

The agates and geodes of northern Chihuahua and southern New Mexico

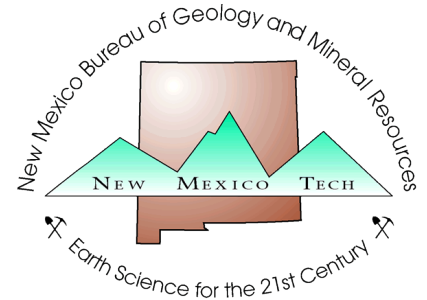
Brad L. Cross

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The annual [New Mexico Mineral Symposium](#) provides a forum for both professionals and amateurs interested in mineralogy. The meeting allows all to share their cumulative knowledge of mineral occurrences and provides stimulus for mineralogical studies and new mineral discoveries. In addition, the informal atmosphere encourages intimate discussions among all interested in mineralogy and associated fields.

The symposium is organized each year by the [Mineral Museum](#) at the [New Mexico Bureau of Geology & Mineral Resources](#).



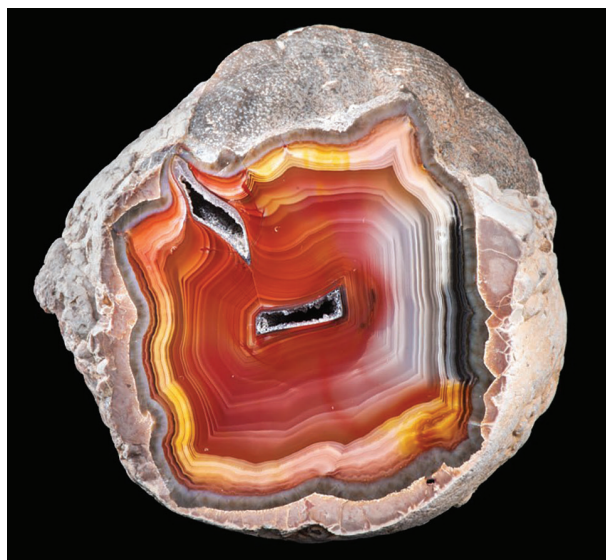
Abstracts from all prior symposiums are also available: <https://geoinfo.nmt.edu/museum/minsymp/abstracts>

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The Agates and Geodes of Northern Chihuahua and Southern New Mexico

—Brad L. Cross, 810 East Olympic, Pflugerville, Texas 78660, Brad.Cross@WSP.com

Since the 1940's, northern Chihuahua and southern New Mexico have gifted collectors with a wide variety of colorful, complex, and intriguing agates, geodes, and thundereggs. The occurrences are found as isolated deposits, most within Tertiary-age andesites, rhyolites, and ash flow tuffs. The rare exception is Crazy Lace Agate which occurs in Cretaceous-age limestone.



New Mexico Thunderegg, Luna County, New Mexico

Traveling south of El Paso, Texas along Mexican Highway 45, the first commercial quartz geode deposit is found near Villa Ahumada, Chih., approximately 83 miles south of the border. Intermittent deposits of colorful agate nodules and quartz geodes can be traced in a southerly direction into the state of Durango, a distance of at least 450 miles.

A vast majority of the more popular agates such as Laguna, Coyamito, Agua Nueva, and “Coconut” geodes are concentrated mid-way between El Paso and Chihuahua City in the Sierra Gallego region. A second trend of occurrences continues off to the northwest some 125 miles to the modern-day city of Nuevo Casas Grandes, then 100 miles north up to Palomas and Deming, New Mexico on the U.S.—Mexico border where Hermanas thundereggs, Big Diggins Agate, and a host of other banded, sagenite, and plume agates are found.

Each variety of agate is usually named after a nearby ranch or railroad station and all are found on private land, usually large cattle ranches. Although quality material could be easily collected from the land surface in the 1940's and 1950's, loose material quickly disappeared and hard rock mining was initiated.

Although there are many varieties of Mexican agate, each has a unique set of characteristics such as specific color ranges, fineness of banding, nodule size and shape, as well as external pitting and color that help provide clues in identifying the exact location.

Laguna Agate

This nodular agate is perhaps one of today's most popular varieties, recognized by its colorful, distinct, ornate, fluted, and holly leaf-like fortifications. The brighter color combinations are many times found in the central portion of the nodule where clear chalcedony tends to alternate with opaque bands. There are several colors found in Laguna that seem to be particularly typical. Raspberry red, shades of orchid, pleasing soft yellows, orange, and gray bands



Laguna Agate, near Estacion Ojo Laguna, Chih., Mexico

are especially common. The most prized specimens have contrasting combinations of color such as purple, red, and orange.

Nodules ranging in size from a hen egg up to a large cantaloupe are mined immediately east of Estación Ojo Laguna in the Sierra El Oso, located approximately 170 miles south of El Paso.

Coyamito Agate

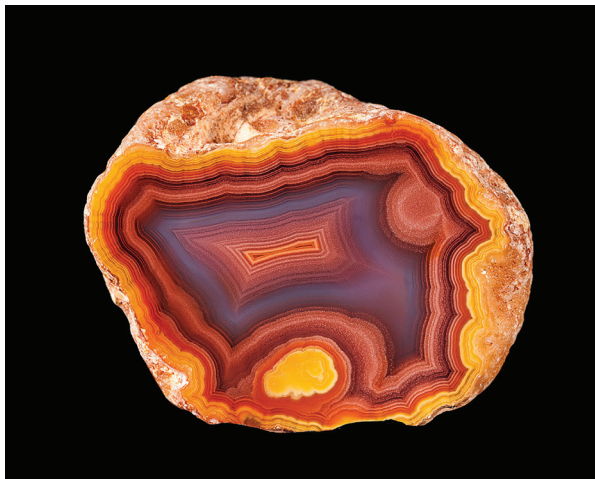
Rare color combinations of purple and yellow, rose and white, as well as various shades of red, orange and mustard are found in this Chihuahuan gem. Unlike the Laguna Agates, most of the brighter colors typically occur in the outer perimeter. The clash colors, coupled with ghostly pseudomorphs of evaporitic minerals, make this agate one of Chihuahua's most prized gems.

Found on Rancho Coyamito Norte, or about 30 miles north of the Laguna Agate deposit, two primary deposits are identified on the ranch. The Los Alamos area is the most southerly productive region on the ranch and characteristically contains muted or dark shades of lavender and yellow bands encasing both molds and casts of past mineralization. These agates are particularly large and can reach upwards of a foot in diameter.

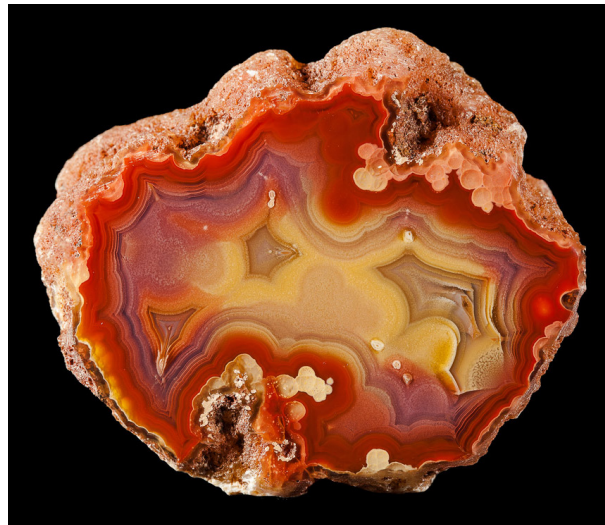
Some 500 yards to the north of Los Alamos is La Sonoreña, a grouping of small and isolated concentrations of agate. Here, various small pits are found on the slopes of the andesitic hills where each pit tends to produce a unique type of agate. Few agates offer the variety and appeal as those from this ranch.

Moctezuma Agate

Pastel shades of salmon, pink, yellow, tan, and white readily identify a Mexican agate locality as Rancho El Barreal. Found east of Estación Moctezuma, these nodules are located within the mining concession Laguna Verde. These nodules typically have a sili-



Coyamito Agate, Rancho Coyamito Norte, Chih., Mexico



Coyamito Agate, Rancho Coyamito Norte, Chih., Mexico

ceous and sometimes chalky white banana peel-like rind. Chromatography, a separation of coloring agents by semi-permeable bands, are many times found in Moctezuma Agate and provide abrupt and dramatic color changes.

Apache Agate

Unlike the common fortification pattern found in other nodular agates, Apache agate has bright red, vivid orange, and dark yellow splashes of color seemingly suspended as draped folds and swirling veils in colorless to deep blue chalcedony. Located on Rancho La Viñata, most of the host andesite has succumbed to the attacks of mother nature, leaving the irregular-shaped nodules to prominently stand out in a beige clay-like soil.

Agua Nueva Agate

Occurring in both nodule and vein form, the trademark characteristic for Agua Nueva Agate are remarkable straw-like tubes. Vein agate, reaching over 14 inches in thickness, occurs on Rancho Los Nogales as a golden brown to red moss agate with individual pockets of purple, white, and pink tube agate. The individual tubes average three-quarters of an inch in diameter, many times being completely encased by euhedral quartz. Found within the same mining concession, Mi Sueño, nodular banded agates shaded in lavender, purple, gold, and yellow are also found.

A second area of the ranch, claimed under the name Agua Nueva, produces nodular agates with a flat base and somewhat domed top. These nodules characteristically contain an outer perimeter of dark yellow to light orange moss agate. The central portion of the nodules typically contains rosy violet hues contrasting with the occasional dark green, black, or white band.



Apache Agate, Rancho La Vinata, Chih., Mexico

Crazy Lace Agate

Towering above the desert floor to an elevation of 6,200 feet, the Sierra Santa Lucia hosts numerous agate mining concessions and diggings. Primarily occurring as a vein agate, irregular curved and twisted bands in shapes of zig-zags, scallops, bouquets, sunbursts, and eyes compose this agate. The peculiar structures are many times grouped together in a larger spherical complex. While individual bands of red, yellow, orange, or brown occur, the vast majority of the material is gray or white. However, widespread staining is primarily responsible for much of the color. Unlike all other Mexican agate, Crazy Lace Agate is mined from a highly siliceous, dark gray Cretaceous limestone.

“Coconut” Geodes

The popular Mexican “coconut” geodes occur within an ash-flow tuff at Las Choyas, a remote geographic point approximately 22 miles northeast of Ojo Laguna, Chih. These quartz geodes are mined from a two square-mile area and have constituted a multi-million dollar business. Geodes from this location are easily identified by their near-perfect spherical shape. They occur in a 44 million year old ash flow tuff and the geodes, when brought to the surface, appear white from the clinging fragments of the volcanic ash in which they were imbedded. Roughly three-foot diameter shafts are hand dug to depths of 100 feet or more through tenacious, welded ash flow tuff. Once the geode-producing unit is reached, tunnels are constructed in the highly altered tuff, following the pay zone.

Only 20 percent of the geodes are hollow and those that are, usually have an outer wall of variable thickness consisting of blue-gray banded agate while other walls are composed entirely of siderite. The

walls grade inward into well-defined crystalline quartz of colorless, smoky, and amethystine varieties. Finally, there is a complex of late-stage sequence of minerals, including carbonates, manganese oxides, and iron oxides and hydroxides, in the centers of many of the geodes.

Hermanas Thundereggs

World class thundereggs can be found approximately 38 miles southwest of Deming, New Mexico. Multi-color banded agate, opal, and various varieties of quartz can be found within the round spheroidal nodules known as thundereggs. This section of land is currently under lease by Lori Lytle Coleman of the Spanish Stirrup Rock Shop. No digging or surface collecting is allowed except during scheduled times with clubs and Lori.

Deming Agate (Big Diggins Agate)

Known for its beautiful banded agate in shades of reds, yellows, blues, and smoky blacks, lapidarists from around the world have cut and polished this classic agate for many years. There are currently 11 Bureau of Land Management claims in the Big Diggins area. Collecting is allowed only with permission from a claim holder.



Laguna Agate, near Estacion Ojo Laguna, Chih., Mexico



Laguna Agate, near Estacion Ojo Laguna, Chih., Mexico