

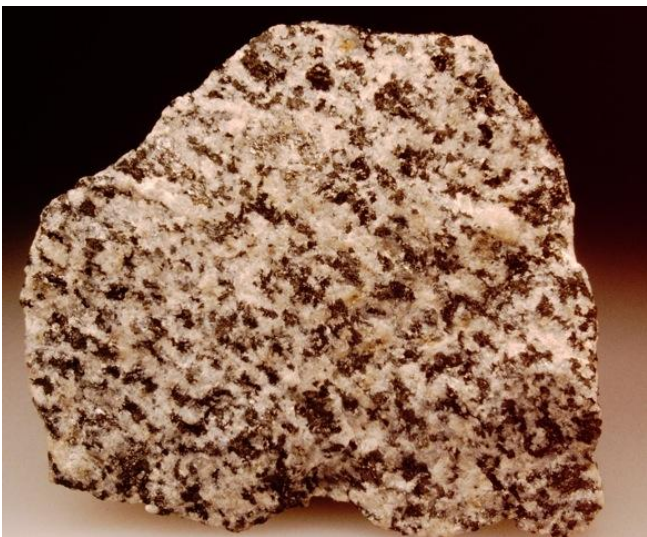


Arizona Rocks 7

Text and photos by Ray Grant

Andesite and diorite are igneous rocks intermediate in silica composition between rhyolite (granite) and basalt (gabbro). Andesite is the fine-grained volcanic rock and diorite is the coarse-grained intrusive rock. The minerals present in these rocks are plagioclase and hornblende with other possible minerals.

Diorite is not a very common rock. It occurs in Arizona associated with the major intrusive bodies particularly those associated with the large copper deposits such as at Ajo.



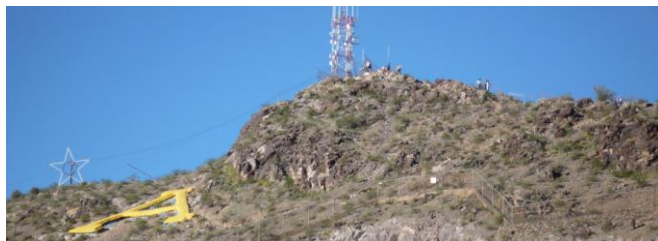
Diorite (white plagioclase, black hornblende), New Mexico (Jeff Scovil photo)

Andesite (the name derived from the Andes mountain range in South America) is found as part of the major volcanic fields in Arizona. One problem is that andesite looks like basalt, it is just a lighter color (gray instead of black), and when the andesite weathers it will look just like basalt. Andesite is not nearly as common as basalt, but we do have some locally in the Phoenix area. It occurs on the top of Tempe Butte (A Mountain), at Red Mountain (Mount McDowell) on the Beeline Highway, at Blue Point on the Salt River, around Apache Lake, and as dikes at South Mountain. The dikes at

South Mountain have also been called microdiorite. They are fine-grained (andesite), but since they are intrusive and not volcanic the name microdiorite was used. All of the andesite and microdiorite in this area is about 20 million years old.



Microdiorite dike at South Mountain (Ray Grant photo)



Andesite on top of A Mountain (Tempe Butte) (D. Duffy photo)



Andesite flows in red sedimentary rocks at Red Mountain (Ray Grant photo)