NM Mineral Occurrences

articles by Ray DeMark

"Scientific discoveries are made by men who are mentally prepared to observe and interpret anything they experience." The Mineral Kingdom by Desautels, 1968, p. 38

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Black Range Tin Deposits

Sep85 News Nuggets

The Black Range tin deposits, more properly known as the Taylor Creek Mining District, were first discovered in l918 by J. W. Welch, who had been prospecting for gold along Taylor Creek (Hill, l921). Hill visited the deposits in l920 and he states: "stream tin has been found in the gravels of Taylor Creek, Squaw Creek and Hardcastle Creek; and cassiterite, with specular hematite, occurs in veinletts in soft, altered rhyolite." A number of claims were located and filed along these creeks in the l930's. Actually, there are l2 areas in which tin deposits are known to occur and five more in which they have been reported scattered over a region that embraces about 450 square miles on the west side of the Black Range in Catron and Sierra Counties. Small shipments of tin ore were made in the late l930's and early l940's, but no significant attempt at large scale mining has taken place due to the discontinuous nature of the vein deposits and the sparseness of the stream deposits in comparison to other world occurrences, particularly in Malaysia and Australia. Exploration of these deposits does continue however and tin claims continue to be filed. Perhaps, one day….?

Cassiterite (SnO_2) is the only tin mineral known to occur in the area and it can be found as small red crystals intergrown with hematite in thin seams and veins and also as wood tin in the dry washes. Wood tin is a reniform variety with concentric and divergent fibrous structure, resembling the rings and grains of wood. This is caused by the alternate layering of cassiterite and hematite.

The highest concentration of vein and placer deposits appears to e near the border between Catron and Sierra countries about 10 miles east of the town of Beaverhead. It is reached by taking I-25 south to SR 52 (north of T or C) and then west on SR 52 to Winston and then north to SR 59. Many claims and prospects are located north of SR 59 roughly 20 miles west of the intersection of SR 52 and SR 59.

Rare Minerals from Hillsboro

Mar85 News Nuggets

New Mexico appears to be the only state in the U.S. which has an occurrence of a rare lead manganese silicate mineral, kentrolite. Although previously reported from Franklin, New Jersey, this occurrence has reportedly been discredited. The chemical composition of Kentrolite is $Pb_2Mn_2Si_2O_9$ and it is isostructural with the rare mineral melanotekite, $Pb_2Fe_2Si_2O_9$, which until recently was also only known in the United States from a location in New Mexico. The area that these rare minerals are found is about 2 miles east of Hillsboro, New Mexico. Melanotekite was first described from this area in an article in the American Journal of Science (1898) by C. H. Warren. Although Warren described the melanotekite as coming from the Rex and Smuggler Mines, no verifiable reports of this mineral have subsequently been noted from these mines.

Kentrolite was found at a nearby small mine (name undetermined) in May 1981. Positive identification was accomplished by Paul Hlava in September 1981 by microprobe analysis. The kentrolite occurs as small, highly lustrous, black (actually, very dark reddish brown) crystals. Many of these crystals are grown together in small rosettes or balls while individual crystals are also found. They occur on a brown to red brecciated, jasper-like rock and the rosettes/balls range in size from .5 to 2 mm. Kentrolite and melanotekite have only been found at a few isolated locations world wide, most prominently at Langban, Sweden and usually in a massive form only. Thus, the Hillsboro occurrence is important mineralogically.

Capitan Mountains, Japan-Law Twined Quartz Crystals

Aug85 News Nuggets

From about the late l950's, Japan-Law quartz crystal twins started to become available to collectors from dealers from a location "somewhere" in the Capitan Mountains of Lincoln County, New Mexico. During the l970's, beautiful smoky quartz Japan twins also from a mysterious location "somewhere" in the Capitan Mountains appeared on the market. These smoky Japan twins were immediately popular with collectors and literally thousands have been sold to collectors world wide. There now appears to be serious question as to whether these crystals became smoky through natural radioactivity or by clandestine irradiation by an unscrupulous dealer or dealers. The apparent source of the quartz crystals is a small surface working under private claim and previously called the Mina Tiro Estrella (Shooting Star Mine). It is reached by taking U.S. 380 east from the town of Capitan to Forest Road (FR) 57. FR 57 leads northeast from U.S. 380 for 6 miles and intercepts with a pipeline road that terminates near the claim. The Japan Law twins at this location have a very slight natural smoky color but it is considerably lighter than the "irradiated" crystals. They are identical in all other characteristics such as size, crystal face development, etc. In any case, the preponderance of evidence indicates that the dark smoky Japan twins labeled from the "Capitan Mountains" are from the Mina Tiro Estrella location and the smoky color has been created by irradiating the somewhat naturally smoky crystals that occur at this site.

The slight smoky color of the quartz crystals at the Mina Tiro Estrella is most likely due to the occurrence of allanite, a slightly radioactive complex silicate that is found in association with the quartz. Lustrous black, prismatic crystals of allanite are relatively common and they are found on or in groups of usually untwined quartz crystals. Crystals up to 2.5 cm have been found but 2 to 5 mm is more common. Of interest to the micro collector is the occurrence of bright, cinnamon colored wedge-shaped titanite (sphene) crystals. They are usually about 2 to 5 mm in size. Collecting at this site is not permitted without permission of the claim owners.

Mahoney Mining Area

Jan85 News Nuggets

During the coming year, this column will feature a New Mexico mineral occurrence that is unique or outstanding in some respect. This month's location is the Mahoney Mining Area which is part of the Tres Hermanas Mining District.

Located in the Tres Hermanas Mountains of southern Luna County, (Ne ¼ Sec 28, T 27 S, R 9 W) the area can be reached by traveling ten miles due south on an improved dirt road that leaves State Highway 11 approximately 13 miles south of Deming.

The ore deposits of the area occur in Pennsylvanian and Mississippian limestones and marbles that are adjacent to a tertiary quartz monzonite stock. The ore deposits are of the lead-zinc replacement type and near vertical vein deposits controlled by fractures and or faults.

Noteworthy at this location is the first New Mexico and United States occurrence of the new mineral molybdofornacite, a new lead-copper-arsenate-molybdate hydroxide first described from Tsumeb, Namibia, in 1983. Analysis and identification was completed by the "team" of Paul Hlava and Peter Modreski. Data on the new mineral from New Mexico was presented in a paper by Hlava, Modreski, et al at the Friends of Mineralogy Symposium held in conjunction with the February 1983 Tucson Gem and Mineral Show.

Molybdofornacite from the Mahoney Mining Area occurs as flat, tabular crystals generally less than 1mm across. The color ranges from a grass green to almost emerald green and the crystals are transparent with a glassy luster. The crystals occur singly and in small intergrown groups.

The rock in which the molybdofornacite occurs has been completely silicified and brecciated. Presumably, the silicification and subsequent mineralization was related to the quartz monzonite intrusion. No primary minerals remain in this rock due to strong oxidation. The rock is highly fractured and the molybdofornacite usually occurs in oxidized vugs along these fractures and in veins filled with a gossan-type material. In some instances, however, the molybdofornacite is found in unoxidized vugs without the usual gossan. Much of the brecciated rock has been recemented with secondary calcite which is largely anhedral and may form veins up to 1cm in width. Drusy quartz and chalcedony also lines many of the vugs.

Minerals found in direct association with the molybdofornacite include:

- Fluorite - relatively abundant in clear, cubic xtals up to 1mm in size.

- Mimetite - Commonly found as groups of intergrown xtals ranging in color from a bright yellow-orange to a dirty yellow. Individual xtals are less than .5mm in size. It also forms as small globules or balls with indistinct individual xtals faces and a gray color.

- Wulfenite - Forms as crystalline "glaze" of flattened, intergrown crystals in association with balls of gray mimetite, Color varies from orange-yellow to yellow-gray with an adamantine luster.

- Euhedral willemite is abundant on the mine dumps and occurs as well-developed hexagonal, colorless prisms and fine acicular sprays of xtals. Xtals are generally less than 2mm long. It has not been found in direct association with molybdofornacite. Primary and secondary minerals of lead and zinc were the ore minerals of Mahoney Mining Area, but with the exception of the ubiquitous willemite, none were observed on the mine dumps in the vicinity of the molybdofornacite. You may refer to New Mexico Bureau of Mines and Mineral Resources Bulletin #72 by George B. Griswold for further information on this mining area.

Spinels From The Caballo Mountains

Feb85 News Nuggets

A fascinating spinel location occurs near Truth or Consequences in the northern Caballo Mountains. This location was initially described by Charles Maxwell in partial fulfillment for a Master’s degree in Geology from the University of New Mexico in l952. The spinel is pleonaste, a variety in which iron replaces some of the magnesium in the standard formula for spinel (MgAl2O4).

The location can be reached by taking state road 51 east from Truth or Consequences to the bridge crossing the Rio Grande. Immediately after crossing the Rio Grande, proceed down a dirt road cutting back to the west. After .6 mile, you will reach the Mescal Canyon arroyo. Turn South and continue for 2.3 miles. This is about as far south as you will be able to proceed. Depending on the amount of rainfall that has fallen in the area, this "road" can be traversed by a vehicle with a short wheel base without 4-wheel drive. You will need to hike about a mile to the south from this point to reach the collecting area.

Originally described as "black diamonds" by prospectors exploring the area in the l920’s, the spinel crystals occur as rough octahedrons (some modified by the dodecahedron) and malformed crystals of various shapes up to one-half inch in size. The crystals are for all practical purposes opaque and invariably black with a dull exterior luster and a splendent luster on fresh fractures. The crystals occur as phenocrysts in nepheline-olivine basalt flows along with large phenocrysts of amphibole (up to an inch). Both the spinel and amphibole crystals can be found weathered out of the rock in the vicinity of the basalt flows. Northrop’s Minerals of New Mexico describes this location as "the first recorded occurrence of primary pleonaste in New Mexico and the first occurrence of pleonaste of such unusually large size in the southwest." For more specific collecting information of these exceptional crystals, please contact your truly.

Paramount Canyon, Sierra Co., New Mexico

May85 News Nuggets

One of the most pleasant and interesting mineral locations in New Mexico occurs in the tin-bearing area of the Black Range in Sierra County. The spot is Paramount Canyon and it features some uncommon minerals. Tertiary age rhyolite flows are exposed along the walls of Paramount Canyon and the minerals of interest occur in lithophysal cavities within the rhyolite. Perhaps the most noteworthy mineral to occur at this location is bixbyite (Fe,Mn)2O3. It is a rare mineral that is only known in the U.S. from the Thomas Range, Utah besides the occurrences in the Black Range. It is a black mineral that occurs in lustrous cubic crystals up to 4 mm in size. Often the cubic crystals are modified by trisoctahedron and octahedron faces. Another highly sought mineral from this location is red beryl. The red beryl from Paramount Canyon resembles the red beryl that also occurs in the Thomas Range, Utah. The crystals are hexagonal and flattened so that the prominent faces are the pinacoids. The largest crystals found to date are about 4 mm across and are not found in direct association with the bixbyite. Occurring with the bixbyite is the uncommon mineral pseudobrookite (Fe2+3TiO5) which is found in prismatic, black crystals that can be found up to 3 to 5 mm in length. Hematite (Fe2O3) crystals are quite common in the cavities and can also be found as "masses" of intergrown crystals that have been broken out of veins occurring in the rhyolite. Micro crystals of cassiterite (SnO2) are also found in the cavities. Small crystals of fluorite, quartz and sanidine feldspar are also found in the cavities.

Paramount Canyon is reached by taking I-25 to SR 52 north of Truth of Consequences, then proceeding west on SR 52 to Winston. At Winston, SR 52 turns north. Proceed north for 9 miles to an intersection with SR 59. Go west on SR 59 for 20 miles (2.2 miles past the intersection with Fire Roads 677 and 665). Turn south at this point on an inconspicuous dirt road. The rim of the canyon and the collecting area is about .4 miles down this dirt road. The area is heavily forested with Ponderosa Pine and the elevation provides for pleasant temperatures during the day which makes for ideal conditions. Good collecting!

Victorio Mining District

Apr85 News Nuggets

The Victorio Mining District is an area that is infrequently visited by mineral collectors but nevertheless offers a number of uncommon minerals of interest to collectors. Located in Luna County about 2 miles south of the "town" of Gage, the district is easily reached by proceeding West on I-10 to the Gage exit about l5 miles west of Deming. It is an old lead, zinc, silver and gold mining area but perhaps of more interest is the deposit of tungsten and beryllium in the area. Most of the lead, zinc, silver and gold mining occurred in an area called Mine Hill while the beryllium and tungsten deposits are concentrated in the Middle Hills area. The mining district lies in the Victorio Mountains which are a group of ridges of volcanic and sedimentary rock trending east-west and rising about 700 feet about the surrounding plains. The middle hills are composed of Ordovician, Silurian and Cretaceous sedimentary rocks, into which several small bodies of granite porphyry and andesite have intruded[i] .

A north-trending quartz vein called the Irish Rose vein was mined for the tungsten bearing mineral wolframite which occurs as dark reddish brown masses up to several inches across. Wolframite can still be found on the dumps in association with scheelite. The scheelite is best detected at night with the use of a portable UV lamp. Secondary bismuth minerals such as beyerite, a yellow to green bismuth carbonate may also be found on the dump, frequently in association with small wulfenite crystals. A recent discovery at this mine is the occurrence of stolzite (identification by Paul Hlava) in very small (.5-lmm) crystals within vugs in the massive beyerite. This is only the second reported occurrence of this mineral from New Mexico. Colorless beryl crystals are also found on the dumps up to 3cm in length imbedded in milky quartz.

An area called Tungsten Hill is located about 200 yards east of the Irish Rose Mine. A number of shallow vertical shafts and other workings dot this area which makes hunting for scheelite at night a little bit awkward, but the persevering collector will be rewarded with rock (tactite) which is shot through with the typical light blue

fluorescence of scheelite. Of greater interest at this location, perhaps, is the occurrence of well-formed helvite crystals of a pale yellow to amber color. Some of the crystals are up to 6 mm in size while most are l mm or less. Some occur in a marbleized rock and must be etched out with acid to reveal the crystals. Grossular garnets are abundant in the tactite in this area as are other typical contact-silicate minerals.

Good Collecting,

Ray

[i] Bulletin 72, Mineral Deposits of Luna County, New Mexico by George B. Griswold