25. Where can I find barite roses, the State Rock of Oklahoma?

Most occur between Guthrie and Pauls Valley. Noble calls itself the Rose Rock capitol of the world.

On April 8, 1968, the barite rose (also known as rose rock) became the official State Rock of Oklahoma. It is probably more common in Oklahoma than anywhere else in the world. The rock's petal-shaped clusters are caused by the intergrowth of divergent blades of barite (barium sulfate—$BaSO_4$) crystals.

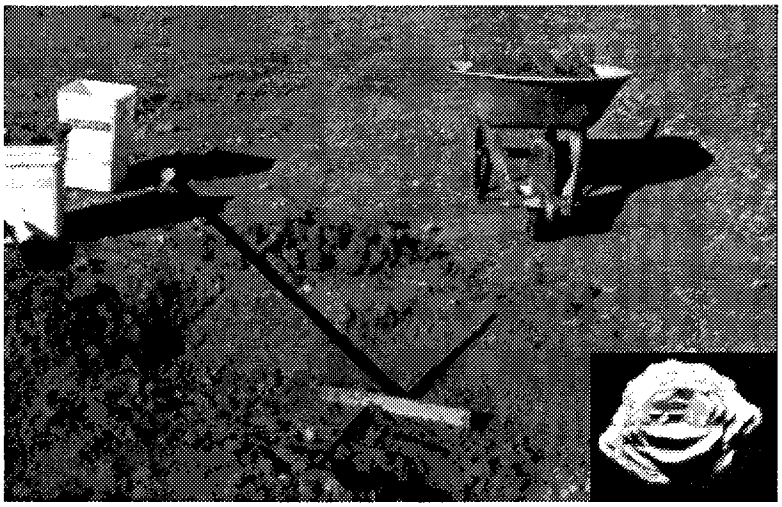

Figure 7 *(question 25)*. Barite roses— the State Rock—at a collection site near Noble, in Cleveland County. Most barite roses occur near the surface and collecting them typically involves a geologic hammer, pick, shovel, rake, and wheelbarrow. Large and especially fine specimens require removal with a pry bar. Inset photograph of an individual barite rose. (Outcrop photograph by Dave London, School of Geology and Geophysics, University of Oklahoma; inset photograph by Kenneth S. Johnson, Oklahoma Geological Survey.)

Barite roses are present in the Permian-age (Appendix 6) Garber Formation in a narrow belt that extends 80 miles approximately north-south through central Oklahoma. The most abundant and well-formed specimens (Fig. 7) are found just east of Norman and Noble. You can find small barite roses weathering out of the red sandy soil that forms on the Garber Formation along many county roads. Some landowners allow collecting on their land for a small fee; check with the Chamber of Commerce or the Timberlake Rose Rock Gallery and Museum in Noble (Appendix 5) for information about possible collecting sites. Local rock and mineral clubs (Appendix 4) also know where you can collect barite roses.

26. Is this a meteorite?

Possibly, especially if it's magnetic, looks metallic on a fresh surface, and has a crust that looks as though it melted.

Meteorites are broadly classified into three groups—stony, stony-iron, and iron. About 80% of meteorite finds are stony and about 20% are stony-iron and iron. There are several properties of meteorites that, when used in combination, enable geologists to distinguish them from terrestrial rocks and minerals:

(Information from the Institute of Meteoritics, Dept. of Earth and Planetary Sciences, University of New Mexico; see Appendix 5.)

1. Iron metal (actually an iron-nickel alloy) is visible on a broken surface. Irons are all metal; stony-irons are about half metal; and stonies contain only small flecks of metal.

2. Many meteorites, particularly the irons, are much denser (heavier) than most terrestrial rocks.

3. Most meteorites are magnetic. The stonies are less so than the stony-irons; and the stony-irons less so than the irons.

4. About 90% of the stony meteorites are called chondrites. (The others are achondrites.) They contain chondrules, small balls of stony material about 1 mm in diameter.

5. Many meteorites have a thin fusion crust, which forms as the meteorite's surface melts during its fall to Earth. If fresh, this crust resembles a black eggshell; terrestrial weathering turns the crust brown.

6. Some meteorites develop thumbprint-like depressions, called regmaglypts, as they fall through the Earth's atmosphere.

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