and epistilbite are chemically similar and may be polymorphs with rather similar structures the nucleation of either phase may inhibit the formation of the other. (5) Laumontite was not synthesized although on the basis of water content it might be expected to form at temperatures intermediate between those of epistilbite and wairakite. This contrasts with its copious occurrence in nature. Our failure to synthesize laumontite (and that of Koizumi and Roy, 1958) is a clear indication

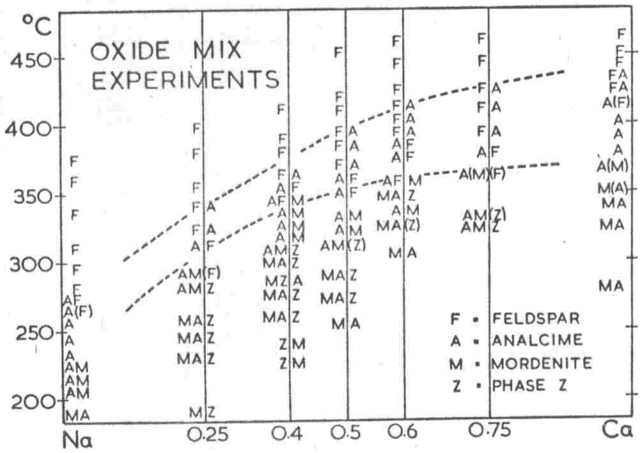

Fig. 11. Phases formed by hydrothermal crystallization of oxide mixes of feldspar compositions. (For pressure data see Appendix I).

of the lack of equilibrium in the synthetic results. On the basis of water content, it is possible that a field of scolecite could occur between laumontite and wairakite. (6) Fyfe (1955b) found that in short runs laumontite and heulandite formed readily over a wide range of temperatures from their "amorphous" dehydration products. Longer runs have shown that such materials appear to retain a nucleating memory and tend to form the parent phase over too wide a range. Data in Table 15, however, indicate that laumontite could be stable relative to wairakite near 300°C for, while at 310–323°C only laumontite was observed in the products, above this temperature wairakite was observed in long runs and in one run at 240°C chabazite was observed.
(7) Our suggestion that the true analcime + quartz → albite boundary is near 200°C and the sequence at Taringatura (Fig. 2) indicate that heulandite should also be stable to about 200°C, and laumontite at rather higher temperatures.

5.4. *Plagioclase–silica–water compositions*

Phases synthesized from compositions within the above system are indicated in Figs. 11 and 12. The lack of a field of synthesis for calcium zeolite + albite, a common assemblage in zeolitized rocks, is strong evidence that equilibrium was not established. It appears that a continous series of analcimes are formed. Epistilbite was formed only from calcium-rich glasses. Refractive index data suggest that mordenites tend to be calcium-rich and feldspars sodium-rich compared with the starting material. Natural plagioclases and synthetic anorthite produced no zeolites in 60 day runs in the range 250–350°C.