



Arizona Rocks 14

Text and photos by Ray Grant

In Arizona the most common rock to meet these criteria is granite. Much less common diabase will show it and rarely some volcanic rocks. The spherical boulders form underground. Ground water that seeps down fractures alters the feldspar to clay. Figure 1 shows how the water attacks faces, edges, and corners of granite and how this forms the spherical shape. The boulders are formed under the earth's surface as seen in figure 2. In an arid climate like Arizona, the weathered material, mainly clay and quartz grains in the case of granite, are removed by erosion. In a more humid climate soil and vegetation would cover the surface and hide the boulders.

The areas of spheroidal boulders that can be seen in Arizona are on the Beeline highway on the way to Payson, at Texas Canyon on I-10 east of Benson, at the Granite Dells in Prescott, and many other localities. If the granite does not meet the three criteria then granite will not show the boulders. Diabase at the Salt River Canyon shows spheroidal weathering but it is not as spectacular as the granite. (Reference: Ferry, John (1984) Landforms of Spheroidally Weathered Rock in Smiley, T. L., et al., editors, *Landscapes of Arizona*, University of America Press, Lanham, MD.)



Spheroidal granite boulder on the Beeline highway between Mesa and Payson



Spheroidally weathered diabase in a road cut at Salt River Canyon



Granite hill without spheroidal boulders north of Coolidge

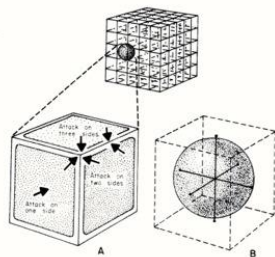


Figure 1 - How groundwater attacks the rock to form the spheroidal boulders

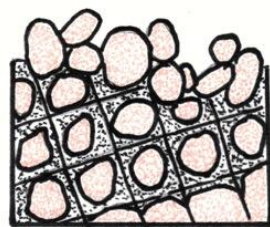


Figure 2 - Formation of the boulders underground and later erosion exposing them on the surface