The BACKBENDER'S GAZETTE

The Newsletter of the Houston Gem & Mineral Society Houston, TX

Volume XXXVIII - No. 6 June 2007

President's Message

by Matt Dillon
2007 HGMS President

Spring has flown by way too quickly, and my rock collecting is put on hold until the cooler and dryer weather returns. Meanwhile, here are some items about recent activities at our club and issues we are dealing with. Tom Wright and his crew are about to begin the process of building the new room in our garage/storage area. The first step is to move the stairs over next to the door leading into the saw and grinding room. A temporary storage facility is rented for the purpose of holding our property that would have been in the way of the construction. A process for "Lost & Found" is being inaugurated, and our faithful volunteers are working hard planning our next great show in Humble.

If you left items or boxes in our storage/garage area, you will discover your property has been moved. If you cannot find them in the clubhouse, we have either moved them to the recently rented Public Storage facility, or one of your Section leaders has helped move them out of Tom's way and into another area of storage such as the attic. The construction project should not take longer than two to three weeks to complete, and then we will begin the process of moving items from the storage facility back to the clubhouse. However, in this I need your cooperation.

You must label any containers belonging to your Section with the Section name—and no personal items can be stored at the clubhouse. If you spot a box or item you know is your personal property, please take it home as storage area space will be more

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General Meeting Programs

May 22: Rock Hunting in Nevada and Arizona—Matt Phillips will show pictures of the Grand Canyon and Sedona, Arizona taken during his recent honeymoon.

June 26: Matthew Phillips is talking to John Caldyne about giving a talk on cultured pearls.

Contents

Every article submitted to the BBG is edited for grammar and content prior to publication. Any flaming is removed.

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Purpose of HGMS

The objectives of this Society are to promote the advancement of the knowledge and practice of the arts and sciences associated with the collecting of rocks, minerals, fossils, artifacts, and their identification and classification; the general lapidary art; the collecting and identification of gemstones; the designing and execution of jewelry or metalcraft; and to provide the opportunity to obtain, exchange, and exhibit specimens and rough or finished materials.

Membership dues are $30 for an adult membership, $40 for a couple, $50 for a family (including all children aged 5-18), and $8 for a youth membership (ages 5-18).

Advertising rates: $70 for 2 months, ¼ page; $150 for 6 months, ¼ page.

MEMBER: American Federation of Mineralogical Societies & South Central Federation of Mineral Societies.

All meetings are held at the Clubhouse located at 10805 Brooklet near the intersection of Highway 59 (Southwest Freeway) and Sam Houston Parkway (Beltway 8). See the calendar inside the back page for when the different Sections meet. The General Meeting is the fourth Tuesday of each month at 7:30. The HGMS Internet address is **http://www.hgms.org**.

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limited due to the new work room. I have developed a procedure to assist in identifying the boxes of various Sections, and I will be happy to pay a visit to your next Section meeting to explain the process. I will provide you with materials that will help you with the process. Each Section is asked to choose a different color label for ease in the identification of items after they are stored.

Another problem that has two areas of concern is personal items people are forgetting to take home. The most common items we find are rocks and clothing with no ownership identification. These simply hang around until someone takes it upon themselves to throw the item away or to move it to a new location (of which no one else is aware)—until we are cleaning up or moving stuff around, and we find it again.

The other concern is the reporting of lost or stolen property, which appears to be on the increase. I believe the two concerns are related and have come to the conclusion we need a formal process for handling items left at the clubhouse. I am instituting a formal "Lost & Found" process which I hope you will all use regarding the documentation of items and the claiming of them.

I will place a "Lost & Found" form in the office. It will be kept in the office and can be viewed upon request. It will be a list of things we have placed in a large Rubbermaid storage container that I recently purchased and labeled for this purpose. Two items are in the container already, and those are the first entries on the form. Anyone claiming an item must give a description of it to a Board-member before the item can be claimed and removed from the container. As soon as Tom Wright and his crew have finished moving the stairs to their new location, I will place the container in the attic near the top of the stairs to make it easy for members to retrieve their property. The "Lost & Found" form requires a date of entry for each item placed in the container and a date the item was removed. I will ask the Board of Directors to determine the length of time we will store items and how they are to be disposed of after that time-period as passed. As soon as the process is officially in place, I will announce it in the BBG, put a notice on our Web site and on the bulletin board, and ask Neal Immega to send out an e-mail to his list to get the word to as many club members as possible.

Thanks in advance for your cooperation with all of these issues.

And last but by no means least, as we near the half-way point in planning this year's big show in Humble, our tireless Show Committee and Chairperson are hard at work making sure it will be a great success again this year. Be sure to pay them a visit and meet the members who will be happy to see you. The committee meets the second Tuesday of every month, and they would love to have some of you who are not familiar with what they do come by between 7:30 p.m. and 9:30 p.m. You might be surprised at what you can do to take an active role in our yearly show.

The Many Varieties of Quartz

by Denise Bicknell
Member of the Houston Gem & Mineral Society

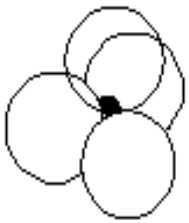
The mineral quartz, SiO_2 or silicon dioxide, is considered to be the most common mineral found in Earth's continental crust. It is found in igneous, metamorphic, and sedimentary rocks worldwide and in an amazing number of forms and colors. Over time, a wide assortment of varietal names, nicknames, and local names have been used to distinguish between these forms. This single fact makes it quite confusing to many, especially newcomers.

Properties of Quartz:

To understand quartz we must first describe what makes it uniquely itself. Quartz is composed of silica and oxygen at a rate of 1:2 and is represented by the chemical formula SiO_2. Quartz crystallizes in the trigonal system and shows three-fold symmetry. It is ranked 7 out of 10 on the Mohs scale of hardness making it a fairly durable, or hard, mineral. It has a specific gravity of 2.65 and a vitreous (glassy) luster. Quartz has a conchoidal or "shell-like" fracture. Conchoidal comes from the Latin word "concha" which is derived from the Greek word "konche" meaning "shell." Although quartz has cleavage, it usually is not apparent in most specimens.

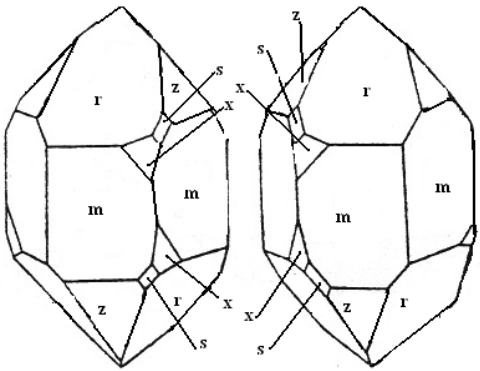
Structure of Quartz:

The basic building block or unit of quartz is the silicon tetrahedron which consists of a single silicon atom surrounded by four equally-spaced oxygen atoms that form a pyramid. You say, but quartz is SiO_2, not SiO_4. The silicon tetrahedron has a negative four charge (-4). The central silicon ion has a positive four (+4) charge, and each oxygen has a charge of negative two (-2), making each silicon-oxygen bond equal to one half the total bond energy of oxygen. This allows each oxygen atom to bond with another silicon ion, linking one tetrahedron to another. In other words, each oxygen atom is shared with a linked neighboring molecule, making quartz SiO_2.



Silicon Tetrahedron

Silicon tetrahedrons are linked together corner to corner. The tetrahedra alternate with one point up and the next point down, creating a spiral. This spiral may twist either to the right or left with respect to the c-axis, creating either right-handed or left-handed crystals. This handedness can be seen in quartz crystals that display the *x* and *s* faces. If they are on the



lower right-hand side of the dominant *r* face of the termination, then the crystal is right-handed. If they are on the lower left side, then the crystal is left-handed. If the *x* and *s* faces are absent, then handedness cannot be determined.

Classification of Quartz:

In the nineteenth century, the science of mineralogy benefited from the work of James Dwight Dana. He developed a mineral classification system similar to Lineaus' genus–species categories used in botany and zoology. In 1854 he published the fourth edition of his System of Mineralogy. It was in this edition that J. D. Dana used a classification system based on chemistry (elements, sulfides, oxides, etc.). Dana's work is now in its eighth edition entitled *Dana's New Mineralogy*. *Dana's New Mineralogy* classifies minerals by both chemistry and crystal structure. Based on Dana's Eighth, quartz is classified as a silicate. By definition a silicate is composed of one or more metallic elements combined with one or more silica tetrahedron (SiO4). The silicates are the largest and most complicated grouping of minerals. As stated earlier, silicates are composed of the silica tetrahedron which allows them to link with other silica tetrahedrons in such a manner as to form double tetrahedrons, rings, sheets, chains, or frameworks. These structures, along with the single tetrahedron, are the basis for the six subdivisions of the silicates which are based on their structure rather than chemistry. Quartz is classified as a framework silicate, or tectosilicate. Other classification systems, such as Strunz (used mainly in Europe), place quartz with the oxides because of its chemistry.

Divisions of Quartz:

Quartz is divided into two major divisions: macrocrystalline and cryptocrystalline. In some of the older literature, the term *microcrystalline* is used instead of the current *cryptocrystalline*. Macrocrystalline quartz is characterized by individual crystals that can be seen, while cryptocrystalline quartz has no visible crystals. Cryptocrystalline quartz's true crystalline nature can be seen only when thin sections are examined with the polarizing microscope. Within these two categories are many forms and colors of quartz that have been given names that describe them.

Macrocrystalline Quartz:

The typical shape of a macrocrystalline quartz crystal is a six-faced prism terminated with two three-sided pyramids with alternating faces (rhombohedrons). The six terminal faces often alternate between larger and smaller faces. It is these faces that make quartz's three-fold symmetry visible and makes it trigonal. If the crystal is terminated on both ends of the prism, it is said to be doubly terminated. Prism faces are usually striated horizontally.

"Drusy" Quartz, Missouri, USA
Denise Bicknell Collection

Quartz also forms crust-like coatings of minute crystal points known as a druse or drusy quartz.

Rock Crystal group
(Notice the striations on the prism face)
Mt. Ida area, Arkansas
Denise Bicknell Collection

Rock crystal occurs as colorless, well formed crystals. In the United States perhaps the most famous locality for rock crystal is the area of the Ouachita mountains in west central Arkansas. Numerous mines produce beautiful small to large crystals in singles and plates. The best part is that the collector can go there and collect his own crystals. Fine, doubly-terminated rock crystals come from Herkimer and Montgomery Counties area of New York, USA. Austria, Switzerland, and Germany have produced many fine specimens. There are hundreds of localities worldwide.

Quartz var. Amethyst
San Bernardino County, California, USA
Denise Bicknell collection
Notice how the coloration deepens at the tips.

Amethyst is lavender to purple in color and frequently is a deeper color at the tip of the crystal. Its color is derived from Iron III, Fe^{3+}. Exposure to radiation causes the Fe^{2+} ions which replace the silicon in the center of the SiO_4 tetrahedron to lose another electron and form Fe^{3+} ions. Long-prismatic crystals are fairly uncommon, with short terminated prisms being the predominant form. Amethyst scepters capping rock crystals or smoky quartz crystals are common from alpine localities. Amethyst is often found lining geodes and cavities as points or druses. Bahia and Rio Grande do Sul, Brazil, are by far the most well known localities for amethyst producing spectacularly sized and colored amethyst "cathedrals" and lavender flower-like groups. In the Unites States, amethyst is known in Maine, North Carolina, Georgia, Pennsylvania, and Arizona. Another famous North American locality is along the north shore of Lake Superior near Thunder Bay, Ontario, Canada where the amethyst crystals are often coated or included with hematite leaving the crystals reddish in color or with reddish tips. Long prismatic amethyst crystals come from Amatitlan, Guerrero, Mexico and Las Vigas, Veracruz, Mexico. The Las Vigas crystals are usually colorless at the base and violet to purple at the tips. The Amatitlan crystals are colorless or white at the tips and tend to darken to violet, then to

reddish, and finally to a browner color at the base. Mexican "coconut geodes" from Chihuahua, Mexico are frequently lined with amethyst points. Amethyst and milky "cactus quartz" (sometimes called "spirit quartz") crystals and groups have been coming from the Boekenhouthoek area, Mpumalanga Province, South Africa.

Amethyst with included goethite
Brazil
Denise Bicknell Collection

Citrine is yellow, but it rarely occurs naturally. There appears to be several causes for the coloration of citrine. One is the presence of iron in the form of $Fe3^{+}$. Another appears to be the presence of minute amounts of aluminum along with natural irradiation. A third cause is the heat treatment of amethyst which causes the amethyst to lose its purple color and turn yellow mimicking citrine. Heat-treated amethyst is frequently passed off as citrine. Citrine localities include Brazil, Russia, and Madagascar.
Ametrine is an unusual variety. It contains both yellow citrine and lavender amethyst in the same crystal. Its name is a simple combination of amethyst and citrine. The most famous well-documented locality is the Anahi mine, Bolivia. Ametrine has occurred at Amethyst Hill in the Central Hill Country of Texas (Raines and Smith).

Smoky quartz is colored grey to black or brown. Occasionally you will hear darkly colored smoky quartz referred to as morion. Smoky quartz crystals from the Cairngorm mountains in Scotland are often referred to as Cairngorm. Smoky quartz coloration occurs when rock crystal quartz is exposed to natural radiation and when Al replaces some of the Si, producing AlO_4 groups. This creates dislocations in the crystal's internal structure, affecting transmitted light and causing the crystals to reflect light differently, creating the darker coloration. Pikes Peak in Colorado, USA is known for its

Smokey Quartz, Microcline var. Amazonite
Middle Most Mountain, Hales Location, New Hampshire, USA
Denise Bicknell Collection

Smoky Quartz
Jessieville, Arkansas, USA
Denise bicknell collection
This smoky quartz specimen has been treated to produce its deep coloration.

Smoky Quartz
Mooralla, Victoria, Australia
James Tzaferis Specimen and Photo

smoky quartz as are the pegmatites of Maine and California, USA. Middle Moat Mountain, New Hampshire, USA is known for smoky quartz crystals that are paired with the feldspar group mineral microcline, variety amazonite. Hallelujah Junction on the California/Nevada, border is also a known locality. Smoky scepters are common. Smoky quartz is common in the Alps. "Coconut geodes" from Chihuahua, Mexico are frequently lined with deeply-colored smoky points. Smoky quartz rarely occurs in the Ouachita Mountains of West Central Arkansas, USA; however, lower quality rock crystals are frequently induced artificially to become smoky crystals.

Milky quartz is a white "milky" color. Its coloration is due to inclusions of numerous gas and/or fluid inclusions. Most often it occurs in massive form although nicely formed crystals are found as well. Massive hunks of milky quartz can be associated with gold. Notable localities for this quartz variety include Val D' Aoste, Italy and Germany. Wonderful milky "skeletal" iron-stained quartz crystals come from Diamond Hill, South Carolina, USA. The Idorado, Camp Bird, and other mines in the San Juan Mountains of Colorado, USA produced many lustrous milky quartz crystals.

Rose quartz is pink. It has long been thought that like smoky quartz, rose quartz owes its coloration to exposure to radiation. Recent research indicates its coloration may be due to inclusions of a fibrous mineral such as Dumortierite (Gorveca, Ma, and Rossman). Rose quartz is usually found as massive hunks. It is found in South Dakota, USA and is that state's official mineral. Crystals are rare, although they are known in Newry, Maine, USA and Minas Gerais, Brazil.

Quartz can also have a variety of inclusions such as rutile, hematite, goethite, schorl, the Chlorite Group minerals, clays, or the Mica Group minerals. Rutilated quartz is rock crystal, smoky quartz, or milky quartz that contains needles of golden colored rutile. Aventurine is quartz, or the rock quartzite (metamorphosed sandstone), that contains green chromium mica. Hematite inclusions can transform colorless rock crystal to a bright blood-red color or produce red caps on amethyst such as those found at Thunder Bay, Ontario, Canada. Schorl, one of the Tourmaline Group minerals is responsible for producing "tourmalated" quartz. Inclusions of brookite are most famous from Miller Mountain, Garland County, Arkansas, USA. Hardangervidda, Norway, is known for its spectacular anatase crystals which can be embedded on and in rock

Rose Quartz
Massive
Unknown Locality
Denise Bicknell collection

Rose Quartz
Crystals in a tiny geode with calcite
Dona Ana County, New Mexico, USA
Denise Bicknell collection

crystal. Goethite inclusions in amethyst from Brazil are quite attractive under a microscope and make wonderful micromounts. Fluid inclusions are another possibility. Bubbles of water, bitumen, and even gas can be trapped within the crystals. When a large enough pocket of fluid occurs along with a small amount of gas, a moving "bubble" is created. These enhydros are popular among quartz enthusiasts. Be careful though because these are sometimes faked.

"Herkimer Diamonds" are doubly-terminated, short-prismatic, rock crystals characterized by a wonderful clarity giving rise, in part, to their nickname. They lack striations on their prism faces which in part is responsible for that wonderful clarity. These crystals are specifically from the Herkimer County and Montgomery County area of New York, USA. Many times you see doubly-terminated, unusually clear, rock crystals from other areas called "herkimers." This practice is deceptive because the very name implies a specific area. Other names for quartz of this type are "Cape May Diamonds" (Sunset Beach, New Jersey) and "Cornish Diamonds" (England).

"Pecos Diamonds" are doubly-terminated quartz crystals that range from translucent to transparent. They are white to yellow, red to nearly black. These small crystals are

Quartz included with a number of other minerals
Curvelo, Minas Gerais, Brazil
Denise Bicknell Collection

Rutilated Quartz
The Tingha Sands, NSW, Australia
Quartz with included rutile is known locally as "grass stone."
James Tzaferis specimen and Photo

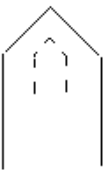
Hematite Coated Quartz
Thunder Bay Mining District, McTavish, Canada
Denise Bicknell Collection

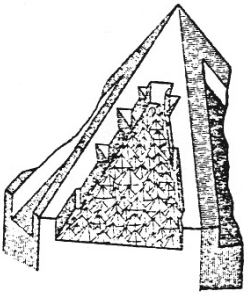
Fluorite coated Quartz
Emerald Mine, Emmaville, NSW, Australia
James Tzaferis Specimen and Photo

"Herkimer Diamonds"
Hasting's Farm Locality
Fonda, New York, USA
Denise Bicknell Collection

found in the gypsum outcrops of the Seven Rivers Formation along the Pecos River in southeastern New Mexico, USA.

Phantom quartz crystals have the appearance of a smaller crystal entombed inside them. (See image on right.) These occur when a crystal has a separate mineral precipitated on its surface or included in it as it is growing. The mineral records the size and shape of the quartz crystal





Skeletal Quartz
(Goldschmidt)

On right:
Iron Stained Skeletal Quartz
Diamond Hill, Anterville, South Carolina, USA
Denise Bicknell Collection

when the other mineral was deposited. After the second mineral is deposited, the quartz once again grows, enclosing the other mineral within. Phantoms also form when growing conditions change. These may be a smoky quartz crystal or milky quartz crystal enclosed by colorless rock crystal or by fine zones of amethyst parallel to the termination. Some crystals exhibit multiple phantoms.

Skeletal quartz is a case of the edges of the crystal growing faster than the faces leaving a frame-like or skeleton-like appearance. These are also called “fensterquartz” or “window quartz.”

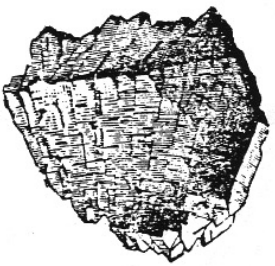
“Faden quartz” refers to a white thread-like line that runs through a tabular group of crystals. These form as quartz develops in cracks that widen slowly. If the quartz is attached to both sides of the crack and become separated, the quartz continues to grow and heals itself, leaving a scar of liquid and gaseous inclusions.

“Tabby quartz” or “tabular quartz” is a quartz crystal that has a flattened appearance.

“Gwindel quartz” refers to groups of stacked, twisted quartz crystals. Gwindels can be “open

"Tabby" Quartz
Arkansas, USA
Denise bicknell Collection

"Gwindel Quartz"
(Goldschmidt)



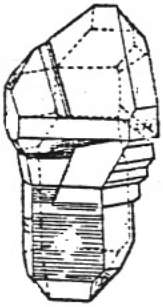
gwindels" or "closed gwindels." These strange-looking crystals appear to have grown sideways, forming parallel to the c-axis and along an a-axis. Gwindels are quite rare forming in alpine-type vugs. The most important localities are the Central Alps and Russia.

Sceptered quartz is a crystal that has a second generation quartz crystal growth on its tip that grew from the older generation's crystal lattice (internal structure). The second generation crystal is usually larger than the original crystal, giving the appearance of a scepter. The scepter may be centered or off-center. Reverse scepters occur when the first generation crystal is larger than the second generation crystal growth.

Double Smoky Scepter
Glenwood, Pike County,
Arkansas, USA
Denise Bicknell Collection

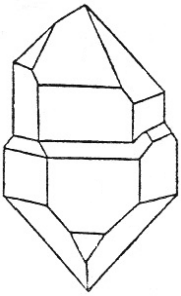
Multiple scepter
Glenwood, Pike County
Arkansas, USA
Denise Bicknell Collection

Reverse Smoky Scepter
Mooralla, Victoria, Australia
Denise Bicknell Collection

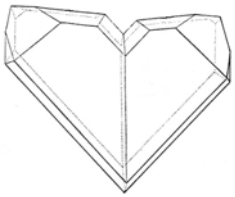


On Left:
Scepter (Goldschmidt)

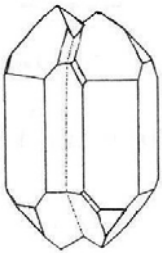
On Right:
Reverse Scepter (Goldschmidt)



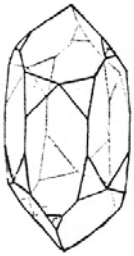
Twinned quartz is the result of an intergrowth of two individuals. This happens when "the contact plane is a prominent plane in both crystals, and the two individuals are symmetrically arranged either side of it. When this is observed and the plane is a frequent face, or when many identical intergrowths on a less common plane are observed, we speak of the pairing as *twinning"* (Pough 1953). Japan-law twins, Brazil-law twins, and Dauphine-law twins are the most common quartz twins. There are two main divisions in twinning: parallel and angular. Brazil and Dauphine twins both exhibit parallel orientation of the main axes. Japan-law twins have the principle axes at some angle, usually slightly less than 90 degrees. Japan-law twins are quite rare while Brazil-law and Dauphine-law twins are common, often occurring together. There are several variants of each law.



Japan-law Twin
(Goldschmidt)

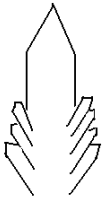


Dauophine-law Twin
(Goldschmidt)



Brazil-law Twin
Goldschmidt)

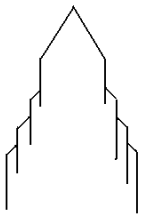
"Candle quartz" has tiny crystals growing on the prism at a slight angle away from the prism. It resembles a candle with wax dripping down its length. In some cases it just refers to long slender crystals in the shape of a candle and is sometimes called candlestick quartz.



"Candle Quartz"

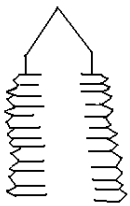
On right:
"Candle Quartz"
Bor Pit, Dal'negorsk, Far Eastern Region, Russia
Denise bicknell Collection

"Cathedral quartz" crystals (see drawing on right) have smaller parallel crystals growing closely against the larger crystal, giving a cathedral-like appearance.



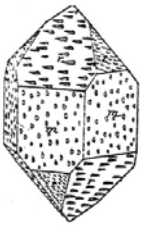
Curved or bent quartz crystals are the result of mechanical stresses fracturing a growing crystal. The crystal is then healed with the sections slightly ajar in relation to the long, or c-axis.

"Cactus (aka 'spirit') quartz" has a second generation of tiny crystals growing at right angles on the prism of the original crystal. The original crystal's termination is usually free of new crystals. Milky, amethyst, and citrine "Cactus quartz" crystals and groups have been coming from Boekenhouthoek area, Mkobola District, Mpumalanga Province, South Aftrica. You may have seen them ascribed to Magliesberg, but that is an



"Cactus
Quartz"

"Cactus Quartz"
Boekenhouthoek, South Africa
Denise Bicknell Collection



Etched Quartz
(Goldschmidt)

incorrect locality. Some of the milky groups have been treated to produce yellow or purple colorations. For the most part, these crystals have a natural coloration.

Etched quartz crystals happen when portions of the crystal are dissolved due to environmental changes such as temperature or pressure changes.

Quartz perimorphs occur when quartz coats another mineral such as calcite, preserving the original mineral's outer shape. The original mineral is then removed leaving a cast, or empty shell, of quartz after the original mineral.

Quartz cast after Calcite
Cavnic, Romania
Denise Bicknell Collection

Quartz pseudomorphs occur when quartz replaces a mineral but the outer shape of the original mineral is retained.

Cryptocrystalline Quartz:

Cryptocrystalline quartz, like macrocrystalline quartz, is composed of the silicon tetrahedron. It can be further divided into two groups: *fibrous* and *granular*. Granular cryptocrystalline quartz is composed of microscopic quartz grains that contain the framework of the silicon tetrahedron wholly within each grain bounded by its surface. These grains are arranged at angles to one another so that the silicon tetrahedra do not line up with the neighboring grain. Fibrous cryptocrystalline quartz is composed of evenly spaced microscopic rod-like fibers that wholly contain the silicon tetrahedra framework. These fibers show a regularly alternating pattern of elongation, with some parts of the fiber being "length fast" and others being "length slow." This means that in the "length fast" portion of the fiber, light travels faster along the long axis, and in the "length slow" portion of the same fiber, light travels slower parallel to the long axis. This implies that the fibers have twisted as they grew (Cordua). This phenomenon is still being investigated.

Fibrous Cryptocrystalline Quartz:

Chalcedony is the general term for fibrous cryptocrystalline quartz. It has a waxy, vitreous, or occasionally dull luster. Chalcedony often has a botryoidal surface that is smooth and translucent to transparent. It can be white, gray, brown, black, blue, yellow, red to brownish red, or green. It can be banded, spotted, variegated, mottled, or have tree-like inclusions. Chalcedony that is white to grey, bluish, or brown and has no patterns is known merely as *chalcedony*.

Quartz var. Chalcedony
San Jacinto River at Hwy. 242
Montogmery County, Texas, USA

Quartz var. Chalcedony "Rose"
Black Hills Rockhound Area
Safford, Graham County, Arizona, USA

Agate is a term used to describe chalcedony with concentric bands of color around a central point. The bands can be wavy with angular turns and are often oval rather than circular. Chalcedony most often is translucent. Agates can be formed in sedimentary rocks like those from South Dakota and Nebraska, USA or in igneous rocks like those from Michigan and Texas, USA or Mexico. Agates go by a myriad of names derived from their locality, coloration, or some characteristic. In fact, there are hundreds, probably thousands…, of agate names! I will describe just a few. Brazilian agates come from a large deposit in southern Brazil and Uruguay. They are known for their large size and are frequently died bright, garish colors. “Condor” agates from the Patagonia region of Argentina are generally bright reds and browns. “Fairburn” agates from South Dakota USA have crisp, bright, fortification bands (concentric bands that resemble the walls of a fort). “Lake Superior” agates, or “Lakers” as they are frequently called, are small agates from the Lake Superior area. “Laguna” agates, from Chihuahua, Mexico, have a “holly leaf” appearance to their bands.

"Fortification Agate"
Unknown Locality
Denise Bicknell Collection

"Agate"
Mississippi, USA
Denise Bicknell Collection

Sometimes chalcedony that contains inclusions—moss agate and plume agate—is named “agate” when it does not fit the technical description of agate. “Moss” agates are translucent chalcedony with “moss-like” inclusions. “Plume” agates have feather-like or plume-like inclusions. The Big Bend region of Txas, USA is known to produce colorful red and golden colored plume agate. Ths type of material has been referred to as agate for so long it is commonly accepted as “agate.”

Unpolished plum-colored
chalcedony
with red banding
Three Rivers, Texas, USA
Denise Bicknell Collection

"Fortification Agates"
Republic of Botswana, Africa
The orange coloration was obtained
by heat treatment.
The pink coloration is natural.
Denise Bicknell Collection

"Moss Agate"
Unknown location
Denise bicknell Collection

"Prairie" agates from South Dakota, USA are less detailed and have a paler coloration than Fairburn agates. These are not true agates either—they are composed of chert or jasper rather than chalcedony. Sagenitic agates have inclusions of rod-like minerals, usually a zeolite. "Thunder Egg" agates feature irregular, star-shaped outer rinds enclosing a colorful or scenic chalcedony. Central Oregon and Deming, New Mexico in the United States are known for their Thunder Egg deposits. "Waterline" agates have straight parallel bands resembling a waterline.

"Thunder Egg"
showing waterline agate
Deming, New Mexico, USA
Denise Bicknell Collection

"Thunder Egg" with macrocrystalline quartz center
Little Florida Mountains, Luna County, New Mexico, USA
William Anderson Photo and Specimen
This specimen has been dubbed the "Monster in the Gloom"
for its resemblance to a big fish with an even bigger mouth!

"Thunder Egg"
Near Hermanas, Luna County, New Mexico, USA
William Anderson Photo and Specimen

"Sagenitic Thunder Egg"
Little Florida Mountains, Luna County, New Mexico, USA
William Anderson Photo and Specimen

Onyx features flat parallel banding of black and white. (You may see the term “Mexican onyx” or “cave onyx” used; this refers to banded calcite and is not a member of the quartz family.)

Sardonyx, a sub variety of onyx, features flat parallel light and dark banding of reds and browns, the colors of sard and carnelian.

Carnelian is a red to brownish red to orange-red chalcedony without pattern. It can grade into sard.

Sard is a medium to dark brown chalcedony without pattern.

Chrysoprase is a green chalcedony. Its color comes from nickel oxide as an “inclusion.”

Quartz var. Carnelian
Coromandel Peninsula, New Zealand
Denise Bicknell Collection

Heliotrope, aka bloodstone, is dark green chalcedony with included spots of red jasper (a granular variety).

“Tiger’s Eye” has been thought to be a pseudomorphous replacement of quartz after crocidolite. There are still some questions as to whether Tiger’s Eye is a case of pseudomorphism or if the quartz and crocidolite crystallized at the same time—many specimens contain included crocidolite. Tiger’s Eye has a silky luster and is chatoyant. It is frequently used as a gemstone and is cut as a cabochon to best display its beautiful reflective property. Tiger’s Eye is most often from South Africa.

"Tiger's Eye"
South Africa
Denise Bicknell Collection

Granular Cryptocrystalline Quartz:

Chert and flint are technically rocks but are often considered to be a variety of quartz. They are not composed just of quartz but often contain calcite and dolomite. Since the concentrations of calcite and dolomite are often very low, they get lumped with quartz. It can be very difficult to distinguish between chert and flint. That said, let's move on and try to distinguish between them. Both are opaque, have a smooth surface, but can be grainier than chalcedony.

Quartz var. Chert
Tri-State Mining District,
Baxter Springs, Kansas, USA
Denise Bicknell Collection

Chert can be white, grey, brown, blue, or even greenish. It tends to be lighter in color than flint, is usually found in beds with bedded limestones, and can contain fossils.

Flint can be grey, blue, brown, or black in color. It is usually darker in color than chert and is found as nodules in chalk. This will help you determine what you have unless the flint has no chalk rind left or is a paler than usual color. Some report that flint is slightly harder than chert. Early man made tools out of both flint and chert.

Flint
Three Fivers, Texas, USA
Denise Bicknell Collection

Flint
Bandera, Texas, USA
Denise Bicknell Collection
These specimens were pried out of a roadcut.
Each nodule was coated with a powdery chalk.

Jasper is an opaque variety of granular cryptocrystalline quartz and is usually colored red, brown, or yellow due to iron oxides. Green colored jasper is called *prase*. Jasper means "spotted stone." Distinctive jaspers from specific localities have been given a variety of names, and sometimes you even hear mixtures of jasper and agate being referred to as jasp-agate or ag-jasper. Jasper may have a mottled appearance or have moss-like inclusions of another mineral. Picture jaspers exhibit these characteristics well. When cut they often reveal patterns that resemble scenes and go by names such as Biggs, Owyhee, or Poppy. Healed fractures can produce interesting patterns and are known as brecciated jaspers. Spherical flow patterns produce pleasing appearances as demonstrated by Bruneau jasper, while mineral inclusions can produce colorful jaspers like the McDermit jasper. Jasper is the most common and abundant stone used for beads and lapidary work in China, and hundreds of newly named jaspers are in the market of today.

Quartz var. Jasper
Unknown locality
Denise Bicknell Collection

Quartz var. Jasper
Water-worn beach pebbles
Misawa, Japan
Denise Bicknell Collection

Prase was the name first given to a "leek green" colored quartzite, a rock. Then the name was also applied to "leek green" colored jasper; this is the most common and correct usage for the term. Recently it has been applied to "leek green" macrocrystalline quartz. The term is on the verge of losing its meaning because of misuse (mindat.org).

Undoubtedly quartz is a common, abundant mineral. Even so, it can be interesting and exciting to collect. A collector can put together a spectacular collection and learn a lot by making it the focus of a collection. Many collectors focus on a single variety such as agate, thunder eggs, or quartz crystals with inclusions, and they build spectacular collections. Lapidary artisans rely on its usefulness and versatility, using it in a variety of applications. Its hardness makes it durable, and its ability to take a polish makes it doubly desirable. Its many colors and growth forms can provide a collector with a lifetime of pleasure.

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Meet the Quartz Family

from The Jaspilite
via Glacial Drifter 03/82, Oregon Rockhound 11/82,
and Calgary Lapidary Journal 5/2007

Papa and Mamma Quartz Crystal belong to a very large family of rocks. They are called the **Quartz Crystal** Family to distinguish them from Uncle Agate's family and Aunt Opal's family, and a whole raft of cousin Quartzes. Then too, Mamma Quartz's maiden name was **Rock Crystal**. They came from Herkimer County, New York, and Papa often called her his little "Herkimer Diamond." She was very lovely—nicely shaped and perfectly clear and sparkling. Papa Quartz was **Milky Quartz,** and while he was nicely shaped too, he didn't sparkle like Mamma. Papa and Mamma Quartz had quite a large family. First there was lovely **Rose Quartz.** She often bemoaned the fact that she was dumpy and didn't have Mamma's nice figure. But she was so sweet and rosy pink that no one cared about her shape. She got her healthy color from eating her titanium every morning when she was a baby crystal.

Next came **Amethyst**. She took after Mamma Quartz with her nice shape and sparkling, clear color, except that Amethyst was the color of violets. She hadn't much cared for titanium when she was a baby, but she loved manganese which gave her the lovely lavender hue.

Smoky Quartz was the oldest boy in the family. Mamma Quartz really had a time at breakfast with her babies; each one liked a different food. Smoky wouldn't eat anything but carbon, so he had a grayish color.

Little **Citrine Quartz** started out to look just like her sister Amethyst, but one day in the hot summer she got overheated, and her lavender color turned to a deep yellow. But she didn't care really, because she was different from the others and still quite pretty.

The Quartz Crystal children had a younger brother whose name was **Ferruginous Quartz,** but almost everyone called him "Ferry." He was quite a handsome boy with an attractive red color which Mamma Quartz insisted was because he was such a good child and ate his daily portion of iron eagerly.

That's just about all of the Quartz Crystal family except the Ghost. He was known as **Phantom Crystal**, and he looked like all the rest of the family except that you could look right through him and see another crystal inside.

The Quartz Crystals were all quite important people: Papa Quartz was content to do just ordinary things, but Mamma was a brilliant actress and little Rose, Amethyst, and Citrine Quartz Crystal all grew up to be lovely jewels. Smoky and Ferruginous, the boys, took after their father and worked at ordinary jobs. Papa and Mamma Quartz Crystal were certainly very proud of their big family.

***Editor's note**: I thought this bit of whimsy fit in quite nicely with Denise Bicknell's very informative article on quartz.*

Friday the 13th of April at the International Gem and Jewelry Show in Houston, 2007

by Art Smith artsmithite@msn.com and
Denise Bicknell rockmom1@charter.net

Although the date might appear ominous to some, we had no major problems. We avoided the impending rain, broke nothing in dealers' booths, and most important, we did not buy anything we did not want. Going with more than one person in a car (in this case three) and with free entry passes covering each of us, the eight dollars parking was fairly tolerable. The initial decision to put Betty Jean in a transport chair was a good one; we took turns wheeling her, and we did not have to worry about her wandering off or falling.

First we headed for the wholesale area and registered. The only accident with the wheel chair occurred when I was pushing and the lady in front of us flashed her stamp to the guard. We then flashed ours, but she stopped to talk on her cell phone right smack in the entrance. The transport chair rolled right into the back of her legs as we were slowly moving into the wholesale area—as she was suppose to be. So cell phones can be a hazard to you not only when you are driving.

The wholesale area was loaded with bead dealers as has been the case the last couple of years. Of course the beads were mineral, rock, bone, ivory, glass, plastic, wood, and seeds which is not unusual, but you should know what you are buying before you pay for it. The increase and variety of jasper beads among the rock and mineral beads is of note. Most have names, but it is hard to tell if the name is something the dealer made up or is something he acquired from the manufacturer or the manufacturer's source for the material. In many cases the country of origin has been lost, but that is of little concern to most people. The colors and markings on the jasper beads may be bold or subtle. Recently a lot of jasper beads are of earth tone colors and few patterns so they blend well with other jasper beads in pinks, pale blues, browns, grays, and greens. The good thing is that most of these beads are at the lower end of the price scale. They can be high graded and blended so only the best matches are used in a necklace or other jewelry. The unused beads can be saved and used near the clasp as fillers that usually do not show.

While on the subject of jaspers, I might mention that Nature's Reflection had some fairly large giraffe heads that were expertly carved in China from orange jasper with white markings that seemed to fit perfectly the pattern of a giraffe's skin. I believe Tim said the jasper was from Australia.

The only dealer we saw in wholesale who was new and who had something different was Eugene McDevitt from Safety Harbor, Florida. He had a fair amount of boulder opal from Queensland, Australia. Also he had some nice palm wood cabs from northern Louisiana and some striking lined chert from Poland. The chert was cabs sized from small to very large and in a variety of shapes, but most were round or oval. The lines on the chert were dark and pencil thin and divided the pale brown chert into bands of varying size. Many of the lines were straight and parallel, but others were

sub-parallel and wavy. The patterns varied from piece to piece, but the colors were typically identical in each piece. We revisited the booth later and each of us bought a cabochon.

A dealer called Gemstone Materials, who has a booth that fronts in both retail and wholesale, had a lot of quartz in all sizes, shapes, and colors from Brazil. The amethyst cathedrals were good, and there was one very large eight by four-foot citrine cavity. I wonder if the person buying it will learn that it is created by heating the amethyst. Last year at this time there was some outstanding smoky quartz, but this year the stuff seemed picked over and priced a bit high for the quality of material offered. However large—just under baseball size—Oca geodes could be purchased for about $10 a half, and less than $20 for a whole one if you could match the halves. They had small quartz crystals, possibly some calcite and dark goethite inside, but most minerals were over coated by secondary quartz. Among the over-polished quartz crystals was a 7 to 8 inch clear crystal that had not been polished, but near its base was an included about ¾ inch dark, well-formed, tabular hematite or ilmenite crystal. The price quoted by the guy in wholesale was $100. The wholesale price by the girl in retail was $200. But the wholesale guy could not be found when it came time to make the final purchase, so it stayed there.

In the show retail area one whole isle was mostly tee shirts, women's hand bags, wallets, sunglasses, glassware, and exotic oriental clothing, but that is not unusual for this show. Tim and Holly Smith, Nature's Reflection, had some nice things—I've already mentioned the jasper carved giraffe. They had some nice prehnite specimens and some fairly large cabinet-sized, spectacular pale green icy-looking Chinese fluorites. They also had numerous other carvings including some nice ones of the lapidary material called petersite from South Africa with lots of blue in them. The petersite, long thought depleted, is again available. There was a nice plate of crinoids and some nice trilobite plates from Morocco. Too bad it was so close to Income Tax time and one could think about paying that instead of buying.

Doug Wallace, Mineral Search, had a booth down the isle with some gold from his recent mining at the Badger mine in Mariposa county, California. It is in a white quartz but does not have crystal shapes. He also had some wendwilsonite. Purple-red crystals with roselite named after Wendell Wilson, long time editor of the *Mineralogical Record.* Quite attractive Chinese calcite crystals with pyite or chalcopyrite lining the crystal edges were also noted in his booth. He had a variety of other things much like he does at our show. We both took advantage of small minerals he had in plastic bags for 1 to 5 dollars each. There were ruby corundum crystals, Chinese wulfenite fragments, tiny alluvial sapphires that were natural or faceted, New Mexico dolomites, plus others.

Most of the rest of the show was typical with a bit of this and that plus lots of jewelry and gemstones. The Afghan dealer had lots of very flashy finished jewelry, but Wali was not there. After walking by the booth, we were chased down by his assistant and told to come back while he took out his specimens. He unwrapped each one and each one was poor quality including some purple fluorapatite from the Pamir Mountains in

northern Afghanistan. He had no idea of what they were. Do you think we were set up to get a bargain? Not so, I have dealt with this guy before, and his prices are ridiculous. Besides, there was nothing worth buying at any price, and he would have had to pay us to haul them back to the car.

There were a fair number of carvings scattered around, mostly in serpentine but nothing much of interest. We were looking for a malachite cat to replace one that a customer of Columbia Trading had lost. I found one that was the exact size I wanted, but the face had an imperfection in the malachite so it would not do. It was $24 wholesale and would be $20 because of the damage. No way. One was found in Jeanne's the next week for $120. The civil wars in what was once Zaire, now Democratic Republic of Congo, have made the good malachite scarce but not that scarce. In such situations it becomes a case of if you want it, you have to pay the price. I think some day the value of the good Chinese carvings from good materials will be recognized, and the price will go up. Similar things are more than 10 times the price in Germany. They are just recently starting to sign their better pieces.

Satisfied that after well over two hours we had seen all we wanted to see, we headed to the car and again dodged the rain so our luck still held out.

Rock Birds

by Matthew Phillips

Something has been going on that many members at HGMS have shown interest in—the introduction and retaining of new people to club membership. Of course for each person the story is different, so I would like to tell mine.

For me the interest in what I call the lapidary arts began as a pebble pup in the 1960s. Our family traveled, and we enjoyed the development and expansion of super highways through the western United States. These allowed for easy access and exploration of untapped resources and gave access to never-ending views of the outdoor countryside. With a pickup truck, travel trailer, family, and a tank of gas, when summer vacation time came, we took to the road. The words "we are rock hunting!" opened doors to many good times and many new friends.

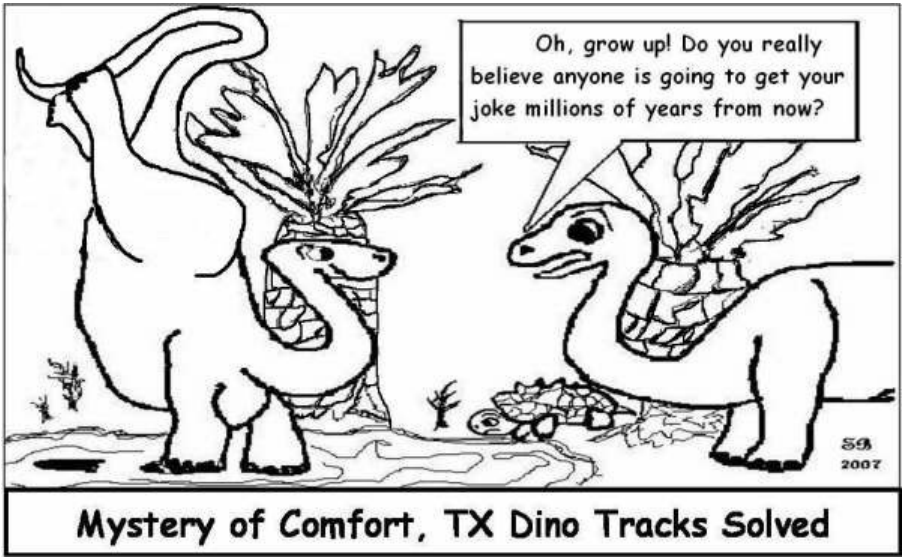
Now, years later, the family has passed on, and it is apparent to me that those years of travel and enjoyment in lapidary were some of the best times we had.

I knew about HGMS, it seemed a good idea to return to such a pleasurable activity and to do my part in spreading the good word that life is great and the HGMS activities are excellent examples of it. I first volunteered to help at the annual show in Humble, Texas. It was very rewarding, and the friendship of club members certainly encouraged me to make club activities as successful as I could. Like many others in the Club, my interests cover many areas. It was natural to use my photography skills in helping club activities and communication. One club activity that really drew me in is the Show Committee, and one of their activities is manning the information booth at the InterGem Show. One lady helping at that booth was demonstrating jewelry making and describing club activates to the interest of on lookers. Little did I know how my

life would change due to that chance meeting. I attended more club meetings and came to know her. I was becoming interested in something new. After being a lifelong single male, a love interest came as a surprise.

Comfort, TX—For All Who Are Not in the Know

by Sunday Bennett



Unusual dinosaur prints were discovered recently in a quarry outside of Comfort, Texas. The tracks show only the front impressions of a large sauropod dinosaur. The back footprints, that logic says would normally follow in a four-footed animal, are missing. This has presented much speculation in the field, and theories are numerous. I, being the loudest crow in the small corn field of the HGMS, think I've solved the riddle and have turned it into a cartoon. My idea is that the dinosaur was not as ignorant of humor as we once believed—it balanced on its two front feet and walked. Think of it as a kind of ancient joke from a humorous dino. Kudos to that dino and kudos to any of you who might believe my insane idea might hold any measure of truth. Enjoy

Susan Lenz Update

5/3/2007

by Norm Lenz

Dear HGMS Friends,

Susan had a Grand Mall seizure April 11 but recovered quickly. Susan's last MRI was April 23rd. We met with her doctor the next day. There is still no visible indication of tumor on her MRI.

Susan spent six days in the hospital last week for treatment of abscesses apparently

caused by sitting too much in one position. Antibiotics seem to be solving the problem. She was released Monday afternoon. We have some new cleaning procedures added to her care plan. Just when you think you have things under control, some new challenge pops up. The husband of a fellow patient we met at MD Anderson calls these "bumps in the road." They may be bumps, but they will rattle your teeth.

Positives:

- There is still no evidence of tumor regrowth on the April 23 MRI
- Blood counts, protein and electrolyte levels are good
- Heather is a wonderful home health aide and encouragement to Susan and us. She spent several long days with Susan and us in the hospital actively involved with Susan's care.
- Susan is feeding herself part of what she eats.
- She eats well, sleeps well, and does not seem to have any pain.
- The tremors are tolerable.
- We plan to visit Susan's mother in Indiana for Mother's Day and Tanya's birthday.

Negatives:

- She is very weak since her six days of inactivity in the hospital.
- Susan needs more assistance with dressing, walking, bathing, and eating than at my last update.
- She needs a wheelchair for distances longer than a few feet.
- Susan's memory, reasoning, and communication are not reliable when she is tired.

Photo: Susan, Heather, and Wendy (beautician) at Susan's last beauty shop visit. Wendy was great with Susan. Wendy works at David, Etc. on 11th street.

Thank you for keeping us in your thoughts and prayers while we continue our war.

Norm

In Our Library

by Art Smith
HGMS Librarian

The April library Sale was a big success. The library netted $672.75 and got rid of a lot of duplicate books. Some books that we will probably never sell here, or that we already have on the shelves, or that are not appropriate I am donating to the Hudson Institute in Peekskill, New York. It is a nonprofit organization that is trying to preserve historical mineralogical specimens, books, papers, etc. and have them available for research. Other volumes not related to our hobby will be disposed of locally. Most were so cheap that I assume that no members are interested in them. My goal was to reduce the surplus books by at least two thirds, and I believe this has been done.

The money will be used to resume our book binding. I had to fire our book binder. He has had some books since last August and has promised them to me several times since, but he never delivered, so I picked them up and will try and find a book binder that is more responsive. Unfortunately, none of the others are as convenient as he is.

I have ordered a group of books, and they shall be in shortly. Frances Arrighi has donated one book and ordered another on metals. She wanted them on the shelves for the Day Light Section. That has been done, but I failed to write down the titles so cannot give them here. They are under Lapidary – Metals and the author's name. Although I have stopped adding the *American Mineralogist* because nothing in them is relevant for us any more, I have ordered four volumes that will complete our set up to 2005. These four are 1930 and 1940 volumes that are very relevant, so the set will be complete.

Now I hope to get the clutter out of the library so that it will be easier to find books and move around in there. Thanks for your patience.

Update on Clements High School and the Science Olympiad

Advancing to the National Competition
E-mail from Julia Wong

Dear Mr. Blyskal, Mr. Immega, and Mr. Singleton

How are you? We competed in the Texas Science Olympiad at A&M this past weekend and qualified for the national competition! We placed second overall and will represent Texas with the first-place team at National Science Olympiad in Wichita, Kansas during the weekend of 5/18. This is the third year Clements High School has taken part in Science Olympiad and the first time we are advancing to the national competition!

Thank you so much again for helping us with the "Rocks and Minerals" event! We placed twelfth and hope to prepare better for National Science Olympiad. We really appreciate HGMS's help and will keep you updated on our progress. Thank you very much for your time and generosity!

Texas Science Olympiad Web site:
http://outreach.science.tamu.edu/scienceolympiad.asp
National Science Olympiad Web site: http://webs.wichita.edu/nso/
Sincerely, Julia Wong

News from the Louisiana Geological Survey

by Paul V. Heinrich
Louisiana Geological Survey
Louisiana State University
Baton Rouge, LA 70803

The Louisiana Geological Survey has PDF versions of its Public Information Series online at: http://www.lgs.lsu.edu/pubs/series.html

The available articles include:
1. "Louisiana Geofacts"
2. "46-Million-Year-Old Marine Fossils from the Cane River Site, North-Central Louisiana"

In addition, PDF versions of some of the published 30 x 60 degree geologic maps can be downloaded from http://www.lgs.lsu.edu/pubs/maps.html

Canada's New Government Provides Free Online Access to Digital Mapping Data
http://www.news.gc.ca/cfmx/view/en/index.jsp?articleid=290039&

"OTTAWA—Experts and other users of digital topographic data will no longer have to pay to use digital versions of government maps and data. The Honourable Gary Lunn, Minister of Natural Resources, announced that as of April 1, 2007, Natural Resources Canada (NRCan) began making its electronic topographic mapping data available to all users free of charge over the Internet."

"The data collections will be made available through the GeoGratis Web portal (geogratis.gc.ca). Users will need to have a geographic information system or image analysis system and the graphics applications of editing software to view the data."

Specific Web pages are:
"CanMatrix - Digital Topographic Maps of Canada" DRGs / Raster at:
http://geogratis.cgdi.gc.ca/geogratis/en/product/search.do?id=10119
and "National Topographic Data Base (NTDB), Canada" Vector / Shapefiles at
http://geogratis.cgdi.gc.ca/geogratis/en/product/search.do?id=8147

A New Dop Glue We Just Discovered

from The Voice 3/2007
via Quarry Quips 3/2007 and The Pineywoods Rooter 4/2007

While Jim and I were at the Tucson Gem Show, we visited the Rio Grande Catalog in Motion Show. Jim was talking to one of the guys doing demos and asked about using something besides "dop" wax when doing cabochons. Jim was told about a wonderful glue called Zap-A-Gap, and the accelerant called Zip

Kicker. It's awesome stuff and really works. Jim's been using it like crazy making cabs. How it works is you spray the Zip Kicker on the back of the stone and then put a little drop of the Zap-A-Gap on the dop stick. Stick the dop stick onto the rock and hold for a few seconds, and voila! They are stuck together. What's nice about this is you don't have to work with hot dop wax, and it doesn't get all over the piece you're working on—so you can work on very small cabs without a mess around the edges. What's also nice is all you need to do to separate the rock from the dop stick is to pop it off with a finger nail. In case you're interested you can find more information at http://zap.supergluecorp.com/pt04.html.

I don't know if this would work for those of you involved in faceting, but it's something to check out.

Day Light Section

by Frances Arrighi

Seventeen members attended the 9 April, 2007 meeting of the Day Light Section.

We made castings mainly using fine silver shot and a variety of materials over which to pour the molten silver. Besides broom straw and bamboo skewers, we had rock salt, pine needles, and a variety of peas and beans.

In the May 2007 issue of The Backbender's Gazette, there is an excellent article on this subject by Callie and Dennis Chapman taken from the Pineywoods Rooter (March 2007); therefore I will not repeat the instructions. Tom Wright melted the silver using the Turbo Torch. That is one of the most useful articles the club ever purchased. By melting the silver with this torch the time for the melt was cut tremendously, and everyone who wished to was able to make a casting. The rock salt casting appeared more delicate than the others and could lend itself to the setting of small stones.

The castings in the pictures with Tom Wright's article (below) were made by Beverly Mace, Tom Wright, and Charles Fredregill.

Professor Link will be with us again this summer, and we are going to work with the technique called Keum Boo. There is or will be a book on Keum Boo in the library in the Lapidary section. I strongly suggest that everyone read it by our June meeting. Also try searching the Internet for the subject Keum Boo. There are some good articles on this subject.

Making Silver Castings

by Tom Wright

The photographs on the next page are of sterling silver castings. Molten sterling was poured over a variety of common items, and the intent is to see which items make interesting patterns in the silver. For the most part I used approximately 1/3 ounce of sterling silver per casting.

Photo 1: The molten silver was poured over green pine needles, similar to broom-straw casting. The green pine needles were used instead of dried pine needles so the

Photo 1

Photo 2

needles did not have to be soaked prior to casting. This worked nicely, and the finished casting has a very delicate texture that I have not seen before in broom-straw casting.

Photo 2: The silver was poured over uncooked black beans. Because of the small size of the beans, the metal could not flow between the beans and so did not produce a very interesting pattern.

Photo 3

Photo 4

Photo 3: The silver was poured over uncooked long-grain rice. The final piece is rather bland—the rice is so small the molten metal cannot flow between the grains.

Photo 4: The silver was poured over uncooked lentils, and like the rice, the spacing between the lentils did not allow the metal to flow down between the lentils. The result is not very interesting.

Photo 5: The silver was poured over rock salt. This produced very interesting patterns, and the castings can be used in many ways in jewelry making.

Photo 6: The silver was poured over uncooked great Northern beans. The castings have interesting patterns and will be useful in making jewelry.

Photo 5

Photo 6

The remaining two photos were taken by Phyllis George. The one on the right was made by Charlie Fredregill a few years ago and is the traditional broom straw casting. It is over 2½ inches tall and 1¼ inch wide and was photographed sitting upright. The one below was made by Beverly Mace and is a pine straw casting.

Beading Group

by Michele Marsel

Beading Group Field Trip (or you could call it an Outing), Saturday May 19. We'll meet for lunch at Cafe Chino in Rice Village at 11:15 and then head for the beads at Z Bead and the Bead Shop, both in walking distance of the restaurant.

Next Meeting: Wednesday May 23 at 7 p.m. – **Cell Phone Charms**. Bring your leftover beads and follow the pattern or design your own. Charm cords, various glass beads, and metal charms will be provided. If you prefer to make a keychain, please bring your own findings.

Mark your calendar for the Stafford Bead Market. The show is June 2–3 at the Stafford Centre, 10505 Cash Rd., (903) 734-3335. HGMS Bead Group will tour the show on Sunday, June 3. Time to be announced.

June and July meetings: Wednesday June 27 and Wednesday July 25, both at 7 p.m. **Bead It Your Way!** Bring a project of your choice to work on and share with the group. Get help or just show off your stuff.

Lapidary Section

by Kathy Konkel

Back by popular demand, David Hawkins will take charge of our next hands-on presentation at our meeting **Monday, June 18 at 7:29 p.m.** We will make small plastic hammers which we will be able to shape as we desire. There will be a small fee for materials (probably less than $5.00 per hammer).

Our July 16 meeting will be popular also, as Tom Wright will demonstrate cold connection of metal with the use of rivets.

Many thanks to Boyce Gahagan, one of our successful local artists and fellow HGMS member, who generously demonstrated his wire wrap technique for faceted stones at our May meeting.

The shop will continue to be available for your use prior to the Lapidary Section meetings beginning at 5:00 p.m. until we close it at 7:15 p.m. The usual shop fees apply. Come early to the meeting and socialize, and please bring your current projects to show off.

Show News

by Sigrid Stewart

Thanks to the club and committee members who worked the April InterGem show. It's always a fertile hunting ground for new members and a great way to get us out there in the public eye. Looking around at the InterGem displays and dealers is always fun, too. We are currently planning the annual Show Committee Dinner to be held in June, so if you have been thinking about becoming active with the Show Committee, give me a call. We will be presenting new plans for displays and new incentives for members to participate in the show in the coming months, so stay tuned!

Many of you know that my daughter has moved to Japan to teach English, and during the week of April 29–May 6, Steve Blyskal and I made the 13-hour flight to Tokyo to meet her there and to visit the small town in which she is living, Tochigi City in Tochigi Prefecture, north of Tokyo. We captured many fascinating scenes on camera as pretty much all of Japan is an exercise in sensory overload. Of special interest to rockhounds is the importance of rocks and other natural objects to the Japanese aesthetic sense. Old rock walls in temple districts

Small garden lantern with rock, surrounded by gravel and other rocks

and palace grounds are lovingly preserved, and boulders are strategically placed in gardens according to centuries-old rules and religious observances. In the Otani garden in Tokyo, we saw large boulders of polished jasper that had been installed by a 16th century daimyo, or feudal lord, as well as interestingly-shaped rocks surrounded by raked gravel. The entire country is an island arc formed above the juncture of subduction plates, and it is very active seismically. But not while we were there, fortunately!

Mineral Section

by Steve Blyskal, Chairperson & Dean Lagerwall, Assistant Chairperson

From September through June, the Mineral Section meets on the 1st and 3rd Wednesdays of each month at 7:30 in the HGMS Clubhouse. All are welcome. The June 6 meeting will be our final official meeting before our summer hiatus. Have a great summer!

Upcoming Meeting Topics

June 6, Swap Night: Back by popular demand, we will have a Swap Night where excess material from our collections can be bought/sold/swapped. This will be an informal event and will be held inside. All sections are invited to participate and swap. Setup is from 7:00 to 7:30, and the formal meeting will be kept to a minimum to allow ample time for specimen exchange and socializing. Refreshments will be provided.

If you have any topics or ideas you wish to have presented or would be willing to present at our Mineral Section meetings, please contact Dean at dean_lagerwall@yahoo.com or (979) 480-9373.

HGMS General Meeting

April 24, 2007
by Denise Bicknell
HGMS Secretary

Meeting called to order at 7:35 p.m. by Matt Dillon, President

Announcements: Matt Dillon announced that no one should park in the parking lot on the north side of our building. That parking lot does not belong to us.

Construction on the Abrasives Room will begin as soon as all items in the construction area are moved. The club has rented storage space in a warehouse for three months where we will store items currently in the way. This will free up the area for construction work and materials.

Space in the garage area will be at a premium; therefore all items stored there following construction must be labeled to keep clutter at a minimum.

Our comfortable padded chairs were donated by Art Smith's church. Be sure to thank him next time you see him.

Show Committee: Sigrid Stewart announced that the Show Committee field trip to College Station will be rescheduled.

Representatives from the club manned the HGMS booth at the April International Gem and Jewelry Show. Turnout at the show was good, and booth attendants reported interest by individuals and vendors.

Section Reports:

- **Lapidary Section:** Kathy Konkel reported that there was an "Ask the Experts" session about cabochons at the last meeting.

  Boyce Gahagen will present a program on wire wrapping at the May meeting.

  The June meeting will feature a program by David Hawkins on making hammers, and in July Tom Wright will present a program on cold riveting.

- **Mineral Section:** Dean Lagerwall reported that the meeting on Wednesday, May 2 will be the Section's annual auction. All are invited. Specimens from HGMS club members will be auctioned with a portion of the proceeds going to the Mineral Section.

  Wednesday May 16, Steve Blyskal will present a program featuring Tennessee's Elmwood mine.

  The meeting June 6 will feature a Swap & Sell; all are invited.

  Steve Blyskal announced that he is making progress in obtaining needed materials for the School Kits but that he still needs some black shale and breccia. (Breccia is similar to a conglomerate, but with angular fragments rather than rounded fragments. These have been cemented by a finer material filling the spaces in between.) If you have access to either of these two rock types, please contact him.

- **Paleontology:** Terry Brawner reported that the next meting will be presented by Neal Immega and will feature crinoids. The group meets on the third Tuesday of the month.

  A field trip to Jacksboro Spillway is coming up.

- **Youth:** Beverly Mace reported that attendance at the last meeting was down and that she and the parents were able to move all the youth supplies to make way for construction of the new room.

- **Newsletter/Web Site:** Phyllis George announced that the last newsletter was later than usual because of difficulties in coordinating her new computer and software. The problems should be resolved before the next newsletter.

New Business: Karen Burns is preparing an order on gold-filled wire and sheet. Silver will be the next order. Contact her at karen_b_75@yahoo.com

Show 'n Tell: Dean Lagerwall displayed pyrite groups he collected on a recent trip to Midlothian.

Scott Singleton proudly (and rightly so!) displayed a Texas cycad collected near Stephenville while a well was being dug.

Matt Dillon passed around an agate showing pseudomorphs of aragonite and a jasper

specimen from the Zapata area.

Door Prize: No one signed up for the Door Prize, so it will be held over for next month's meeting.

Program: Our speaker for the evening was club member Farrar Stockton. He presented a program featuring the Cascades—The Fire Mountains of the West, and he concentrated on the eruption of Mount St. Helens in Washington State. He displayed impressive before, during, and after photos of the eruption which began at 8:32 a.m. Sunday, May 18, 1980. Shaken by an earthquake measuring 5.1 on the Richter scale, the mountain's north face collapsed in a massive avalanche that gained a speed of 150–180 mph. Pyroclastic flows reached a speed of 500–800 mph, decimating everything in its path. Nearly 230 square miles of forest were blown down or buried beneath volcanic deposits. The most damage was caused by an initial lateral explosion that lasted only 30 seconds. The eruption lasted nine hours. A mushroom-shaped column of ash rose 16 miles high in fifteen minutes and drifted downwind. Day became night as dark, gray ash fell over eastern Washington. A day later the cloud reached Houston and deposited a light coating of ash. The cloud circled the world for two weeks.

Farrar also discussed the impact the Cascades have on the northwest part of the country. Among other things, they serve as a barrier to moisture—the land is wet on the west side and desiccated on the east side.

Our thanks go to Farrar for an extremely interesting program.

Thanks to Beverly Mace for providing refreshments.

HGMS Board Meeting Minutes

May 1, 2007
by Denise Bicknell
HGMS Secretary

X	President	Matt Dillon	X	Faceting Rep.	Phyllis George
	1st Vice President	Matt Phillips	X	Lapidary Rep.	Karen Burns
X	2nd Vice President	Beverly Mace	X	Mineral Rep.	Art Smith
X	Treasurer	Lowell Stouder	X	Paleontology Rep.	Terry Brawner
X	Secretary	Denise Bicknell	X	Day Light Rep.	Sunday Bennett
X	Past President	Scott Singleton			

The meeting was called to order at 7:33 p.m. by Matt Dillon, President

Approval of April minutes was done via e-mail

Treasurer's Report:

- Lowell Stouder presented a balance statement as of March 31, 2007. A copy is attached.

- Beverly Mace will sign checks while Lowell is out of town until mid June.
- Matt Dillon reported that HGMS did not get the Conoco grant in 2006 because we failed to apply.
- Work continued on the proposed 2007 budget but was tabled until the Show budget figures can be obtained from Sigrid Stewart.
- Lowell Stouder said that he is having the 2006 income tax return done. Scott Singleton suggested that the treasuries of the sections should be included in the return.

Committee and Section Reports:

- **Newsletter/Web site:** Phyllis George reported that she received an e-mail stating that our Web provider has been acquired by another company based in Houston. The rates will remain the same, and hopefully customer service will be better. A copy of the e-mail is attached.
- Sunday Bennett moved that we reimburse Phyllis George for Adobe Acrobat 8 and Adobe InDesign that she needed to produce the BBG. The old software was not compatible with Vista. The motion was seconded by Lowell Stouder; it passed.
- **Library:** Art Smith reported that the book sale last month did very well. He will send the leftovers to the Hudson Institute, a non-profit organization in Peekskill, New York, for their library.

Review of Action Items from last Board meeting: Included in Business section

Old and New Business:

1. A storage space was rented for a three month period to store items that were in the garage area. This was done to make room for construction of the new abrasives room. Work will begin when the area has been cleared.
2. After the room is completed, all materials stored in the garage area will need to be labeled with section-specific labels to keep clutter at a minimum.
3. Karen Burns moved that we appoint Rodney Linehan as assistant treasurer to assist Lowell when he is out of town and possibly to replace Lowell if he has to relocate with his job. Phyllis George seconded the motion, it passed.
4. Scott Singleton moved that we accept D.R. Dillon, Beverly Mace, Lowell Stouder, and Rodney Linehan as the four persons eligible to sign HGMS checks. Karen Burns seconded the motion, it passed.
5. A stovetop was donated to replace the old stovetop.
6. The commode in the women's restroom has been repaired.
7. A discussion was held concerning scholarships. The Board decided that the scholarship should be for a Junior or Senior student attending an institution in the Houston area and majoring in Geology or Fine Arts-Jewelry. The Board is considering both San Jacinto College and the University of Houston. Before a final decision is made, Matt Dillon will check to see if San Jacinto is a two-year or four-year institution.
8. A discussion was held concerning Terry Proctor's recommendation to amend the Bylaws regarding the reporting of grievances for consideration and media-

tion. The item was tabled.

9. Karen Burns suggested that a New Members guide be compiled. The guide would provide new members with HGMS shop rules and guidelines on operation of the club.
10. Karen Burns suggested that a membership attrition study be conducted. Beverly Mace said she will make her records available for anyone who wishes to undertake such a study.
11. Karen Burns suggested that the HGMS Treasurer and all check signers and each Section treasurer be bonded. Matt Dillon said that Section treasurers are the responsibility of each Section. Matt Dillon will check into how to bond the HGMS Treasurer and check signers.
12. Karen Burns suggested that the club should have an annual audit. Karen will check with several club members to see if they would be willing to undertake the audit.
13. Art Smith reported that member Holly Smith has lymphoma and will be undergoing a splenectomy on Wednesday, May 2. Lowell Stouder proposed that HGMS send her a plant. Denise Bicknell will check with Holly's husband Tim to see when she will be home so we can send the plant to her home rather than the hospital. A card will be sent to the hospital.

The meeting was adjourned at 9:39 p.m.

AFMS Scholarship Honorees for 2007

by Dee Holland, AFMS Scholarship Foundation President
an excerpt from The AFMS Newsletter 5/2007

Since its founding, your AFMS Scholarship Foundation has distributed over 1 million dollars in scholarship funds to deserving graduate students in the earth sciences. Each participating regional federation names an "honorary" recipient--often a college professor or someone well known in the earth sciences field. Each Honoree receives a plaque at the Regional convention and chooses a university with a graduate Earth Science Program, and then selects two graduate students for two years. Each graduate student recipient will receive $2000 per year for a total of $4000 per student. **South Central Federation has chosen HGMS's own ALEXIA HUESKE BIENIEK**, B.A. Texas A & M University – Kingsville, Kingsville, Texas 1970. M.S. Science Education, University of Houston, Houston, Texas, 1990.

Mrs. Bieniek created "School Daze" for the Houston Gem and Mineral Society for their annual show. Through her guidance, this program has grown steadily to the point where the HGMS Show Committee has over 2700 students attending, and they now must place strict limits on the number of kids per time slot.

Mrs. Bieniek travels to Austin, Texas whenever necessary to speak at the State Board of Education proceedings on the unwise proposals to eliminate earth science from the high school curriculum in Texas.

She was the President of the Texas Earth Science Teachers Association in 1996-97. She has presented many lectures on Rocks, Minerals, and Fossils of Texas for professional and amateur organizations.

ShowTime 2007

May 26-27	Fort Worth, TX	Fort Worth Gem & Mineral Club Amon Carter Exhibits Bldg.; Will Rogers Memorial Center; 3401 W. Lancaster Steve Hilliard (817) 925-5760 Kay Anderson (817) 597-8912 wkanderson@sbcglobal.net
June 2-3	Stafford, TX	Houston Bead Market The Stafford Centre, 10505 Cash Rd. Rebekah Wills, 903-734-3335 www.thebeadmarket.net
June 2-3	Birmingham, AL	Alabama Mineral & Lapidary Society Tannehill Historical State Park Rick Kittinger, rick.kittinger@bellsouth.com www.lapidaryclub.com
June 5-10	Roswell, NM	Chaparral Rockhounds -- AFMS & RMF Roswell Convention and Civic Center 912 North Main Street
September 1-2	Arlington,TX	Arlington Gem & Mineral Club -- SCFMS Arlington Convention Center 1200 Ballpark Way; Karen Cessna, (817) 860-5232, Rick Kupke (817) 465-5270 erickkupke@nwiis.com; http://tses.org.
September 21-23	Humble, TX	Houston Gem & Mineral Society Humble Civic Center, 8233 Will Clayton Pkwy. 5 miles east of Bush Intercontinental Airport 1 mile east of Hwy. 59 sigrid.stewart@chevrontexaco.com
October 11-13	Mt. Ida, AR	World Champ. Quartz Crystals Digging Contest; Montgomery County Fairgrounds, Fair grounds Rd.; Thu. 9-3, Fri. 9-3, Sat. 9-3; adults $90, preregistration $75; dig in working crystal mines, keep all you dig, maybe even win a prize. Maureen Walther, Mount Ida Area Chamber of Commerce, Mount Ida, AR 71957 (870)867-2723; director@mtidachamber.com www.mtidachamber.com.
November 17-18	Mesquite, TX	Dallas Gem & Mineral Society Resistol Arena Exhibition Hall I-635 & Military Pkwy (Exit 4) www.dallasgemandmineral.org/index.html

2007		June				2007
Sun	**Mon**	**Tues**	**Wed**	**Thur**	**Fri**	**Sat**
					1	2 10-12 Youth Section 10-5 Shop Open
3	4	5 7:30 Board Meeting	6 7:30 Mineral Section	7	8	9 10-5 Shop Open
10	11 1:00 Day Light Section	12 7:30 Show Committee	13 7:30 Faceting Section	14	15	16 10-12 Youth Section 10-5 Shop Open
17	18 5-7:15 Shop Open 7:30 Lapidary Section	19 7:30 Paleo Section	20	21	22	23 10-5 Shop Open
24	25	26 5-7:15 Shop Open 7:30 Gen'l. Mtg..	27 7:00 Beading Group	28	29	30 10-5 Shop Open

2007		July				2007
Sun	**Mon**	**Tues**	**Wed**	**Thur**	**Fri**	**Sat**
1	2	3 7:30 Board Meeting	4 Independence Day	5	6	7 10-12 Youth Section 10-5 Shop Open
8	9 1:00 Day Light Section	10 7:30 Show Committee	11 7:30 Faceting Section	12	13	14 10-5 Shop Open
15	16 5-7:15 Shop Open 7:30 Lapidary Section	17 7:30 Paleo Section	18	19	20	21 10-12 Youth Section 10-5 Shop Open
22	23	24 5-7:15 Shop Open 7:30 Gen'l. Mtg.	25 7:00 Beading Group	26	27	28 10-5 Shop Open
29	30	31.				

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