

Barbosalite the iron analogue of lazulite and the iron amblygonite tavorite have been noted as secondary products on triphyline-lithiophilite from Buranga mine.

Manganoan Lipscombite (Fe, Mn) Fe^{3} $[PO_4 - OH]_2$

This mineral was recently described as a new mineral species from Sapucaia pegmatite in Brazil, Lindberg (1962). At Buranga it is closely associated with meta-strengite, and is observed in the form of minute dark-green scales or in powdery masses.

Eosphorite (Mn, Fe) Al $[(OH)_2 PO_4] H_2O$

Small amounts of a brownish mineral belonging to the childrenite-eosphorite series were observed in specimens consisting of brazilianite and lazulite.

References.

LINDBERG, M. L. (1962) - Manganoan lipscombite from the Sapucaia pegmatite mine, Minas Gerais, Brazil. - Amer. Mineralogist, vol. 47, pp. 353/359.

MROSE, Mary E. (1953) - Palermoite and goyazite, two strontium minerals from the Palermo mine, North Groton, New Hampshire. - Amer. Mineralogist, vol. 38, p. 354.

Légende de la planche :

New mineral
Rwanda, Buranga

X - ray powder photograph
9 cm camera
Cu - radiation

Film n° P. 2901
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