spathized, as in the Meers Quartzite (see below); or (3) it could represent Carlton rhyolite that was intensely altered. Factors that make interpretation of this sample difficult include poorly exposed contact relationships in the "Hideaway" area, and a sample location that is very close to the microgranite contact and farther west than any other sample. The interstitial occurrence of the feldspar, hematite coatings on quartz grains, and larger grained biotite and muscovite argue for the second hypothesis; however, lack of high-grade metamorphic minerals argues against this model. Because of poorly exposed contacts, the third hypothesis cannot be ruled out. If the first model is correct, feldspar could represent original detrital grains or could have grown in place metamorphically. Which one, if any, of these models is correct cannot be determined without additional sampling and analysis of rocks from the "Hideaway" area.

Possible Correlations

We note that the sedimentary precursor for the Pratt Hill quartzite is generally similar in composition to two other units that occur in the Wichita Mountains, the Tillman Metasedimentary Group and the Meers Quartzite. The major features of these units are summarized in table 13. Most authors include the Meers Quartzite in the Tillman Metasedimentary Group. Powell and others (1980) pointed out that this correlation is tentative and divide the units at the formational level. For purposes of this paper, these units are discussed separately.

The Pratt Hill quartzite does not appear to be correlative with either of these two units. Meers quartzite occurs as large inclusions in rocks of the Raggedy Mountain Gabbro and Wichita Granite Groups. Clearly, lack of sillimanite and abundant feldspar in the Pratt Hill quartzite preclude correlation with sillimanite quartzite and feldspathized quartzite. The Pratt Hill quartzite more closely resembles the chlorite- and mica-bearing variety of Meers quartzite. Obviously, the pure quartzite varieties of these units might be correlative except that pure quartzite represents only a small portion of the Pratt Hill quartzite. The presence of subrounded quartz, and biotite, and the abundance of muscovite in the chlorite- and mica-bearing Meers Quartzite argue against correlation of these rocks. The Tillman Metasedimentary Group (table 13) contains significant amounts of chert, and either biotite, hornblende, or actinolite, and therefore probably cannot be correlated with the Pratt Hill quartzite.

The Pratt Hill quartzite may have originated as a sedimentary unit that has not yet been recognized in the Wichita Mountains. As stated previously, the Carlton Rhyolite was presumably deposited on an erosion surface of the Raggedy Mountain Gabbro. The Wichita granites were injected above this surface. This post-gabbro, pre-Carlton interval should have allowed for deposition of significant quantities of sediment. Evidence of this sediment has not been found, along either the gabbro-granite contact or granite–rhyolite contact, and hence this material was presumably mostly swept beyond the central Wichita Mountains region. It is possible that Pratt Hill quartzite represents sediment deposited during this interval. It would have formed a low hill on gabbroic rocks until buried by the Carlton Rhyolite. The Mount Scott Granite would have intruded as a sill-like mass along the gabbro-sediment contact. It is possible that the darker band at the top of the Pratt Hill quartzite represents a pre-Carlton soil horizon.

CONCLUSIONS

A sharp contact, which trends easterly along the northern face of Pratt Hill, separates moderately altered Carlton rhyolite from an underlying quartz- and white-mica–bearing rock. This rock was originally aphanitic and has been subjected to low-grade metamorphism, probably from intrusion of the underlying Mount Scott Granite. This rock, informally called "Pratt Hill quartzite," could have originated as a fine-grained, tuffaceous equivalent of the Carlton Rhyolite. However, the almost complete absence of feldspar below the contact, and lack of pseudomorphs after feldspar phenocrysts, suggest a metasedimentary origin for the unit. The contact between the two units does not parallel either of them, suggesting that it is an unconformity. We suggest that the Pratt Hill quartzite originated as a submature, clastic sediment composed of fine quartz sand in a clay matrix.

This quartzite does not appear to be correlative with either the Meers Quartzite or the Tillman Metasedimentary Group. If not, the precursor of the quartzite would most likely be a pre-Carlton and post–Raggedy Mountain Gabbro sediment. This sediment would have existed as a low hill on gabbro. The sediment could have originated in one of many ways. It could have originated from weathering of some early phase of the Carlton Rhyolite. This weathering would necessarily have been extensive enough to convert original feldspar to clay minerals. However, no hiatus of this magnitude in the deposition of the Carlton Rhyolite has thus far been reported. Alternatively, the sediment could have been derived from the preexisting gabbroic units, because quartz is reported in sediments produced from rocks that are even this mafic. As in the previous model, feldspar would need to have been converted to clay minerals. The mineralogy of the quartzite is more compatible with a source that was high in Al and alkalis, rather than high in Mg and Ca. However, given the limited data now available, either source is entirely possible.

The Pratt Hill quartzite crops out over a small area that belies its possible regional significance. The purpose of this paper is to report its occurrence and to stimulate further study.