mullite appears in the charge. Transformation of cristobalite into quartz reaches maximum intensity at the highest pressure (2000 kG/cm^2).

Palygorskite. In 22 to 48 hour runs decomposition of palygorskite is completed sooner at high pressures, although, as in the case of sepiolite, the process begins at 325°C.* Beginning with a temperature of 325°C, in the entire temperature range, palygorskite was transformed into montmorillonite, whose appearance is indicated on the diffractometer traces by reflection $\underline{d}_{001}$ = 14.7 A (Fig.2B, e,f,d). In samples saturated with glycerine $\underline{d}_{001}$ increased to 18 A (Fig.3A, a,b,c), and after annealing at 600°C, decreased to 9.9 A (Fig.3B,a,b,c).

The montmorillonite formed from palygorskite is dioctahedral with $\underline{d}_{060}$ = 1.485 A (Fig.2B, d). The trnasformation may be represented by equation:

$$(Mg_{1.78}Fe_{0.35}Al_{1.22})(Si_{7.41}Al_{0.59})O_{18.96}(OH)_{5.28}(OH_2)_{1.76} \text{ --}$$

$$\text{-- } (Mg_{1.78}Fe_{0.35}Al_{1.22})(Si_{7.41}Al_{0.59})O_{20}(OH)_4 + 2H_2O$$

Beginning at 500°C, under water vapor pressure, montmorillonite

* In the experiments at 100-200°C (Fig. 2B, b',c') palygorskite with admixed calcite was used, but in the experiments at higher temperatures (Fig.2B, d-l) only palygorskite freed of calcite by washing in 5% HCl (Fig.2B,a) was used.