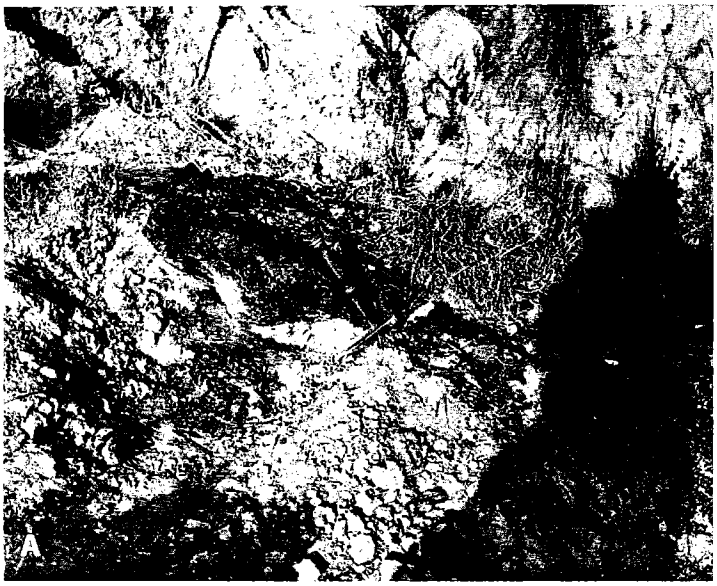
Meteorites commonly are confused with natural and man-made objects such as iron grinding balls, slag from smelters, iron fragments, the minerals magnetite and hematite, and volcanic rocks such as basalt. Most meteorites in Oklahoma have been found in the open prairies and grasslands of the western part of the State, commonly during plowing or harvesting. Meteorites probably are equally common in eastern Oklahoma, but there they are more likely to be hidden by thick vegetation.

Oklahoma's largest known meteorite is the Lake Murray meteorite (Fig. 8), which was found in 1931 near the lake in Carter County. When it was discovered, it was embedded in sandstone of the Antlers Formation; therefore, geologists believe it fell to Earth in Cretaceous time (Appendix 6). It is about 23 inches long and 16 inches in diameter; its original weight is estimated at 3,040 pounds. Half the core of the meteorite is on display at the Tucker Tower Museum in Lake Murray State Park.

On November 25, 1943, a fireball (a bright or brilliant meteor) broke up over Butler in Custer County and separated into multiple fireballs. The next day, residents near Leedey collected 24 meteorites weighing a total of 114 pounds from a strewn field 11 miles long and 2 miles wide.

On January 3, 1970, a meteorite fell near Lost City in Osage County, and four pieces were recovered weighing a total of about 37 pounds. The impact site is the first to have been located by the use of automatic camera stations that photographed and tracked the meteorite's path and impact site. (Information from Kenneth S. Johnson, 2000, written communication.)



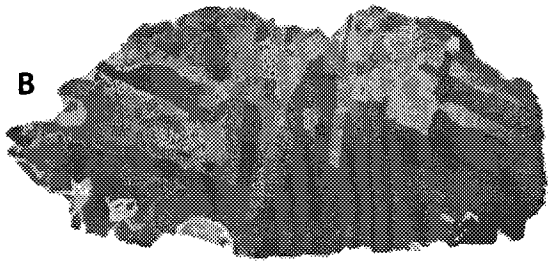


Figure 8 *(question 26)*. (A) The Lake Murray meteorite embedded in the Cretaceous Antlers Sandstone. (B) Photograph of slabbed Lake Murray meteorite. The polished interior of the Lake Murray meteorite shows a Widmanstätten pattern, which consists of an octahedral crystal arrangement of kamacite and taenite, two iron-nickel alloy minerals. The unusual crystal structure is the result of very slow crystallization under conditions of zero gravity. (Photograph A from Graffham, 1964, p. 215; photograph B by O. Richard Norton, Science Graphics, Bend, Oregon.)

Resources: Oil and Gas, Coal

27. Do I have oil or gas on my property?

You probably do have oil or gas beneath your property, but most likely not enough to justify the cost of drilling and completing a well.

In Oklahoma, there is a good chance that your property is underlain by oil and/or gas, because only a few counties have no known hydrocarbon resources. The real question is, "Can my oil and gas be produced economically?" Another question is whether you really own the mineral rights to your land; this is best answered by an attorney.

(continued on next page)