The orogeny ended before the earliest glaciation recognized in the central Alaska Range, which probably occurred 1.5-3 m.y. ago. There has been no similar deformation since.

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POSSIBLE EFFECTS OF ALUMINUM HYDROXIDE COMPLEXES ON LOW-TEMPERATURE MINERAL FORMATION

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Studies of aluminum-bearing solutions reported in the literature suggest that at 25°C. and weakly acid pH, most aluminum hydroxide complexes are polymers with six-fold coordination. At weakly basic pH, dissolved aluminum hydroxide, usually assigned the formula $Al(OH)_4^-$ is a monomer which may have four-fold coordination. Thermodynamic calculations suggest that the pH at which muscovite and kaolinite coexist in equilibrium with a solution containing exclusively $Al(OH)_4^-$ is lower than that at which those minerals coexist in equilibrium with solutions of small, six-fold polymers such as $Al_7(OH)_{17}^{4+}$ and $Al_{13}(OH)_{34}^{5+}$. Therefore the control of pH on the nature of dissolved aluminum may explain the observed natural formation of kaolinite, in which all the aluminum has six-fold coordination (in weakly acid media); illite and montmorillonite, which contain both four- and six-fold aluminum (intermediate pH environments); and zeolites and other four-fold aluminum minerals (high pH environments).

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MICROEARTHQUAKES, SWARMS, AND THE GEOTHERMAL AREAS OF ICELAND

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Over 2100 earthquakes were recorded with portable seismographs operated in Iceland during the summer of 1968. Another 600 events were precisely located in three areas using data from tripartite arrays. The earthquakes recorded are largely confined to 13 regions that are each generally less the 100 km^2 in area. Most of the well-located events are at depths of 2 to 6 km with some less well located events as deep as 13 km. The microearthquakes are largely confined to the upper few kilometers of the Oceanic layer or layer 3 ($Vp \approx 6.5$ km/sec in Iceland).

Geothermal areas in Iceland that are structurally related to fissures generally have high microearthquake activity. Geothermal areas that have few fissures and appear to be structurally related to acid intrusions contain little or no microearthquake activity.

The distribution of zones of microearthquake activity generally supports the hypothesis of a transform fault in southern Iceland. It appears that the stress along this fault is being relieved in geothermal areas by numerous microearthquake swarms occurring nearly continuously. Outside of the geothermal areas, mainshock-aftershock sequences seem to be the dominant mode of stress release. The swarms may be attributed to weakening of the crust by fluids or fluid pressure.