

THE ROCK RATTLER



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**THE ARK-LA-TEX
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**PO BOX 3366
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ROCKY

FLAKED OUT - An introduction to flint-knapping

By Bob Miller a.k.a. White Arrow Member of the Deming Gem & Mineral Society

Somewhere, lost in the sands of antiquity, the first flint tool lies buried and forgotten. My guess is that it sleeps somewhere east of Eden in Mesopotamia, likely fashioned by the hands of Adam. Of course, I don't really know and neither does any other living human. The bond between mankind and flint are very old and deep indeed. Likely, it is some vestige of this friendship that reappears today as the urge to rock-hound.

Flint-knapping (from the German ("Knappen" meaning "to nibble") is doubtless one of the most basic and ancient of industries. Without the very sharp and durable edges produced by fracturing flint even the working of wood becomes next to impossible. If you doubt this, go into the woods without knife, ax, or saw and try to fell a useable sapling. Catching a cooperative beaver is about your only option here. Along with fire, flint was survival for millennia, and many of those fires were kindled using a flint spark.

In everyone's genealogy there were flint-knappers. It may be many generations ago for some or only a few as in this writer's own Cherokee and Choctaw ancestors. Their skills were undoubtedly adequate or we would not be here today.

Until the recent development of fused diamond plating on a tungsten matrix blade, obsidian (as in "Apache Tears") produced the sharpest known edges, far superior even to the best surgical steel scalpels. Obsidian fractures at the molecular level producing edges that may be only a molecule or two thick. The Maya Indians of southern Mexico were in fact successfully performing brain surgery (trepanning) centuries before Columbus landed, using obsidian tools.

The knap-ability of flint owes to its krypto-crystalline structure (it's crystals are microscopic or non-existent). It is much like glass, being about 95% quartz (silicon). When struck a sharp blow with a hard object it will fracture into a "Hertzian cone" (conchoidally). Perhaps the easiest illustration of this phenomenon is to shoot a piece of thick glass with a B-B-gun. The characteristic product of this collision is a smoothly-rippled Hertzian cone. This is the basis of flint working by percussion.

Flint-knapping is the art of vectoring blows from a "billet" to remove flakes from the core in a manner predictable enough to eventually shape a blade. This process is called "core reduction." Once a blow is struck it cannot be recalled. For better or worse, the record of that blow is "written in stone."

Knapping is a lot like playing billiards. Due to inconsistency or defects (inclusions) in the flint it can more resemble playing pool on a wavy table with a tree limb and glass eggs. There are times I feel

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FACETING – FEBRUARY 2007**By Joe A. Beasley**

Well, we have talked about where faceting started and about passing along the “Art”. Some people do not consider faceting an Art. I was lectured a short time ago that, “Art means being creative (something new), freeform, initial.” Webster quotes “skill is acquired by experience or study”. One Webster’s dictionary definition I like is “an occupation required of skill and imagination in the production of things of beauty”. There are those who consider faceting only a craft. During the lecture, it was pointed out, in their opinion, that faceting was a craft because it was repetitive in nature. Webster says a craft is an art, skill and an occupation requiring special skills. Webster also says a Craftsman is a skilled artisan; others say art is creativity-oriented, while craft concerns constructing things as a prime objective. Craft is very much oriented toward marketing. I didn’t mean to get too far off the subject, but I thought it was very interesting as to what we call ourselves. At this stage, I prefer it as a “skilled artisan.” NOTE: This subject was mentioned in the Jewelry, Arts and Lapidary Journal magazine a few months ago.

We talked about getting the best machine you can afford. An interesting note, I was recently notified of three (3) very interesting items: Raytech-Shaw Faceting Machines Franchise had been sold to Scott Manufacturing of Littleton, CO. They should have parts for the old machines with a new machine available in 2007. Also interesting is that Graves Company in Pompano Beach, FL, has purchased all manufacturing right to the Gearloose XS faceting machines and will have parts available. In addition, Graves has developed a new Mark 5XL faceting head and machine with a digital readout. The really interesting thing about the Mark 5XL is that it is interchangeable with the Mark IV head. This is definitely a new item of interest as far as updating machines. We talked a little about Laps (more to come). We talked about selecting your first stone. Sometime later on, we will discuss the R.I. (Refraction Index) and as to how C.A. (Critical Angle) comes into play with cutting stones.

To go back to Laps for a bit. Try not to use rough cutting Laps no more than absolutely necessary. This goes the same for cutting cabochons. If you try to totally shape your stone with a very coarse Lap (90/100) or even a (320/360), you are going to have to grind off 45 to 50 microns of material just to remove the scratches that the 360 created. (Note: More on grit/microns size the next time.) If you are cutting a 15 mm or larger stone, sometimes, coarser Laps are required due to the time, and wear and tear on your machine. In cutting a stone 7 mm and smaller, I always use a 600 followed by 1200 Grit.

A NOTE ABOUT LAPS: I think there is less possibility of contamination if you do not charge a lap on both sides. It is almost impossible to keep one of them from becoming contaminated. Usually, it is the finer Grit Lap that becomes contaminated. One other thing is if you charge a Lap with a finer Grit on the inside and a coarser Lap on the outside, it is almost always asking for contamination. If Laps become contaminated, sometimes they can be resurfaced and recharged. Otherwise, it is best to throw them away. You can pretty well be assured that a 1200 is considered as a pre-polish. As far as polishing Laps, there are a number of them. All Laps should be sorted and separated; they will not become contaminated among themselves. Use a ziplock bag for each Lap well marked so that they don’t get switched.

It is time to select a Dop to install your stone so that you can begin faceting. Dops have, in most cases, a standard shaft size that will fit multi-machines, ¼” or 6.35 mm shaft. Some will have the shaft cut to a 45 degree angle, some are flat and others have a small hole drilled in the shaft. The difference in the Dops are to accommodate the different machines and to re-align the Dop

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KID STUFF

Tips on Tumbling - *By Jack L. Hill*

I once heard a fellow say, “You can’t turn a zircon into a diamond no matter how hard you try.” This is a perfect slogan for tumbling: a batch of poor quality stones will certainly guarantee you a collection of worthless stones in the end. Perhaps one of the greatest hindrances to quality finished stones is the use of poor material. A few rules regarding the material to use, if followed, will save you time, money, and disappointment.

First: Never put a conglomeration of stones of different hardness in the tumbler. One thing will become apparent almost immediately — the soft ones will grind away. If you don’t know the hardness, just use the scratch test. The harder stone will always scratch the softer one. If possible, I try to use only one kind of material at a time.

Second: Badly fractured or deeply pitted stones will usually still be pitted or fractured after days of tumbling. Cull out the ones which obviously will not make a decent finished product. Sometimes if I have a stone that looks like it might have potential, I will go to my rough grinding wheel and grind out the pits or fractures. I have saved a lot of good agates using this technique.

Third: Slabbed material makes excellent finished stones. You can break it up or cut to certain shapes on your saw. Sometimes I grind down to edges on pre-formed pieces I plan to tumble.

Fourth: Be safety conscious. Breaking hard material can be extremely dangerous. Always use heavy leather gloves and goggles. I have a small sliver of agate embedded in a bone in my thumb as proof of carelessness. Also be sure that no person is close by when crushing rocks. Some of the slivers can travel a long way.

Rollin’ Rock 10-04 via *Rockhound Rambling 5/01*

OLD-FASHIONED “ROCK CANDY”!! or Sugar Crystals on a String.

Here is an experiment that you can do that is quite easy. When you are finished, you can make it disappear by eating, have fun!

Materials you will need: Sugar, Quart Jar, Heat Source.

1. Get a VERY CLEAN jar (this is important, or you will end up with a jar of sugar sludge).
2. Bring a quart or so of water to a boil and dissolve as much sugar as you can. Pour this into the clean jar!
3. Tie a string, to a pencil and hang the string, into the jar with pencil resting on the rim. You might want to put a piece of wax paper or something over the top of the jar to slow down evaporation.
4. As the sugar solution cools, it becomes super-saturated. The excess sugar will crystallize out on the string.

from SCRIBE via Dust & Grit

2006-2007 Club Officers**President Edna House**
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www.larockclub.com**MEMBERSHIP INFORMATION**

Individual Membership	\$15.00 per year
Couple Membership	\$20.00 per year
Family Membership	\$25.00 per year

Dues are due on October 1 of each year

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and stone in case they were to accidentally be separated or, sometime, maybe, you are trying to cut (2) identical stones the same size (such as earrings). The size of the Dop should be 2/3 the size of finished stone.

Some of the most common Dop stick shapes used are flat, cone and "V" shaped. The flat Dop is used to hold rough for the initial cutting (Pavilion). The cone shape Dop is used to hold the Pavilion (the pointed part that is cut first). The "V" shape Dop is used to hold stones whose culet forms a line. Emerald Dops are those used to hold stones whose culet forms a particularly fine line. Then there is the Pit Dop, which is a pot-shaped Dop designed to hold Dops for all shapes of Pavilions. As mentioned earlier, the important thing to remember here is that the Dop should be approximately 2/3 the size of your expected finished stone.

That is about it for this trip. The next time, I will discuss Index Wheels. On down the road, we need to talk more about faceting cement, epoxy, cyanoacrylate (instant glue), shellac (black, amber and green), grit/micron sizes and polish.

REF: Guide to Faceting by James K. Dahlausen; Faceting I by Joe A. Beasley; Personal Trials and Errors by Joe A. Beasley

Cutting Obsidian

General tip: After obsidian has been sawed, be sure to bevel the edges all around on the fine grind wheel to keep them from flaking and chipping. Wear goggles (chips are almost invisible, but dangerous) and grind from the center out.

Gold Sheen: to get the most out of gold sheen obsidian correctly, the orientation of the color is most important. One type is banded and color lies on the bands; on the other type, the surface has to be chipped to find the color. Cut the banded material parallel to the bands to get the effect. To get a rainbow effect, cut the stone at an approximate 15° angle across the bands.

Iridescent: In cutting the two types of iridescent obsidian correctly, the orientation of the color is most important. One type is banded and color lies on the bands; on the other type, the surface has to be chipped to find the color. Cut the banded material parallel to the bands to get the effect. To get a rainbow effect, cut the stone at an approximate 15° angle across the bands.

Midnight Lace: Lace pattern obsidian should be cut across the surface pattern that you want to reproduce.

Rainbow Obsidian: Cut rainbow obsidian parallel to the flow layers. These (layers) can be seen by examining fractured surfaces using an overhead single light bulb. As these are not always straight, it may be necessary to turn the stone slightly in the saw. Examine each slab with either water or saw oil to see if the correct angle has been obtained.

Though obsidian is soft, it is still very important to sand away all scratches before going to polish. Some advise that wet sanding be done, since obsidian is heat sensitive and very brittle. For final polish, felt with cerium oxide is the choice. Should you be faceting some particularity gemmy obsidian, try cerium oxide on Lucite, but keep it wet.

From Grit and Sand, via THE ROLLIN' ROCK APRIL 2003

Selecting Materials For Cabochons

by John Sinkankas

A beginner is often confused by the great variety of cabochon material offered for sale. Selection should be based on quality. Carefully inspect the material of your choice. It must be solid, free of any cracks or holes, and be uniform in texture. Certain kinds of jasper contain soft spots because all the pores did not fill up with the silica-bearing solutions. Check slabs of this kind by wetting the surface and watching to see if water remains on top or is soaked up. The material with soft spots will not polish. Many slabs are displayed at dealers' tables in flat pans of water. Porous spots will soak up the water so it is best to allow the selected slab to dry thoroughly. To check it for uniformity in texture, hold it up to a strong light at an angle. When the beginner chooses a material for his/her first attempt at gem cutting, agate, such as Montana, Mexican or Brazilian is a good choice. These agates are hard and tough enough to allow for mistakes that will be made and corrected. It is wise to make the first cabochon about one-half inch in size and gradually work on larger cabs as one gains experience.

from The Pegmatite, 2/03; via Rollin' Rock

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Rockhound Safety

There once was a rockhound named Schwartz
 Who pounded, bare-eyed, on some quartz.
 Now he sees in a fog
 And he's led by a dog.
 He can't watch the news, or the sports.

(Moral: Remember to wear goggles or safety glasses when cutting or pounding rocks.)

You Never Know

You never know when someone
 May catch a dream from you.
 You never know when a little work
 Or something you may do
 May open up the windows
 Of a mind that seeks the light.
 The way you live may not matter at all,
 But, you never know — it might.

And just in case it would be
 That another's life, through you,
 Might possibly change for the better
 With a broader and brighter view,
 It seems it might be worth a
 Try at pointing the way to the right.
 Of course, it may not matter
 At all, but then again — it might.

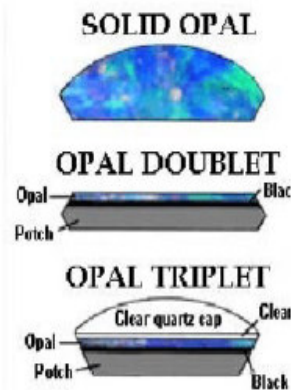
From The Glacial Drifter 4/99 via SCRIBE

Do you know the difference between a fossil limb section and a limb cast? Some call a specimen by either name, not realizing there is a difference. A **limb cast** occurs when a buried limb has decayed and the resulting void was filled with agate or some other material. The cast is in the form of the original limb, but no cell or ring patterns have been preserved. A **fossil limb section** is a portion of petrified wood. As the wood decayed, it was gradually and completely replaced by mineral deposits-cell by cell. Thus, a part of the wood structure – cells and rings – have been preserved.

Rocky Trails 9/96, via Rollin' Rock 10-04

Doublets and Triplets

Opal doublets and opal triplets are manufactured by fusing a dark backing to a thin slice of natural opal; in the case of triplets, a clear dome is also added. An opal doublet is a slice of gem opal fused onto a piece of dark backing material (usually dark potch). The dark backing enhances the brilliance of the opal, giving it an appearance similar to black opal. An opal doublet can allow you to own a beautiful opal gemstone for far less than the cost of an equivalent solid black opal. An opal triplet has three layers. Gem opal (usually a very thin slice) is sandwiched between a piece of dark backing material and a cap of transparent quartz. The transparent cap protects the opal layer and adds depth to the triplet. A solid opal is more valuable than a doublet of similar color, pattern, brilliance and size; and an opal doublet is more valuable than an opal triplet of similar appearance.



Shop Hint

Spotting Cracks & Vugs

To spot cracks and vugs before sawing, first soak it in a tub of water for at least an hour. Remove the rock and place it in a sunny spot. The surface will dry quickly, but the fractures and vugs will not. Use a soft pencil to mark the rock for guidance in sawing.

From Rockatier via Rollin Rock Jan 03

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that I am actually matching wits with a piece of flint, as in three-dimensional chess! Many Indians believed that everything, even inanimate objects like rocks had a spirit and were somehow “alive.” Perhaps they were right.

There is, of course, a lot more to knapping, like pressure flaking, heat-treating flint to improve its “lithic” qualities, “hands on” experiencing of just how sharp flint really is, weeping over the halves of an exceptional, almost complete blade, and of course losing one’s mind.

One thing is certain, if you pursue knapping with any degree of persistence, you will recognize that its ancient practitioners were not a bunch of dumb savages banging rocks together. Instead, that is what we modern hobbyists are! They did it to survive — we do it . . . For fun????! ! !

from Rock Chips, 3/04 via Rollin' Rock

ANNOUNCEMENTS

UPCOMING SHOWS

FEBRUARY

3-4 Panama City, Fl.

24-25 Jackson, Miss.

24-25 Pasadena, Tx.

MARCH

8-11 Deming, New Mexico (guided field trips)

23-25 Ada, ok

APRIL

7-8 Abilene, Tx.

26-27 Fort Worth, Tx.

Sign on to the internet at www.rockngem.com/showdates.asp for a complete listing of shows, contacts, addresses, etc.

FEBRUARY MEETING

The program at the February meeting will be a presentation by Dwight House, our webmaster, showing all of us the new, updated, website. If you have not looked at our site recently, you will be delighted with the changes that have been made. Come and see for yourself!!!

Know your cousins

The child of your parent's brother or sister is your first cousin. However, your first cousin's child is not your second cousin, but your first cousin, once removed,

The child of your first cousin once removed is your first cousin twice removed, and his child is your first cousin three times removed.

Your second cousin is your grandparents' brother or sister's grandchild. That second cousin's child is your second cousin once removed, his child is your second cousin twice removed, and so on.

And your third cousin? It's your great-grandparent's brother or sister's great-grandchild. The third cousin's child is your third cousin, once removed, and his child is your third cousin, twice removed. Ed.

ROCKS AND MINERALS OF LOUISIANA

Wilford House

Contrary to what most believe, Louisiana has a significant number of beautiful and interesting rocks and mineral specimen. There are both “native”, and “transported” materials to be found in the state. While the items listed are not all-inclusive, they do illustrate the fact of a wide assortment of rocks and minerals.

DIAMONDS - Diamonds are not native to Louisiana, however there have been a number found in the gravel beds located in the Minden area. At one time, there was a corporation formed for the purpose of mining diamonds of that area. The number found was never publically revealed.

PRECIOUS OPAL - In the Toro Creek area of central Louisiana, near the Texas/Louisiana line, there are deposits of precious opal. The matrix is sandstone, and finished stones have a different appearance from Australian opal. Many pieces are very beautiful, and have a lot of “fire”. Colors range from blue to green to red.

CHAMBERSITE - Extremely rare crystals of Chambersite have been found in the salt dome at Venice, Louisiana. These crystals are valued at between \$250 to \$300 per carat.

PEARLS - Pearls may be found in oysters dredged from the Gulf of Mexico. In addition, fresh water pearls have been found in clams in various streams. Mother of pearl from fresh water clams are still collected and used by amateur jewelry makers.

AGATE - In addition to agate found in alluvial gravel, some of which is most beautiful, there is at least one deposit of native agate. The deposit is in the Castor area, and colors of all hues are present.

PETRIFIED PALM - While the most attractive palm is located in the area around Flatwood, Louisiana, and westward to Toledo Bend lake, there have been finds of petrified palm in many other areas of the state.

PETRIFIED WOOD - Finds of petrified wood have been reported in almost every parish in the state. Either in strata, or gravel beds.

CHERT - Significant amounts of chert are found in stream and gravel beds throughout the state

CORNELIAN - Found in stream and gravel beds throughout the state.

QUARTZ CRYSTAL - In addition to being found as alluvial gravel in stream beds and gravel beds throughout the state, defined crystals can be found in cavities in petrified wood, iron ore nodules, and other rock formations.

JASPER - Found in stream and gravel beds throughout the state.

IRON ORE - There are iron ore out-croppings to be found in several locations in north west Louisiana.

IRON ORE GEODES/NODULES - Iron ore geodes and or nodules have been found in dirt pits, along road cuts, stream beds, and washes in northwest Louisiana. In addition, along with the iron ore geodes and nodules, concretions with an iron ore matrix have been found in similar locations.

SANDSTONE - Massive pieces of sandstone have been found adjacent to the current , as well as ancient, stream beds of the Red River.

LIMESTONE - Outcropping of limestone have been found in the northwest portion of the state.

MUDSTONE - Found along the southeast edge of Caddo Lake, in northwest Louisiana.

The Ark-La-Tex Gem and Mineral Society meets at 6:30pm on the 1st Tuesday of each month at the: Bossier Parish History Center 2006 Beckett St Bossier City, La. 71111

FROM:
ARK-LA-TEX GEM AND MINERAL
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BOSSIER CITY, LA. 71111

The Rock Rattler is a monthly publication of the Ark-La-Tex Gem and Mineral Society located in Bossier City/Shreveport, Louisiana. The society is affiliated with the American Federation of Mineralogical Societies (AFMS) and the South Central Federation of Mineralogical Societies (SCFMS). Permission is given to reproduce this document all or in part with proper credit given. Articles with no byline are by the editor.

The Ark-La-Tex Gem and Mineral Society is a nonprofit educational organization devoted to promoting interest in the various earth sciences, particularly the art of lapidaries and their related fields. Informational speeches presented at area schools and the presentation of awards and cash prizes at the Public School Earth Science Fair are two of the ways the society achieves its goals. Another contribution to the community is the annual show, held at the Bossier Civic Center, 620 Benton Road, in Bossier City. This "Jewelry Gem, & Mineral Show" functions as a fund raiser for our group and a venue for the demonstrations of gold and silver casting, jewelry making, bead stringing, faceting, cabochon making, and flint-knapping (the art of flaking stone tools such as arrowheads). The monthly meetings (including programs of interest to rockhounds), information from the Rock Rattler, and jewelry making classes through Bossier Parish Community College complete the educational objectives of the club.