crystallization history now inferred from the bulk chemical composition of the rock and the known phase relations within the ternary system.

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NOTE ON LITHIOPHOSPHATE

D. JEROME FISHER, *University of Chicago, Chicago, Illinois.*

This name has been given by V. V. Matias and A. M. Bondareva to Li_3PO_4 occurring as a hydrothermal replacement of montebrasite in a Kola pegmatite according to an abstract by M. Fleischer. Over eight years ago the writer took an x-ray diffraction pattern of the synthetic powder of this material (see the table), suspecting that it would be present in his pegmatite collections; but it never turned up. This pattern agrees well with that by A. P. Denisov quoted in the Fleischer abstract.

Zambonini and Laves found synthetic Li_3PO_4 to be orthorhombic with the olivine-triphylite structure with unit cell $a=10.26$, $b=4.86$, $c=6.07$kX. (orientation of chondrodite with $c<a$), space group *Pnam*. The indices shown in the table are accordingly taken from those given for the corresponding olivine reflections by Swanson and Tatge.

C. Guillemin's suggestion that this should be called lithiophosphatite is one that should meet with general agreement. Dana's System has in class 38 no place for the $A_3(XO_4)$ type that would seem to include lithiophosphatite. However it is proper to place it near the triphylite group of $AB(XO_4)$ type, just as the heterosites are put here rather than with

POWDER DIFFRACTION DATA ON SYNTHETIC Li_3PO_4

Int.	d(kX.)	Indices	Int.	d	Int.	d
5	5.217	200	2	1.676	2	1.191
1	4.372	110	1	1.640	2	1.185
1	4.180	—	2	1.606	2	1.166†
10	3.976	201	1	1.584	2	1.159†
10−	3.792	011	2	1.559	1	1.150
6	3.547	111, 210	1	1.542	1	1.139
4	3.053	211	3	1.526	omit two weak lines	
½	2.902	—	5	1.513	2	1.101
8+	2.667 *	310	1	1.494	1	1.086
5	2.608 *	311	1	1.468	2	1.081
7	2.420	112	1	1.402	1	1.069
5	2.309†	212, 410	5	1.377	omit about three weak lines	
½	2.194	121	omit two weak lines		3	1.023 *
1	2.152	312	2	1.293	1	1.020 *
1	2.067	402	3	1.285 *	omit two weak lines	
½	1.897	510	2	1.278 *	2	1.003 *
1	1.875	113	1	1.264	2	1.002 *
2	1.838	511	1	1.254	omit five weak lines	
4	1.783 *	222				
3	1.767 *	421				
½	1.741	601				
¾	1.706	313				

Fe/Mn radiation in a Straumanis-type 114.6 mm. camera. Intensities by visual estimation; measured by Leon Atlas. * doublet; † diffuse line.

the $A(XO_4)$ type where they belong according to a strict purely-chemical interpretation.

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AN OCCURRENCE OF GORCEIXITE IN ARKANSAS*

EDWARD J. YOUNG, *U. S. Geological Survey, Denver, Colorado.*

An unusual occurrence of radially fibrous botryoidal gorceixite, $BaAl_3(PO_4)_2(OH)_5 \cdot H_2O$, has been found in sec. 16, T. 2 S., R. 18 W., 6

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