



**Clear Lake Gem & Mineral Society Meeting Minutes,**  
**November 21, 2011**

President Bob Brock called the meeting to order and opened it with the Pledge of Allegiance. Treasurer Loyce Pennington made the Treasurer's Report. Lester Gary corrected the October Meeting Minutes by stating the club library is at his residence, not in the club's storage facility.

The 2012 workshops were discussed. The one scheduled for January 7, 2012, will be canceled. It was suggested to replace it with a Saturday or Sunday in March. Having another cabochon class, wire wrap, beading, or silversmith class was discussed. A suggestion was made to have a mineral ID workshop.

**Program**

The program was presented by Cin Ty Lee from Rice University on long term climate changes, continent formation and WW II. Fifty km below the surface of the earth are garnets and pyroxenites which come up through volcanoes. Volcanoes can be used to look down into the earth to learn how continents were built during the cretaceous period. Two hundred million years ago, the giant continent began to divide. Ocean continent volcanoes erupted from Siberia to North and South America. There were no ice caps. The opening and closing of ocean basins formed continents. Temperatures were high during the cretaceous due to enhanced CO<sub>2</sub> and a greenhouse climate. Rice and Mr. Lee's team feel CO<sub>2</sub> was minuscule to the number of volcanoes that erupted through limestone which could cause extensive release of CO<sub>2</sub>, tons of CO<sub>2</sub>. A volcano in Italy puts out 20% CO<sub>2</sub> of all other volcanoes. During the cretaceous period, there were 50-100 volcanoes releasing CO<sub>2</sub>. Tungsten was discovered in 1781 by a German. It means heavy rock and it has a high melting point and density. On the Moh's scale of hardness, it is 7.5, harder than quartz. It is used for filaments in light bulbs and it is also used to harden steel. Tungsten ore was thrown away when mining tin to create bronze during the Bronze Age. One of the largest mines is in Cornwall, England and it dates back to 2000 BC. During WW II, the Germans alloyed tungsten with iron to make tools and weapons. Germany had no tungsten. They got it from England before the war and then used it against them during WW II. Tungsten was used in the tips of warheads that could penetrate tanks. Germany turned to Portugal and China to acquire tungsten. Americans cut off the China/Pacific supply. Germany traded gold for tungsten. Portugal still has the largest gold reserve in all of Europe.

The membership took a five minute break prior to the business meeting. The Christmas Dinner will be held next month beginning at 6:30 p.m.

**Committee Reports**

Historian – Nothing to report.

Librarian – Chairperson Lester Gary to bring some of the books to the next meeting.

Community Service – Chairperson Nancy Duggar had an example of the rock kit which is being donated to local schools.

Show – One dealer dropped out. Jim Wines has been in contact with other possible dealers. We need to get the pads announcing our show to the dealers for the Tucson Show.

Nominating Committee – Loyce Pennington, Annabel Brownfield and Ben Duggar were appointed.

There was no further business and the meeting was adjourned.

Respectfully submitted,  
Anna Brownfield, Secretary

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**SPECIFIC GRAVITY**

Specific gravity of a solid substance is its weight in air compared with the weight of an equal volume of water. Specific gravity of a mineral is constant and does not change providing its composition

does not change. There are six different types of balance used to determine specific gravity: 1) Jolly balance, 2) Kraus improved Jolly balance, 3) Berman density scale, 4) Westphal scale, 5) Chemical balance, 6) Pycnometer, also known as a specific gravity flash.

Relative density is harder to explain, so I will use an example. Say you have two doors, one wood and one of iron. Properties are all relative to the mass. This means that the iron door has a greater mass for the same bulk than the wooden door, making the density of the iron door harder to move.

Taste belongs only to those few minerals which dissolve somewhat in water. The terms are easily understood, and there are seven of those terms: 1) Saline - salty, 2) Alkaline - soda or potash, 3) Bitter - Epsom salts, 4) Acid - sour like acids, 5) Astringent - alum, 6) Pungent - ammonium chloride, 7) Cooling - potassium or sodium nitrate.

Odor also belongs to a few minerals, when they are breathed upon, rubbed, scratched, pounded, or heated. There are seven types of descriptive odors: 1) Argillaceous - clay-like - Kaolin, 2) Bituminous - like bitumen or organic matter - Asphalt, 3) Fetid - odor of rotten eggs - Bituminous limestone, 4) Astringent - like alum, 5) Pungent - ammonium chloride, 6) Cooling - like potassium or sodium nitrate, 7) Garlic odor given off by some arsenic minerals when heated - Arsenopyrite. Josie Middleton From The Stone Chipper 04/96

### **ARTIFICIAL WEATHERING** By Chuck Saffris, Central Iowa Mineral Society

It is always a thrill to find a cracked concretion that separates cleanly in the field with the light tap of a rock hammer to reveal a beautiful fossil. More often, however a promising looking concretion is not already cracked and resists being broken. When it finally breaks under blows of a rock hammer, there is some shattering or uneven breaking which can damage the enclosed fossil, and even then, there is a chance that the enclosed fossil is not exposed. With a little patience, there is another way to expose the fossil. Artificial weathering is a simple alternative that may lead to collection of fine undamaged fossils, if the matrix material is suitable.

Freezing and thawing causes accelerated mechanical weathering of a rock. If water can seep into pores or micro cracks in the rock, the rock will become saturated. When the water expands during the freezing cycle, pressure is exerted on the rock, leading to cracking or exfoliation. If the fossil is a carbon film, then the fossil is a natural weak spot in the concretion, and with luck, the subtle pressure of freezing will open the concretion so that the fossil is perfectly exposed and undamaged.

The process is very simple for any rock that will take up water. A container (other than glass, which might break during the freezing process) suitable for the specimen's size is selected, and the concretion is covered with water and allowed to soak for several days. Then a series of freezing and thawing cycles are achieved by using the freezer in the summer or the back porch in the winter. By achieving a freeze thaw cycle every day, the process is accelerated. It is important that loosened residue from each cycle be removed and examined because if there are any fossils revealed, the next freeze cycle could destroy them.

If you live in a northern climate, and there is no hurry, the suitable rocks could be placed in a container of water and simply left outdoors all winter where the daily temperature swings would do all the work. It has been reported that thousands of Mazon Creek, Illinois fossils have been exposed using accelerated artificial weathering this way.

In Iowa, fossil collectors are on the lookout for blade shaped nodules of limey shale in Pennsylvanian exposures and streambeds. With any luck and some artificial weathering, a well preserved, beautiful fern frond is likely to join your fossil collection.

Source: "Freezing and Thawing of Fossils;" J. Pojeta and Balanc, U.S. Geological Survey, Reston, Virginia, undated.  
via *Roanoke Valley Mineral & Gem Society Newsletter*, 02/99, via *THE STONE CHIPPER*, 02/99.

**A December HAPPY BIRTHDAY**

Ron Kosler	4
Cheryl Tindell	17
Trina Willoughby	22

**Turquoise, also**

**Zircon (prosperity).**  
Hindu mystics believed that one could achieve great wealth by holding a turquoise and gazing at a new moon.

**December Anniversary includes:**

Dan Harry	11
Ed and Cheryl Tindell	18
Bill & Bettie Robinett	30



Now is not too early about thinking about paying you 2012 dues.

**GOODIE GETTERS...For December**

Main Goodies provided by club.

**Lapidary Corner** (Special request from a new member)**HINTS and TIPS**

1 - Mother of Pearl for inlay work can be softened by soaking in white vinegar. It can then easily be cut.

2 - A safe way to clean marble is to put a slice of lemon in a cloth, dip in warm water, then in borax and rub. Wipe with a clean cloth.

3 - When tumbling rocks to polish, you can add desert sand to the first grit in the tumbler. Place plain white rice in with the stones for the last polishing. This will do a wonderful job and the rice will keep the stones from chipping

*via Southwest Gem, 12/96, via Gem Time 20/96*

**Gemstone Dyeing** - Mix a box of Rit with a couple of ounces of wood alcohol. Let your stones, polished or tumbled, soak in this solution in a small jar until the desired shade has been reached. This could take 30 minutes or overnight. If too much dye is absorbed, soak in clear wood alcohol.

After dyeing, wash in clear water, apply a good wax and polish with a soft cloth. Crazy lace, banded Brazilian agate, etc., can easily be dyed a more pleasing color. Slicing after being dyed can result in some fantastic results.

*via Crystal Cluster, Nov. 97*

**How Geologic Time Periods Got Those Crazy Names**

The three geologic eras are the **Paleozoic**, **Mesozoic**, and **Cenozoic** - from the Greek for Ancient, Middle and Recent Life. They are divided into 11 periods, most of them named for the places where rocks from that period were first discovered.

The **Cambrian** Period (50 - 500 million years ago) is named for Cambria or Wales. The next two periods also received Welsh names: **Ordovician** and **Silurian** for two Welsh tribes, the Ordovicians and Silurians.

The **Devonian** is named for Devonshire, England and the **Cretaceous** comes from "creta" Latin for Chalk, referring to the White Cliffs of Dover, England. The **Jurassic** is named for the Jura Mountains in Germany, and the **Permian** for the Perm in Russia's Ural Mountains.

The **Triassic** got its name because it was easily divisible into three parts and the **Carboniferous** is named for carbon, because most coal deposits date from that. In North America, the Carboniferous is subdivided into the **Mississippian**, named for the Mississippi River and the **Pennsylvanian**, named for the coal deposits first discovered in Pennsylvania.

The most recent periods are the **Tertiary** and the **Quaternary**, named for types of rock dated to those eras. They are divided into epochs, whose names all end in "cene" a Greek root meaning recent. **Pleistocene** is from the Greek for most recent. Preceding it are the **Pliocene**, **Miocene**, **Oligocene**, **Eocene** and **Paleocene**, meaning most recent, less recent, little recent, early recent and oldest recent. Got it all now?

Author unknown

**From The RockCollector 12/09**



## Field Trips (2011) by Ed Tindell

Hi All –

Any takers? I plan to open this trip up to other clubs next week so you need to sign up NOW. Only 23 slots left!

I have set up a field trip to the TXI quarry for Saturday, March 24, 2012, 10 AM-12 Noon. We may get to stay longer.

Rain Date: Saturday, March 31, 2012

I am playing phone tag with the other quarries trying to add one for the afternoon, etc.

I may add additional trips just to go to the other quarries. I'll keep you posted.

MSHA rules apply: hard hat, safety glasses, closed toed shoes, long pants. It will probably be cold which is better than being hot!

What to bring: hammer, bucket, packing material for delicate specimens, drink

What to look for: fossils, pyrite, calcite, etc.

The trip is limited to 25 people but if we go over a few I don't think they will notice.

Plan to double up in cars as they do count cars!

Meeting Place: Whataburger in town located at 1320 E Highway 287, Midlothian, TX 76065, 972-775-2323. See attached map.

Meeting Time: 9AM

If you want to go let me know as soon as possible.

I will offer all unused spots to members of the Texas Rockers.



Thanks,  
Ed Tindell 2011 CLGMS Field Trip Coordinator  
a.k.a. "The Official Cat Herder"

## Pots of Gold in Ireland

Leprechauns or Nomadic Tribesmen?

Of all the ancient civilizations, none is more mysterious than Ireland. Finds of gold work attributed to Irish artisans date back to the late 3rd millennium BC, yet virtually nothing is known of the people who produced this

jewelry of dazzling beauty. Perhaps they were nomadic tribes of the Neolithic period who reached Ireland via England from Central Europe. Whether or not the Irish had their own source of gold is unknown. It is quite possible there were surface deposits that have long since been exhausted. Almost all the Irish jewelry so far uncovered is housed at the National Museum in Dublin. The most breathtaking aspect of Irish gold work is its size. Some of the pieces are huge. The designs of complex geometric and zoomorphic patterns are never fussy and the workmanship is astonishing. From - A History of Jewels by J. Anderson Black, via The Rockcollector -1/00

*EXPERIENCE is what causes a rockhound, who has made the same mistake twice, to bust up the third mistake and put it into the tumbler.*

### Picking Good Jasper - author unknown

Jasper is much more troublesome to polish than agate because many varieties are "earthy" and porous, and others contain hematite, which is itself difficult to polish. If you are on a field trip, a good way to test jasper is to wet it. (Do not lick it.) If it absorbs the water and dries rapidly, throw it away. It will not polish. If it stays wet and does not dry right away, keep it. It contains a high amount of chalcedony and will take a good polish. Most Jaspers polish well on leather with Linde-A, but good results can be obtained with tin oxide on either leather or felt. Always remember that a fine sanding job is the secret of good polishing.



When tumbling softer, hard to polish material, don't start with the coarse grit. Start with the second grit and go one grit finer than the #3 grit used on agates. In polishing, fill the tumbler  $\frac{3}{4}$  to  $\frac{7}{8}$  full (if not using pellets) so the stones will roll and not fall. This way you do not have the stones beating the polish off the ends. Also, cerium oxide will polish better than regular tumbler polishing agents. It does not take very much cerium to do this job, about  $\frac{1}{2}$  as much as the regular tumble polish. The RockCollector 12/09

## ZIRCON – The December Birthstone

### Compiled 2003 from many articles by Al Pennington, CLGMS

Zircon comes from the word zargoon, meaning vermilion in Arabic or zargun meaning golden-colored in Persian. Zircon is Zirconium silicate  $ZrSiO_4$ , often with some hafnium and occasionally with some uranium, thorium, and yttrium. It can contain up to 20 percent of hafnium in its structure; if it exceeds that, it is scientifically a different mineral. Zircon is found in most igneous rocks and some metamorphic rocks as small crystals or grains, mostly widely distributed and rarely more than 1% of the total mass of the rock. It is also found as alluvial grains in some sedimentary rocks due to its high hardness. Zircon has a high index of refraction and, where crystals are large enough, is often used as a gemstone.

Hindu poets tell of the Kalpa Tree, the ultimate gift to the gods, which was a glowing tree covered with gemstone fruit with leaves of zircon. Zircon has long had a supporting role to more well-known gemstones, often stepping in as an understudy when they were unavailable. In the middle ages, zircon was said to aid sleep, bring prosperity, and promote honor and wisdom in its owner.

Natural zircon today suffers for the similarity of its name to cubic zirconium, the laboratory-grown diamond imitation. Some don't realize that there is a beautiful natural gemstone called zircon.

Zircon occurs in a wide range of colors but for many years, the most popular was the colorless variety which looks more like diamond than any other natural stone due to its brilliance and dispersion. Today the most popular color is blue zircon. Most blue zircon, which is considered an alternate birthstone for December, is a pastel blue, but some exceptional gems have a bright blue color. Zircon is also available in green, dark red, yellow, brown, and orange.

The wide variety of colors of zircon, its rarity, and its relatively low cost make it a popular collector's stone. Collectors enjoy the search for all possible colors and variations. Almost all Zircon gems are artificially colored by heat-treatment. Many of its gem colors are rarely found naturally in such color. An interesting and strange habit exhibited in only few zircons is that their color darkens and their luster dulls upon prolonged exposure to sunlight. This effect can be reversed by giving the stones a second heat-treatment.

Zircon is one of the heaviest gemstones, which means that it will look smaller than other varieties of the same weight. Zircon jewelry should be stored carefully because although zircon is relatively hard, it can abrade and facets can chip. Dealers often wrap zircons in individual twists of paper so that they will not knock against each other in a parcel. Zircon is somewhat soft so avoid scratches and sharp blows. Avoid hot water and household chemicals.

The typical simple crystal of zircon is a tetragonal prism terminated with four sided pyramids at each end. The prism may be lacking and the crystal can look octahedral. More complex crystals have faces of a less steeply inclined prism that taper the terminations. Also a secondary prism may truncate the primary prism by cutting off its edges and producing an octagonal cross-section through the crystal. There is even an eight sided pyramid (actually a ditetragonal dipyramid) that may modify the four sided pyramids.

### **PHYSICAL CHARACTERISTICS:**

- **Color** - Colorless, white, gray, black, brown, brownish-red, orange, pink, yellow, light blue, light green, light purple.
- **Luster** - Greasy to adamantine. Radioactive Zircon has a pitchy luster.
- **Transparency** - crystals are transparent to translucent.
- **Crystal System** - tetragonal; 4/m 2/m 2/m
- **Crystal Habits**: - dipyramidal and prismatic. Most often as short, stubby, prismatic crystals, which are almost always terminated. Crystals also occur in elongated, terminated prisms. Doubly terminated crystals are not uncommon. Radioactive zircon is characterized by rounded crystal faces. Zircon also occurs as grains, as fibrous aggregates, and as rounded, water worn pebbles. Twinned Zircon crystals are uncommon
- **Cleavage** - indistinct in two directions, prismatic. 3,2
- **Fracture** - Conchoidal to uneven
- **Hardness** - 7.5
- **Specific Gravity** is 4.6-4.8
- **Streak** - colorless
- **Tenacity** - Brittle

- **Other Characteristics:** is sometimes orange-yellow fluorescent and darker crystals may be radioactive due to impurities of rare earth elements.
- **Index of refraction** is 1.92 - 2.01
- **Varieties:**
  - **Cyrtolite** - unstable variety of Zircon with traces of radioactive elements in its chemical structure
  - **Hyacinth** or **Jacinth** - yellow, orange, brown, or red variety of Zircon
  - **Jargon** or **Jargoon** - colorless to pale gray or pale yellow variety of Zircon
  - **Starlite** - blue variety of Zircon
  - **Matarua** or **Matara** - colorless Zircon used to resemble Diamond
- **Zircon is mined** in Cambodia, Sri Lanka, Thailand, Myanmar, Australia, Seiland, Norway; Pakistan; Russia; Bancroft and Sudbury, Ontario, Canada and New Jersey and Colorado, USA.

References: Web sites - Amethyst Galleries, International Colored Gemstones, The Mineral and Gemstone Kingdom.

### The Beauty of Feldspars by O. Grathwohl

In spite of the fact that feldspars and feldspathoids could be termed the “Plain Janes” of the mineral realm when compared to their more glittering associates, there are still some varieties which take a worthy place in the sphere of jewelry and decorative stones. Among these are the beautiful potash feldspar varieties such as the champagne-colored orthoclase from Madagascar which is generally cut in facets; yellowish to clear moonstone that is cut in cabochon; green amazonite (microcline) and light brown sanidine that can be cut in either facets or as cabochons. Another very popular feldspar is the sky-blue hauynite of triple brilliant cut. Peristerite (albite) exhibits an intriguing iridescence on a light tan background and is cut into cabochons (laboradorite is similar feldspar).

All of these, however, are put in the shade by lapis lazuli which is an association of minerals, spangled with iron pyrites, created under contact metasomatic conditions and which, in the course of history, has often competed with gold in value. There is evidence that lapis lazuli was already being mined 6,000 years ago in the famous deposits of Badakshan (modern day Afghanistan) and found its way to the old world via the ancient caravan route. Marco Polo, the far ranging Venetian traveler, brought news of these famous mines to Europe as early as 1271.

In ancient Egypt, the lapis lazuli stone (known as “chesbet”) was often framed in gold, and sacred pictures were created from crushed lapis. The death mask of Tutenkhamon is inlaid with lapis.

The Greeks and Romans cherished lapis as an exquisite gem comparing its sparkling luster to that of the star-filled night sky. It is believed that ancient writers referred to sapphire as lapis lazuli not corundum sapphire. Both Theophrastus and Pliny the Elder described the blue color as “cerulum scythian sky blue” used by artists, which was made from lapis lazuli.

During the Middle Ages, lapis lazuli was used in Byzantine art and sacred art from central Europe. It was still considered nearly as valuable as gold. From the feudal age to modern times, lapis lazuli was used for wall paneling and column decorations in many palaces. In the 17<sup>th</sup> and 18<sup>th</sup> centuries; lapis was preferred for stone work, for the decoration of fireplaces and for inlay work in combination with precious metals.

In the Czarist Russia, lapis lazuli enjoyed special favor. The beautiful ornamented lapis vases and tables in the Hermitage and the pillars of St. Isaak’s Cathedral in St. Petersburg (formerly Leningrad) are two such examples.

The Badakshan deposits are still being mined today under very primitive working conditions and transportation. Other deposits are found at the southwest end of Lake Baikal in the former Soviet Union and north of Santiago, Chile (inferior quality).

Lapis lazuli is now used for settings in rings, pendants and necklaces. The lapis lazuli from Chile is used for carving figurines and objects of applied arts.

From Cab ‘N Crystal via MINERAL MITE via THE GLACIAL DRIFTER 03/95

<b>SCFMS and MEMBER CLUB GEM SHOWS</b>			

STONEY STATEMENTS  
 Clear Lake Gem and Mineral Society, Inc  
 PO BOX 891533  
 Houston, Texas 77289

(Postage)

Meeting 3rd Monday of the Month – 6:30 P.M.  
 December 19, 2011, Clear Lake Park Building  
 5001 NASA Road One, Seabrook, Texas



Member of:

**Next Annual Show**  
 February Feb 25-26, 2012  
 Pasadena Convention Center



CLGMS is on the Web:  
<http://www.clgms.org>

**Clear Lake Gem and Mineral Society, Inc**

MEMBER: American Federation of Mineralogical Societies and South Central Federation of Mineral Societies

PURPOSE: To promote education and popular interest in the various earth sciences; in particular in those hobbies dealing with the art of lapidaries and the earth sciences of minerals, fossils and their associated fields

2011 OFFICERS:	President	Bob Brock	281-338-2252
	Vice President	Ed Tindell	281-930-0698
	Secretary	Annabel Brownfield	
	Treasurer	Loyce Pennington	281 481-1591
	Program Director	Trina Willoughby	
	Board of Directors:	Trina Willoughby	Lester Gary
		Cheryl Tindell	David Tjiok
	Newsletter Editor	Al Pennington	281 481-1591

Annual Show 2012.....	Al Pennington	Library.....	Lester Gary
Const & bylaws.....	Dick Rathjen	Membership.....	Mike Flannigan
Community Benefits.....	Nancy Duggar	Publisher.....	Mike Flannigan
Historian.....	David Tjiok	Refreshments.....	David Tjiok

Membership Dues Jan. to Dec. 2011: Adult \$10:00, \$5.00 per additional adult at same address, Junior \$5.00, \$2.50 per member with adult at same address, Family Dues \$20.00 (4+) at same address. Send Dues to CLGMS, PO BOX 891533, Houston, TX, 77289

**Granvil A. "Al" Pennington, Editor 2011 – 11326 Sagetrail Houston, TX 77089-4418**  
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**Deadline for January Issue is December 28, 2011**