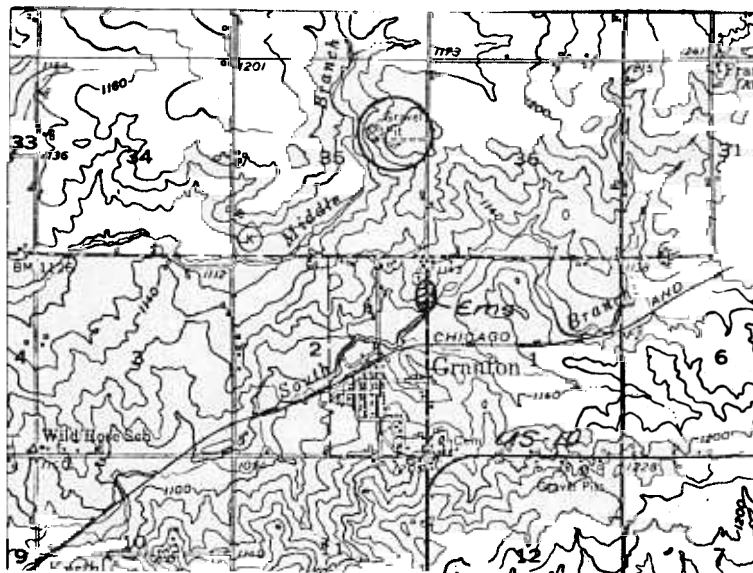


TITLE: Basal Conglomerate at Naedler Quarry, Granton

LOCATION: SW 1/4, NE 1/4, Sec. 35, T 25 N, R 1 W, Granton 15' Quadrangle



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SUMMARY OF FEATURES:

A "rotten granite" quarry in gneissic biotite adamellite (?) on the Marvin Naedler property was reopened in 1974 after several years of inactivity. Be sure to obtain permission from the property owners before entering the quarry.

Cataclastically foliated biotite adamellite (?) composed of plagioclase (?), K-feldspar, quartz, and biotite contains lenticular masses of pegmatite and quartz (Figure 1) which are subparallel to foliation. The foliation trends N85°E, 70-75°N. Slickensides on quartz veins plunge N80°E and 12-13°, a factor suggesting strike-slip motion during shearing and lenticulation of the pegmatite and quartz veins. The pegmatite locally contains large clots of very coarse biotite, part of which is chloritized. Was the foliation in the adamellite (?) developed before or after intrusion of the pegmatite and quartz veins?

The Precambrian gneissic rocks described above are overlain unconformably by Late Cambrian basal conglomerate or breccia composed predominantly of poorly sorted, subangular quartz clasts between 4 and 65 centimeters in maximum dimension. The clasts are embedded in a quartz sand matrix which is cemented with white clay. The clasts show rounding only on edges and corners: they are clearly of very local derivation - probably the quartz veins in the adamellite (?) What happened to the feldspar and biotite? Is the basal conglomerate a beach deposit? A stream deposit? What features might permit resolution of this question? This quartzose basal conglomerate characterizes the Precambrian-Cambrian unconformity throughout this region, although it is rarely this coarse in texture.

Geological and hydrological conditions are strongly reflected in the patterns of agricultural land-use. Wet, uncultivated bottomlands are on clay-rich, weathered Precambrian granitic rocks. Rain, which falls at higher elevations, readily percolates down through the Cambrian sandstones to the impermeable Precambrian surface, and flows along it into the nearest depression.

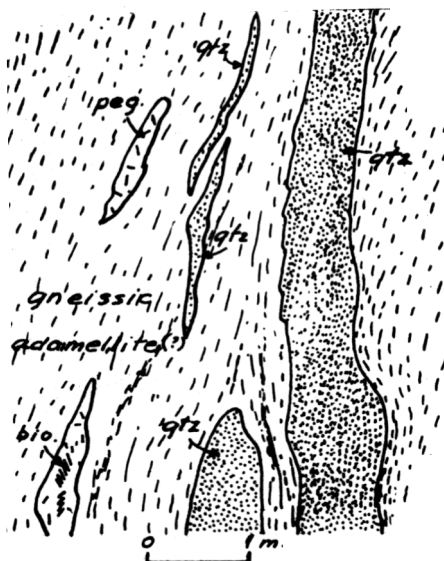


Figure 1 -- Quartz veins and lenses with lenticulated pegmatite veins in foliated biotite adamellite(?)

The elevation of the Precambrian-Cambrian unconformity at this location is about 1180 feet. Cross-bedded Mt. Simon Sandstone crops out along the west side of a road crossing South Branch of O'Neill Creek 1.4 kilometers south-southeast of here (See topographic map on preceding page). The sandstone is exposed down to an elevation of about 1100 feet at the second location. Thus, there is a drop of at least 80 feet between these two locations. It is suggested that an east-northeast-trending ridge or fault scarp between here and Granton was slowly buried by northward encroachment of Late Cambrian seas, and that the sandstones at Granton are older than the basal conglomerate here.