



## Arizona Rocks 25

Text and photos by Ray Grant

The foliated metamorphic rocks are named according to the texture of the rock, mainly the grain size. A very fine-grained foliated metamorphic rock where the individual minerals cannot be seen is called slate. I have not seen any samples of slate from Arizona. At Slate Creek on route 87 going to Payson the rock is really phyllite not slate. Phyllite differs from slate in that it is a little coarser-grained so it does not break clean like slate does. Also, in phyllite you can almost see the individual minerals and the rock may have a silver sheen.

Phyllites are common in Arizona. They are found in the Phoenix Mountains especially in the western portion and the area around North Mountain. Geologists working in the area have identified gray phyllite, tan phyllite, muscovite phyllite, and other phyllites from the area. These were originally mainly mudstones and volcanic ash. They also use the term greenstone for a phyllite that was originally a basalt or andesite before metamorphism. The original sedimentary and igneous rocks were buried up to six miles deep causing the change to metamorphic rocks.

For detailed information about the metamorphic rocks in the Phoenix Mountains go to the website - [arizonageologicalsoc.org](http://arizonageologicalsoc.org), click on the "about us" and then on "publications Arichive", then on "1950 to 2005 Out-of-Print Guidebooks". In the out of print guidebooks go to 2000-2005 and find Johnson, J.K. and Reynolds, S.J., 2002, Geologic Field Guide to the Phoenix Mountains.



**Phyllite, you can almost see individual minerals, but it is still very fine-grained. It does not break smooth like slate.**



**Greenstone (green phyllite) at North Mountain Park**



**A muscovite rich phyllite, mined in the Phoenix Mountains and used as flagstone**

