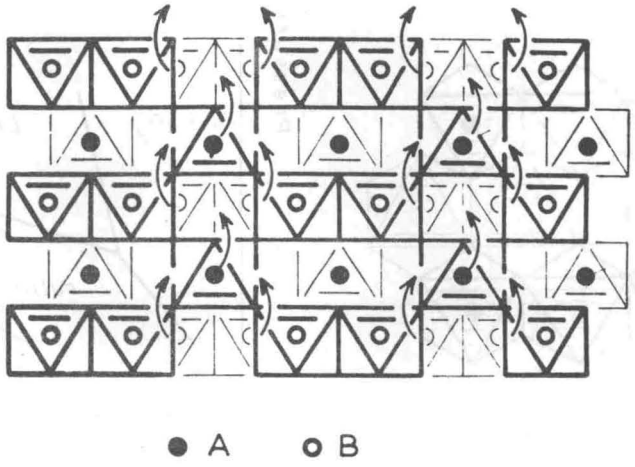

FIG. 3. If cations are shifted in the way described by arrows, the trirutile structure is formed from the Li_2ZrF_6 structure type.

structure type. Amongst the ternary compounds of general formula AB_2X_6 a similar arrangement of (ordered) cations occurs in columbite $FeNb_2O_6$. By analogy with the rutile $\rightleftarrows$ α-PbO_2 transformation, we might therefore expect the AB_2X_6 compounds discussed above to transform at high enough pressures to a ternary analog of α-PbO_2, possibly with the cations ordered as in $FeNb_2O_6$.

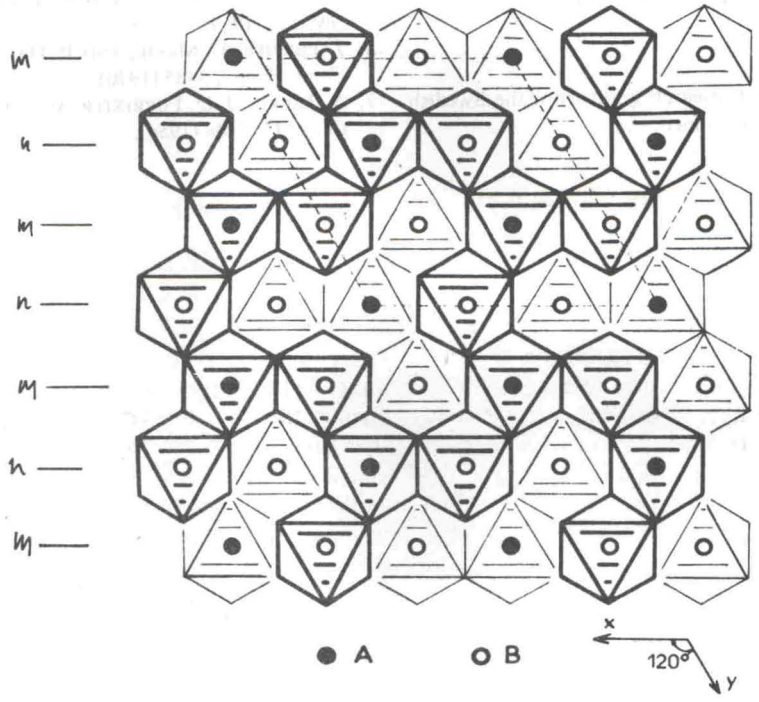

FIG. 4. The Na_2SiF_6 structure type.

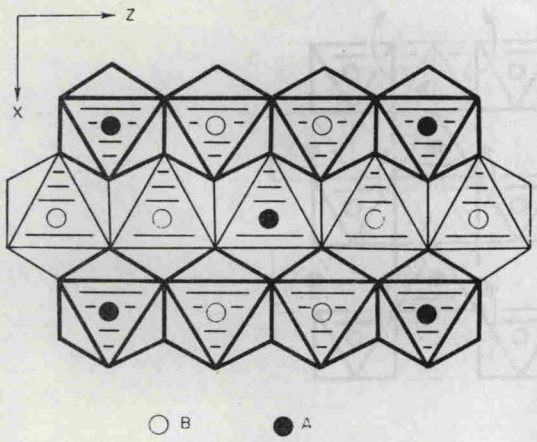

FIG. 5. The trirutile structure type.

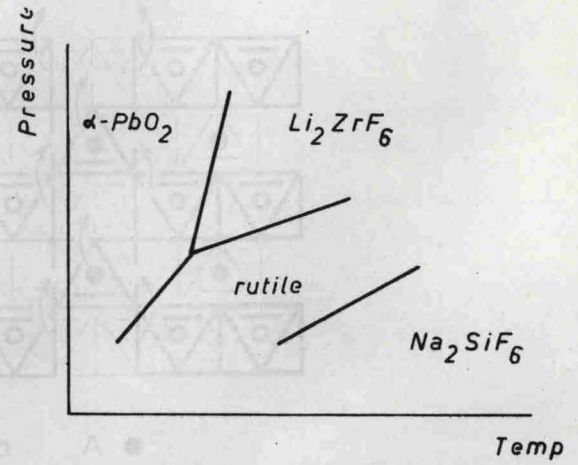

FIG. 6. Tentative temperature-pressure phase diagram for the various MX_2 structure types discussed.

It would be interesting to study the effects of applied pressure in the high temperature experiments referred to above.

In the meantime a tentative pressure-temperature phase diagram is given in Fig. 6. Its construction is based on the observations that

(a) α-$LiSnF_6$ transforms to β-Li_2SnF_6,
(b) α-Li_2GeF_6 transforms to β-$LiGeF_6$ at high temperatures and
(c) rutile transforms to a structure of the α-PbO_2 type at high pressure.

Acknowledgment

One of us (S.A.) has a research grant from the Swedish Natural Science Research Council.

References

1. S. ANDERSSON AND J. GALY, *Bull. Soc. Chim. France*, 1065 (1969).
2. J. GALY, S. ANDERSSON, AND J. PORTIER, *Acta Chem. Scand.* **23**, 2949 (1969).
3. E. HOPPE AND W. DÄHNE, *Naturwiss.* **47**, 397 (1960).
4. C. HEBECKER AND R. HOPPE, *Naturwiss.* **53**, 106 (1966).
5. J. PORTIER, F. MÉNIL, AND J. GRANNEC, *C.R. Acad. Sci.* **269**, 327 (1969).
6. J. PORTIER, F. MENIL, AND P. HAGENMULLER, *Bull. Soc. Chim. France*, 3485 (1970).
7. A. ZALKIN, J. D. FORRESTER, AND D. H. TEMPLETON, *Acta Cryst.* **17**, 1408 (1954).