

GEOLOGICAL SURVEY OF WYOMING

Abernathy Jade - 40 mi. SE of Lander

Fred H. Abernathy and Charles H. Abernathy

The jade occurs in a diorite mass (dike?) within granite. The diorite mass is 36' long by 3' to 5' thick. Diorite has been altered, for the most part, to chlorite schist at the pit.

An area of pre-Cambrian rocks consisting of granite, granite gneiss, pegmatite, aplite, diorite, hornblende schist, chlorite schist, quartzite, granite-ls. breccia and limestone.

The oldest rock appears to be a gray, fine-grained, biotite granite and white gr. con. of quartz and feldspar. This has been cut by dikes of Hornblende Diorite which has been largely metamorphosed to a hornblende and actinolite schist (amphibolite?) and locally to chlorite schist. The granite is gneissoid for the most part. A later coarse-grained pegmatite consisting of microcline, quartz, and minor muscovite cuts the older granite - irregularly in any direction. Small aplite dikes cut the Diorite and in places the latter contains injectocrysts of feldspar. Also, the pink pegmatite cuts diorite. Some of the diorite is fine-grained enough to be basalt. These basic dikes trend N. 40 E. and dip about vertically.

At the jade pit the Diorite strikes N. 40 W. and dips steeply NE. Pit 3'-4' wide and 30' long.

The gray granite strikes N. 45 W. and dips 50' SE.

Aplite occurs on both sides (hanging wall and foot wall) of the jade-diorite mass.

The jade-diorite mass has been folded so that it pitches approximately N. 60° E. The jade has been developed on the W. limb of the fold. It is about 1'-2' thick as nearly as can be determined in the caved-in pit.

The top of the pre-E has been disintegrated and the fragments included in the overlying limestone.

The jade contains occasional crystals of quartz up to several inches long and 3/4" across.

Dynamothermal metamorphism followed the intrusion of all pre-E rocks (is latest pre-E actively) because even aplite is folded (not flow-banded).

Note - Why has nephrite developed instead of actinolite? Hornblende is abundant, actinolite much less so but still relatively common. The nephrite occurs in only one place associated with a large, white, fine grained aplite mass. The original diorite and aplite have been folded where nephrite is found.

Sp. 1 Aplite; 2 Trem-activ; 3 Diorite; 4 Jade; 5 Limestone.

7745 Abernethy Lade 100 m. S.W. of Dover

Excl. H. Abernethy in 1811 in H. Abernethy

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4 1/2 miles S. from Dover, Kent, England.