The following abbreviations are used:

A	analcime	Ph	phillipsite
Ab	albite	Pr	prehnite
An	anorthite	Q	quartz
Ch	chabazite	S	stilbite
C	cristobalite	T	thomsonite
E	epistilbite	W	wairakite
H	heulandite	Wo	wollastonite
Hg	hydrogrossular	Xo	xonotlite
Hx	hexagonal anorthite	Z	phase Z
L	laumontite		
M	mordenite		

A1.3. *Experiments using oxide mixes*

Over 200 experiments were carried out at s.w.v.p. or at a vapour density of 0·33 in closed bombs on compositions in the plagioclase series. The mixtures were made from calcium oxide, sodium hydroxide, active alumina and silicic acid. The normal run time was 4 weeks, although duplicate runs indicated that products after 2 weeks were probably the same. On the other hand, short runs of 24 hr or less produced different results from those of a month's duration. At the soda-rich end final solutions were always alkaline (pH *c.* 10).

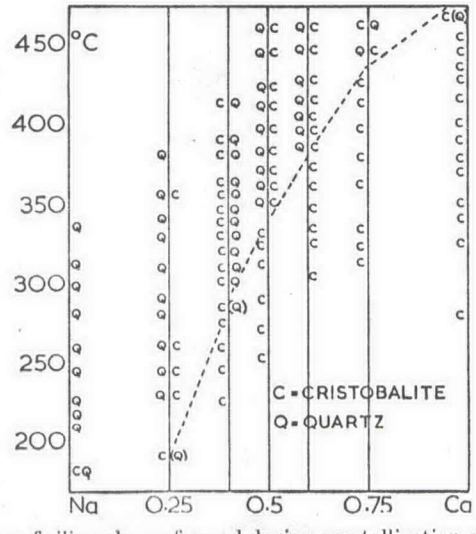

Fig. 17. Variation of silica phases formed during crystallization of oxide mixes of feldspar compositions with excess silica.

Seven compositions were used corresponding to the following: Ab + $6SiO_2$, 3Ab. An. $24SiO_2$, 3Ab. 2An. $30SiO_2$, Ab. An. $12SiO_2$, 2Ab. 3An. $30SiO_2$, Ab. 3An. $24SiO_2$, An + $6SiO_2$.

The basic results are summarized in Fig. 11. Quartz was always produced in runs from albite composition. The formation of quartz seems to be strongly retarded by the presence of calcium and the time for the appearance of quartz is approximately inversely proportional to the calcium content. It appears possible that a film of calcium silicate may protect the cristobalite which first appears. The data are summarized in Fig. 17. A more detailed study of the crystallization of oxide mixes of the sodium system was carried out by G. W. Valpy (1957). A greater variety of run times was used and mixes were pumped to pressure at the proper temperature. These experiments are significant in indicating that analcime tends to persist above its true stability field and to grow rapidly. The results are summarized in Fig. 10. The position of the boundary at low pressures is very close to that indicated by the data of Fig. 11.