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Diamonds in the Soil

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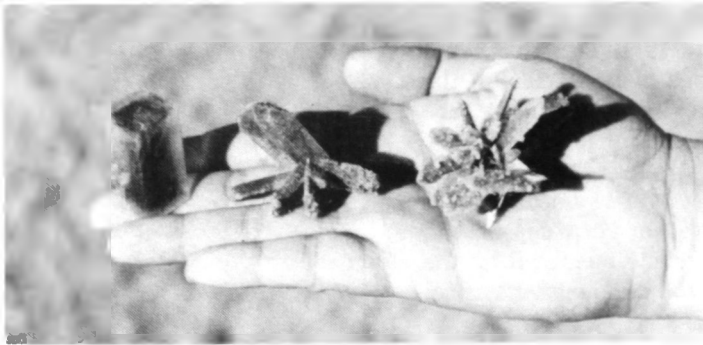
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The selenite crystals of the Great Salt Plains can be found in clusters or as single crystals.

Uniqueness in Alfalfa County

Diamonds in the Soil

Who knows what George C. Sibley thought in 1811 when he first saw the vast, flat expanse of white glistening salt and sand? The six Osage Indian guides who led him here had informed him of the vast amounts of salt available; but Sibley, who was the first white man to see this wonder of Western Oklahoma today called the Great Salt Plains, had no idea that crystalline jewels were only a few inches beneath the surface buried in the salty soil.

The Great Salt Plains located in Alfalfa County about four miles east of Cherokee is in itself a unique feature of Western Oklahoma and has played a significant role in the history of Oklahoma both before and after the arrival of the white man. It covers approximately forty square miles of almost perfectly flat terrain which is entirely devoid of vegetation. The floor of the plain is composed of silt and a very fine sand which is usually covered with a thin crust of white salt that gives it a snowlike appearance in the sunlight. Plains Indian tribes vied for control of the salt flats because of the large number of animals which migrated there for the salt supply. In the early days of the settlement of the Indian Territory, Western Kansas and Texas cattlemen sent wagons to the Great Salt Plains to haul back loads of this precious commodity. But beneath the white, crusted surface of this salt plain are objects that are precious for their beauty rather than need.

About six to eight inches below the surface in the sand and silt are crystals

of the mineral gypsum. When one thinks of gypsum, the large mounds of white rock gypsum that are so common to the western half of the state come to mind. But this crystalline form of gypsum, called selenite, exists as beautiful crystals that can have the shape of well-defined blades occurring as single crystals or in radiating clusters of from two to literally hundreds of crystals. These selenite crystals can be as tiny as one-carat diamonds or in clusters as large as a hand. When a hole is dug into the sand and silt, salt water that contains almost 30 percent dissolved salt rises until the hole is filled to within about six inches of the top. The brine water of the Great Salt Plains is thus concentrated enough that as the water evaporates in the soil crystals of selenite can form just above the water table. During warm weather, when conditions are right, the crystals form very rapidly and can increase in size as much as 26 percent through the summer months.

The formation of selenite crystals in this manner is a relatively rare occurrence in nature. It is known to occur only in such places as the clay around the Great Salt Lake in Utah, in the Laguna Madre in Texas, in Western Australia, and in the country of Tunisia. One characteristic of these crystals is unique only to the Great Salt Plains, however. The larger transparent crystals reveal an hourglass figure within the structure of the crystal. These reddish-brown hourglass figures inside the clear selenite are formed by the capturing of iron-bearing

sand inside the crystal as it grows. Only in the Great Salt Plains are such crystals found; and because of this, mixtures of selenite crystals from Western Oklahoma are found in many textbooks on mineralogy published in the United States.

The formation of these crystals with the hourglass inclusions is so unique that scientists from many of the universities in Oklahoma and surrounding states come to the Great Salt Plains to collect the crystals and study their formation. The collecting of these crystals is not limited to scientists, however. The U.S. Fish and Wildlife Service allows digging for these crystals on weekends and holidays from 8:00 a.m. to 5:00 p.m. by anyone who wants to have these beautiful minerals. The "digging" season runs from April 1 through October 15. On a given weekend, sometimes as many as one hundred people of all ages can be seen excavating holes with shovels in areas designated by the Fish and Wildlife Service as crystal collection sites. Many families use trips to the Great Salt Plains as weekend outings because children especially love to find these "diamonds" in the soil.

The uniqueness of Western Oklahoma expresses itself in many ways. These small crystalline wonders of nature are just another example. A few hours spent on a weekend in the summer at the Great Salt Plains can provide a very attractive and novel example to put on a fireplace mantel.

By Dr. Dale Teeters