


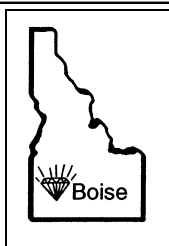
# Grindings

*Idaho Gem Club, Inc.*

P.O. Box 8443  Boise, Idaho 83707-2443

VOL 71 NO 10

October 2011



## BOARD OF DIRECTORS

**Brent Stewart**  
President  
863-9336

**Willa Renken**  
1st Vice President  
362-3941

**Jason Madsen**  
2nd Vice President  
378-4666

**Phil Neuhoﬀ**  
939-4508

**Ed Moser**  
340-8060

**Rick Corbett**  
383-9930

**Deana Ashton**  
794-5628

**Dan Phillips**  
585-3019

**Jim Clinton**  
283-8891



## RECORDING SECRETARY

**Ben Nunez**  
853-6710

**TREASURER**  
**Kathy Griffin**  
467-9286

**NFMS DIRECTOR**  
**Charles McCreath**  
344-5085

**EDITOR**  
**Tony Griffin**  
467-9286  
highdesert2003@q.com

**CLUB WEB SITE**  
www.idahogemclub.com

## President's Message

Well, our hot summer is just over and it's time to get back to a little more serious business—DUES ARE DUE! Seems that sometimes we tend to forget that October is the month for renewing our dues and they will slip by until spring. Paying dues keeps our members receiving "The Grindings" and after December the newsletter won't be sent until dues are paid. So get them in as soon as you can.

Auctions are scheduled for our November and December meetings. These Auctions are fun and help set the mood for the Holidays. The funds raised help support funding for our banquet in January. The December auction is typically completed items, so you can finish your Christmas shopping then...who needs the mall?

Please keep tumbling rocks, and preparing grab bags. Mark the dates for the next show which will be February 25th-26th 2012. Remember we need everyone's contribution to make it a success.

Phil Neuhoﬀ has done an outstanding job promoting the scholarship. As a result, we received three qualifying applicants this year. The deadline for the application was September 30, but if you or anyone you know of is interested, then you can submit an application for next year. One of the lucky three will receive a \$500 scholarship to go towards their Earth Science and Geology related degrees pending a short presentation related to their studies to the general membership at an upcoming meeting!

We still have plenty of cookbooks left and are available for sale. These books make wonderful Christmas gifts. If you are interested extra books are at Stewart's Gem Shop or contact me.

Rick Corbett is chairing the Board member nominating committee. Please contact Rick if you would like to be nominated or know someone who might be interested in serving as a Board member. We will be providing a brief biography for each of the nominees in November's newsletter. We can also accept nominations from the floor during the November meeting.

The Project of the Year contest is coming up in December. This is a terrific opportunity for you to share your talents and ambitions with the rest of the club, as well as receive some recognition. The project can be any media, as long as it is related to earth science or lapidary. Something new from last year is that the club will have two categories for the Project of the year, one for the adults, and one for the juniors. The projects will be voted on by the general membership and the winner will

receive a plaque that they get to keep for a year. The project will also be displayed at the annual show in a case the end of February.

**The NFMS newsletter is now on the web.**

> <http://amfed.org/nfms/newslet2.htm>

*Brent Stewart*  
*President*

**MINUTES OF THE IDAHO GEM CLUB  
GENERAL MEETING  
September 20, 2011**

Brent Stewart called meeting to order at 7:30 p.m.  
Pledge of Allegiance: who led not listed

Guests: Frank Harris, Ashley Harris, and Michael Hansen

Door Prizes: Melodee Worley, Jim Yandle, Aaron Wanner, Ron Mummey, Liana Rodden, Jason Madsen, Shannon Martin, Jim Clinton, Don Naews, Ray Harshman, Ed Moser  
Changes to the minutes motion made by Willa Renken; Jason Madsen did second the motion to make changes; changes not listed.

Secretary's report: This meeting we have a new issue of Rock and Gem magazine as well as a new Owyhee Gem & Mineral Society newsletter, and a new Emerald Gem Club newsletter.

Treasurer's report: Discussed balance & disbursements of the Idaho Gem Club's funds/ balance. And remember everyone that dues are due next month!

Federation report: The Federation field trip is in June due to the past problems with rain in the prior month. It takes place from June 13<sup>th</sup> to the 16<sup>th</sup> in Prineville.

Committee Reports:  
ROLE: nothing to report

Field trip: The field trip for September will be taking place at Carey. The first and second of October trip to Beacon Hill will yield nice specimens of agate, so come get yours! We will be meeting at the Flying J on Franklin out of Caldwell for the Beacon Hill trip.

Librarian: nothing to report

Juniors: received among other samples of garnets and snakeskin agate at the last "Rocky Rattlers" meeting. Next month "Rocky Rattlers" will be learning about calcite!

Workshop: There will be a workshop in September, and always remember if you see someone who is new or inexperienced to lapidary equipment never be afraid to provide constructive criticism because remember these are not just one persons machines they are all of ours!

New business: ATTENTION: as explained at our last general meeting, there was an article published in Rock & Gem about Graveyard Point. In this it describes the locations amazing agate deposits and recommends this site to anyone who wants to get their hands on these unique specimens. What they don't tell you is that when the last crew went there to excavate with a backhoe they left and enormous hole unfilled. Anyone who is planning a trip there in the coming weeks BEWARE!

*Respectfully submitted,  
Ben Nunez*

**MINUTES OF THE IDAHO GEM CLUB  
Board Meeting  
October 4, 2011**

Brent Stewart called the meeting to order at 7:30 p.m.

Board members present: Jason Madsen, Willa Renken, Phil Neuhooff, Ed Moser, Deana Ashton, Brent Stewart, Rick Corbett, Kathy Griffin, Charles McCreath, Dan Phillips.

Secretary's report: nothing to report

Treasurer's report: Discussed new and renewed dealers for the upcoming show next year. Also discussed the balance and disbursements of gem club funds.

Federation report: Charles McCreath: No Federation newsletter this month. There will be an upcoming Judges Training Class hosted by the Federation. This will be held at the Holiday Inn (location unspecified) It is around 75 dollars a night for a room, RV camping will be available as well.

Committee Reports:  
ROLE: no report

Field trip: The upcoming fieldtrip will be to Succor Creek!

Juniors: Ed Moser: juniors bring your folders to the next meeting. We would like to thank Brent for the minerals he brought back from the Denver show. And thank you to all who have donated material for the juniors! The juniors will also be receiving a neat little book called Dig into Rocks at the next meeting!

Annual Banquet: Discussed the venue for the upcoming banquet.

Workshop: Willa Renken: No workshop this month due to complications. There will be a workshop in November.

Membership applications: Brian Gimmel, Tanra Snodgrass, Edward Blondin, Dane Davies, Chris Mangrum, Jerry Adamson, Walt Woodall, Pat Hobbs. Motion to accept made by Willa Renken, 2<sup>nd</sup> by Rick Corbett; motion carried.

Old Business: Discussed Nominating committee for the upcoming club election. Rick Corbett will chair this committee.

New Business: no new business

Adjourned at 8:45 p.m.

*Respectfully submitted,  
Ben Nunez*

## Special Report

### Erionite - Health concerns grow over little-known mineral

Oregon  
Department of  
Geology and  
Minerals

Photo shows  
volcanic tuff  
containing  
erionite in  
Oregon.



By Myron Levin,  
*FairWarning.org*  
Mesothelioma, an

exceedingly rare and lethal form of cancer, was once thought to be caused only by inhaling asbestos fibers.

Then in the late 1970s, when astonishing rates of the disease were reported among villagers in central Turkey, studies determined that a different fibrous mineral was the culprit. Erionite was abundant in native soil and stone, and so easy to work with that villagers had used it to build homes in the most devastated communities, known locally as "cancer villages," mesothelioma rates were off the charts--responsible for 40 percent to 50 percent of all deaths. Animal studies showed erionite to be 100 to 800 times more carcinogenic than asbestos and, according to a scientific paper, "almost certainly the most toxic naturally occurring fibrous mineral known."

In the U.S., medical journals and news stories presented the Turkish epidemic as a gruesome, but distant, catastrophe. They largely omitted a key fact: Erionite deposits are present scores of sites in at least a dozen western U.S. states.

Interviews and documents from the 1980s show there was a flicker of interest in assessing the risks in the U.S., but researchers and officials lost interest and moved on to other things.

FairWarning.org

Erionite, a Hazardous Mineral  
Deposits Found in These Locations



0 300 km

Source: U.S. Geological Survey, Montana Department of Transportation and U.S. Forest Service

The result is that, after three decades, erionite remains a word most Americans—and many environmental officials-- have never heard. Amid an expansion of roads, pipelines, power lines, wind and solar farms and recreation sites in remote areas of the West, erionite is unregulated, and federal agencies have failed to alert land-use officials, developers and residents of affected areas so that they might take precautions on their own.

Uneasy about the long silence, some government officials and scientists are trying to fashion a federal response. Toward that end, a

meeting planned next week at the National Institutes of Health, will bring together representatives of the Environmental Protection Agency, the National Institute for Occupational Safety and Health, the Mine Safety and Health Administration, and the U.S. Geological Survey, to discuss potential risks from erionite and other hazardous minerals.

"We need to be cautious because there's clear evidence of disease" from mineral fibers, said Dr. Aubrey Miller, a senior medical advisor at the National Institute of Environmental Health Sciences who will chair the meeting.

(Erionite continued on page 11)

## Tim Fisher's Ore-Rock-On On DVD Version 5.2

Oregon, Washington, and Idaho Rock Dig Locations DVD for PC & MAC

A comprehensive guide for digging lapidary, mineral, and fossil materials

Includes ALL rockhounding sites in the NEW editions of Gem Trails of Washington & Oregon and Rockhounding Idaho

991 USGS Topo map & overview map images with digs clearly marked

A relief map of each state points you to maps or detailed info & photos

Waypoint files to upload to your GPS – Over 2,100 Waypoints!

36 detailed descriptions of dig sites that have GOOD material!

\$57.50; Send Money Order only to Tim Fisher, 18403 S. Clear Acres Drive, Oregon City OR 97045, for credit cards see <http://OreRockOn.com/CD.htm>



Save Stamps For Cancer Research  
Cut at least 1/4 inch margin around the stamps. You can turn them into Chuck McCreath at our next meeting. THANK YOU!

## Jewelry Tips

### REMOVING A STONE FROM BEZEL SETTING

If you've forgotten to use dental floss and got your stone caught in a bezel, there's one thing you can try before starting to pry. Find some sticky wax or beeswax. Roll it into a pencil-sized cylinder and stick the end onto the top of the stone. Mold it on well and yank.

If all else fails, you either have to very carefully pry open the bezel with a sharp knife blade or drill a small hole in back of the stone and push it out with the point of a scribe.

### MAKING YOUR OWN MOKUME

Ever think about making your own mokume? Here's a link to the detailed steps in the sequence as done by a professional. Look for mokume on <http://www.rchristopher.com/tech/>

### FOREDOM STAND

A quick and easy way to suspend a Foredom over your jewelry bench is to use some steel pipe components from your local hardware store. It attaches with a couple screws and costs a little over \$10

I use 1/2 inch galvanized pipe and fittings. To build a stand that attaches to the top of your bench, all you'll need is a flange and a thirty inch length of the pipe. If you prefer a stand that attaches to the side of your bench, you'll need a little longer pipe, three foot, a flange, and a 90 degree "street elle".

Finally, make a hook that goes into the top of the pipe to hang the motor from. You can use heavy coat hanger wire or better yet, a 1/8 steel rod from the hardware store.

=====

Acknowledgement to be included with each publication:

More BenchTips by Brad Smith are at

[groups.yahoo.com/group/BenchTips/](http://groups.yahoo.com/group/BenchTips/)

or

[facebook.com/BenchTips](https://www.facebook.com/BenchTips)

## Welcome New Members

**Jerry Adamson**  
1196 E Cougar Creek Dr.  
Meridian, Id 83646-7806

**Edward Blondin**  
10578 W. Poppy St.  
Boise, Id. 83704-5458

**David Davies**  
Andrew & Erick Davies  
1800 N. Cole E-301  
Boise, Id. 83704-1307

**Pat Hobbs**  
8686 W. Holbrook Ave.  
Boise, Id 83704-5698

**Chris & Jeani Mangrum**  
Connor & Elise Mangrum  
11528 W. Arlen Ct.  
Boise, Id 83713-1700

**Eve Gimmel**  
Tanra Snodgrass & Brian Gimmel  
6620 Morton  
Boise, Id 83704-4629

**Walt Woodall**  
4797 S. Chex Way  
Boise, Id 83709-7657

## THE GRINDINGS

is the monthly newsletter of the Idaho Gem Club, Inc., associated with the Northwest Federation of Mineralogical Societies. Permission to copy is freely granted when proper credit is given to both the publication and the author. Articles without bylines are written by the Editor or President.

**CHECK OUT THE CLUB  
WEBSITE!**

[www.idahogemclub.com](http://www.idahogemclub.com)





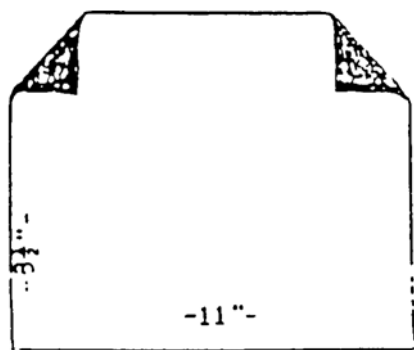
### Grab Bags

For our new people, our club sells grab bags filled with polished rocks at the show in February. We have always hand-made our bags, and we completely sell out each year. We need all the help we can get. If you sew, here are the instructions with some changes provided by Cathy Parsons. You can get 16 bags from one yard of 45" wide fabric. Any color, fancy or not. Use your imagination. We will fill the bags in January, so don't forget to keep those tumblers turning, too. You may bring them to the monthly club meetings.

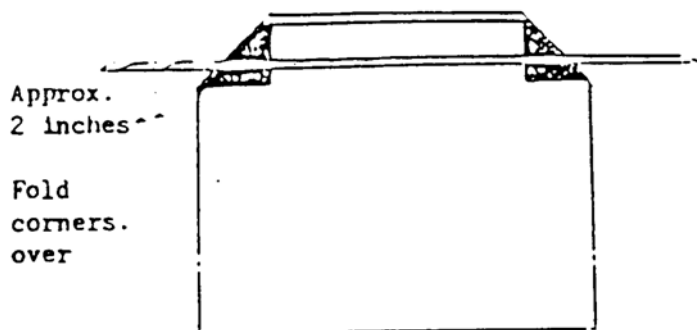
### Easy Grab Bags

The easiest method of cutting out grab bags is to cut fabric into 8 1/2" strips. Press down 1/2" on the top edge of each strip. Fold strip in half and cut on fold (you'll have two 22 1/2 inch pieces. Cut each of those halves into two pieces (fold & cut on fold). Following the pattern, fold up the outer edges of the top hem and make the dog ears, and then place your drawstring under the hem (but over

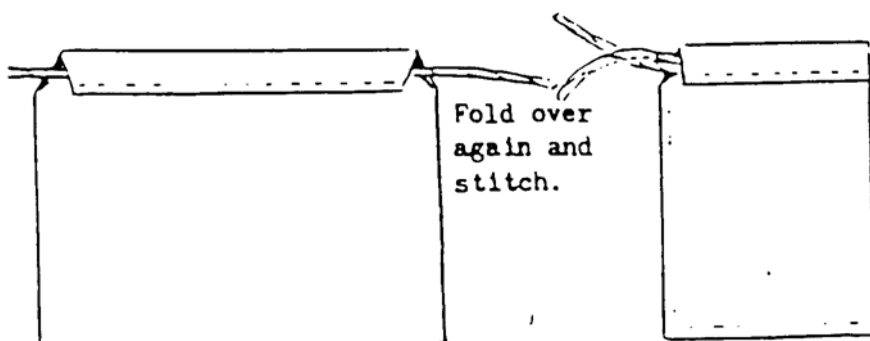
the "ears"). (I place a few pins in the edge of the hem to make sure it stays put before I sew. And, I sew each seam factory-style/chain stitching—not cutting between each bag, etc. So, if I cut out the 4 strips from the yard of fabric, I'm going to stitch down the top hem on all the bags before I go to the next step, etc.



Time is saved by folding the two corners over diagonally, then folding The top down over the cord. Try it.



Fold in half. Stitch in across bottom and up side.



Once the hems are stitched down (be careful not to catch the drawstring in the stitching), I sew the bags beginning at the opening (where you've placed the "dog ears".) I stop the needle at about the 1/4" mark from the bottom of the bag and sew to the end (backstitch to secure the thread). I then pull the finished bag out a bit and start the next bag. As you can probably see, I don't do any cutting of threads, etc. until I have all the bags I've got cut out complet-ed. I then go watch TV and cut threads and turn bags (if the cat doesn't get in the way). The strings are made of any heavy cord cut into approx-imately 24 inch lengths. I don't take the time to measure. I cut the first one and then use that as my guide to cut as many as I can at once. (Rug yarn is good—strong and colorful.) The dia-grams below will help—just remember to try to "factory sew". Before sewing, press the folds with a hot iron or crease with the fingers to make the sewing job easier. Also keep tumbling those stones to put in the grab bags. We need to fill about 1000 bags for the show next year.

## September Field Trip Recap Carey & Beacon Hill

### Carey

There were nine members, four kids, and no guests—We did find a lot of good rocks; no tube agate, just a bunch of lace. We didn't go on the ranchers place, we had fun looking around.

Aaron Wanner

### Beacon Hill

On Saturday, we had a nice group of around twenty-five on the hill, with people coming and going all afternoon. On Sunday, we had a small group of ten. Everyone had a good time and went home with some of the famous Beacon Hill Nodules.

Jim Clinton

## October Field Trip

**OCT 22 Succor Creek/ Red Egg Claim,  
Thunder Eggs/ Pet. Wood**

**8:00 am meet @ ION gas station 5644  
BUNTROCK RD MARSING, ID 83639  
West on Hwy 55 through Marsing to  
intersection @ Hwy 55 and Hwy 95.**

**8:30 am Travel to Succor Creek. All vehicles OK for travel until the last mile. This last mile we can carpool for those that don't have high clearance vehicles.**

***Dues are Now Due!***

*See page 6 for details*

HAPPY



BIRTHDAY

**Belated September**  
9/20 Ray Harshman

**October**

10/3 Phil Romans  
10/4 Gina Gartman  
10/6 Dick Reed  
10/8 Todd Jackson  
10/9 Jo Thompson  
10/9 Cindy Woolsey  
10/13 Bo Romans  
10/14 Rebekah Jackson  
10/15 Grant Dorough  
10/15 Bob Chen  
10/15 Steve Taormina  
10/22 Jim Dillion  
10/22 Betty Trebilcock  
10/22 Bryce Dethlefs  
10/26 Lois McDonald  
10/26 Christopher Griffin  
10/26 Janelle Wintersteen  
10/28 Sue Clark  
10/28 Allan Young  
10/29 Sandy Johnson

*October Birthstones*  
Faceted — Tourmaline  
Cabochon — Opal

**November**

11/1 Peggy Dean  
11/6 Tom Menten

11/6 Jaden Wanner  
11/7 Peggy Blickfeldt  
11/7 Christopher Brewer  
11/7 Larry McConnell  
11/8 Caryn Scanlon  
11/10 Valicity Koen  
11/10 Emily Cook  
11/11 Jim Kirschbaum  
11/11 John Munson  
11/12 Glenn Westendorf  
11/14 Robert Burns  
11/15 Joe Betz  
11/18 Phyllis Mitchell  
11/19 Steve Ostrander  
11/20 Anna Picano  
11/21 Gary Hanes  
11/22 Christa Wakefield  
11/22 Ricky Renkamp  
11/23 Marge Conley  
11/24 Gary Smith  
11/26 Phil Neuhooff  
11/26 Rick Denton  
11/28 Amanda Loewen  
11/28 Robert Hoffman  
11/28 Tom Shearer  
11/28 Mary Munson  
11/29 Jack Lavoie

*November Birthstones*  
Faceted - Topaz or Citrine  
Cabochon — Amber

**DUES ARE NOW DUE.****Rates are as follows:****\$12.00 per person****\$15.00 per couple****\$17.50 per family**

**Dues are due by October 31 each year . Please pay at the next meeting or send them to**

**Kathy Griffin, Treasurer****P.O. box 8443****Boise, ID 83707-2443****Dates To Remember****GENERAL MEETING****3rd. Tuesday of every month****October 18, 2011****BOARD MEETING:****1st. Tuesday of every month****November 1, 2011**

**Church of the Brethren**  
**2823 N. Cole Road, Boise, Idaho**  
**Meeting Starts at 7:30 pm.**

**October****Refreshment Committee****Chair: Carmen Becker 860-6012****Jean Dingley 867-9892****Bill Belknap 336-7110****Dave Davies 869-9317****REFRESHMENT COMMITTEE GUIDELINES**

Need approximately 15 dozen cookies.

Wrapped door prizes are also needed.

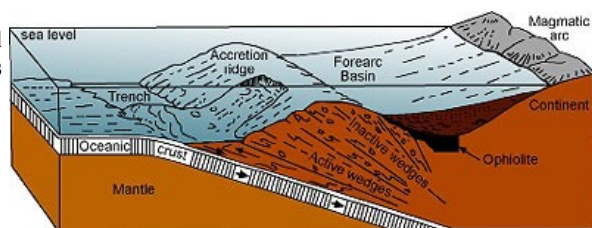
Arrive early enough to set up the chairs.

The chairperson brings the coffee urn, coffee, punch, cream, sugar, cups and napkins. Afterward, put meeting tables & chairs away, clean kitchen and sweep the room. Gather and take all the trash with you. Don't forget it is the responsibility of the chair for the coming month to pick up the coffeepot, take it home and bring it the next meeting.

**November****Refreshment Committee****Chair: Dana Robinson 343-0487****Linda Phillips 585-3019****Dan Phillips 585-3019****Bill Carey 435-282-0052****October Field Trip****Succor Creek/Red Egg Claim****See page 5 for more details!**

## Idaho's Accreted Terrane

accreted  
terrane cross  
section:



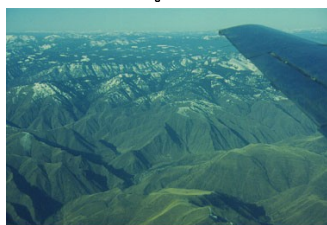
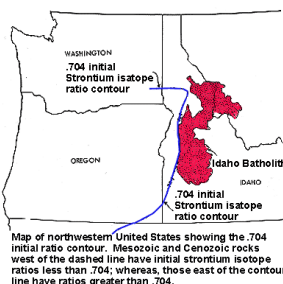
Most of the  
p r e -

Accreted terrane is pushed onto the continent

Cretaceous rocks west of the Idaho Batholith in west central Idaho and east-central Oregon are oceanic or island arc assemblages. These rocks were formed offshore in island arcs and adjacent basins (Vallier, 1967, 1977; Brooks, 1979) and were accreted to the North American continent between Late-Triassic and mid-Cretaceous time. This means that before Jurassic time, the West Coast of North America was situated near Riggins, Idaho.

## The Suture Line

Pre-Cenozoic rocks near the western boundary of Idaho fall into one of two settings. These two settings are separated by the strontium-isotope line. All the plutonic rocks west of the dashed line have low initial ratios ( $<0.7043$ ); whereas, all rocks to the east of the line have high initial ratios ( $>0.7055$ ). This change in ratios is made in less than a distance of 6 miles.



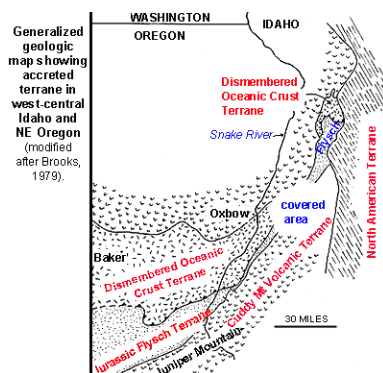
Aerial view of suture zone near Riggins

The strontium - isotope line therefore represents the suture line where the accreted island arc assemblages were welded to western North America.

Paleozoic sedimentary rocks overlying Precambrian rocks of the continent make up the miogeocline on the east side of the suture line. These sedimentary rocks have been intruded by the batholith. On the west side of the line is a complex assemblage of rock derived from oceanic crust and portions of an island arc. The ages of this accreted assemblage ranges from Devonian to Early Cretaceous. Granite plutons intruded the accreted terrane; and later, Late Cretaceous marine strata covered portions of the accreted terrane, which were depressed as a shallow basin.

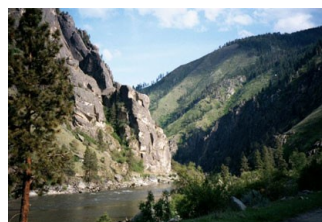
## Four Smaller Terranes

The oceanic and island arc terrane is divided into four smaller terranes: (1) the dismembered oceanic crust terrane or mélange, (2) the Wallowa Mountains-Seven Devils Mountains volcanic arc terrane, (3) the Juniper Mountain-Cuddy Mountain volcanic arc terrane (may be a southern extension of the Wallowa-Seven Devils volcanic arc), and (4) Jurassic Flysch terrane of forearc basin marine sedimentary rocks. All four terranes are separated by major unconformities and faults and were intruded by plutons of Late Jurassic and Early Cretaceous age. These terranes were formed in the eastern Pacific Ocean, far from their present position, and were transported on lithospheric plates to be accreted on the edge of the continent.

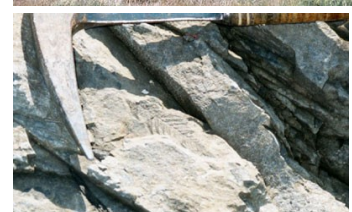


## Oceanic Crust Terrane

The dismembered oceanic crust terrane has undergone extreme deformation that is characteristic of tectonic mélanges. This tectonic disruption probably happened in Late Triassic time. The oceanic crust terrane includes mafic rocks (ophiolite), metamorphosed chert, argillite, tuff, lava flows and limestone that ranges in age from Devonian to Middle Triassic. It includes the Canyon Mountain Complex, Elkhorn Ridge Argillite and Burnt River Schist of eastern Oregon and the lower part of the Riggins Group of western Idaho. Fossils and other evidence indicate that rocks derived from a deep ocean environment as well as from shallow water are mixed together.



The Snake River flows through Hells Canyon at Pittsburg Landing



Jurassic-aged fern fossils from the Coon Hollow Formation are abundant in the siltstones and sandstones at Pittsburg Landing

Examples of  
accreted terrane  
in photos

## Volcanic Arc Terranes

## The Wallowa Mountains-Seven

Devils Mountains volcanic arc terrane includes the Lower Permian and Middle and Late Triassic volcanic rocks of the Seven Devils Group and the Clover Creek Greenstone. This terrane also includes overlying Late Triassic and Early Jurassic marine sedimentary rocks of the Martins Bridge, Hurwal and Coon Hollow Formations and the Lucille Slate.

The Juniper Mountain-Cuddy Mountain volcanic arc terrane includes assemblages of metamorphosed basalt, andesite, dacite and rhyolite flows that are interlayered with marine sedimentary rocks. The two volcanic arcs are separated by layers of Cenozoic age so their relationship is not known. The volcanism that created the two arcs ended in Late Triassic. Both arcs may represent different parts of the same arc or it is possible that the two terranes represent two different arcs with different origins. Based on structural and stratigraphic similarities it is probable that the volcanic terranes are different parts of the same arc.

The volcanic arc terranes are similar to the accreted island-arc terranes termed Wrangellia that lie between Alaska and Vancouver Island. However, based on the composition of volcanic and sedimentary rocks, the accreted terrane in Idaho is not related to the Wrangellia terrane.

## The Jurassic Flysch

Flysch is defined as thin bedded, poorly sorted, deep water sandstone and mudstone rapidly deposited, usually during an orogenic pulse. The Jurassic Flysch accreted terrane includes siltstone, argillite, slates, phyllites, volcanic wacke, arkosic wacke, limestone and conglomerate. Poor sorting, angular grains and rock fragments are common to these rocks. The Squaw Creek Schist, Fiddle Creek Schist, Lightening Creek Schist and the Berg Creek Amphibolite of the Riggins group are representative of the Jurassic Flysch.

The Flysch is situated between the volcanic arc and the oceanic crust terrane and is believed to have been compressed against the arc by the oceanic terrane. Deposition of the flysch probably ended in the Late Jurassic. The oceanic terrane and the volcanic arc terrane were sutured in Late Triassic and Early Jurassic time and the Flysch derived from the volcanism was deposited along the suture. (Idaho Accreted Terrane—continued on page 8)



## YESTER YEAR JULY 1966

The July picnic was at the Municipal Park. Plans were made for a field trip; to High Valley for tourmaline crystals and for the August trip to Dismal Swamp in August. Members of the Richmond club in Canada would be at the August picnic and wanted to trade rocks.

The Board meeting was trying to find a free place that the club could meet. Bulldozing the Whangdoodle will cost \$75.00 for the transportation of the bulldozer plus \$13.50 to \$19.00 per hour. Dudley Stewart will supervise the work.

To get the material for fronts only on the display cases it will cost \$60.00 to 65.00 dollars. It was decided to buy enough material to make 25 cases, also to buy the electrical fixtures for the lighting.

The October trip will be to the Whangdoodle. It was decided not to meet at the Bank of Idaho on Vista as it didn't have anyplace to have refreshments and only had seating for 55 people and there was 83 members at this meeting. So they had to have a larger meeting place.

The club will hold a show April 15 and 16 at Larry Barnes show room. Larry Barnes will furnish advertising, power, and show prizes. Jenny Higby invited the club to her claim in December to look for Queenstone.

Patsy Bethel

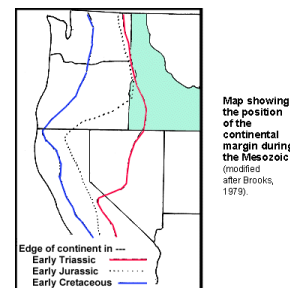
Long time member, Mida Cook died at home, the 17<sup>th</sup> of September. A lot of the show cases we use in our shows were made by our volunteer members in Art and Mida Cooks West Land Building Supply on Overland Road. Mida was 91.

*In Loving Memory  
Patsy Bethel*

(Idaho Accreted Terrane—continued from page 7)

### Continent-Island Arc Junctionure

The continent-island arc junctionure in west-central Idaho is narrow and well defined. Lund (1984) has recently described the geological character of this junctionure or suture zone. On both sides of the suture, the metamorphic grade increases to amphibolite facies near the junctionure. The suture zone lacks many of the features of a typical subduction zone. It is an abrupt, nearly vertical junctionure between the continental metasedimentary rocks of Paleozoic to Middle Proterozoic age on the east side of the metamorphic rocks of the Permian - Triassic Seven Devils island arc and the overlying Riggins Group on the west. No transitional metasedimentary rocks with a marginal basin exists at the suture zone as is common for other known suture zones. According to Lund (1984), the suture was made by a convergent, right-lateral fault that sliced away the edge of the continent and then brought slabs of exotic oceanic (accreted) terrane in from the southwest.



### Deformation and Time of Accretion

The accreted terrane was deformed in the Late Triassic and again in the Late Jurassic. The Late Triassic deformation occurred following deposition of most of the volcanic rock units. The time of the accretion is estimated to have occurred 118 million years ago (Lund, 1984; Sutter and others, 1984).

Deformation and metamorphism of the Riggins Group at the contact with continental rocks occurred at that time. However, the accretion process probably occurred over a period of time ranging between Late Triassic and mid-Cretaceous. During this time and for a period afterwards, the Idaho Batholith was formed by magmas generated from subduction of the eastward moving plate.



An east-west cross section across western Idaho 60 to 120 million years before the present. At that time the Pacific Ocean was lapping against the western part of the State of Idaho.

### Terms & Phrases Vocabulary used in this text

accretionary prism  
accreted terrane  
assemblage  
batholith  
Cenozoic  
continental crust  
Cretaceous  
island arc  
isotope

lithosphere  
metamorphism  
miogeocline  
oceanic crust  
Paleozoic  
pluton  
sedimentary rock  
subduction  
unconformity  
volcano

Used by permission for educational purposes.  
<http://imnh.isu.edu/digitalatlas/geo/accreted/accreted.htm>



## The Dangers of Rock Dust

By Glen Kuban

Keywords: Silicosis, pulmonary fibrosis, lung disease.

Many collectors use a mechanical rock saw to cut, trim, or abrade rocks and fossils in the field or lab. Dangers of this activity include flying rock chips, wounds from the blade itself or broken blades, and rock dust, which is extremely dangerous to inhale. Always read and understand the proper operation of any mechanical tool before using it. Whenever cutting or grinding rock, wear protective eye goggles. Also wear a good respirator, or use a dust collection system, to avoid inhaling rock dust, which accumulates in the lungs and can cause a variety of serious illnesses.

For those not convinced that rock dust is a serious danger, or that they can get away with not wearing a respirator or working under a hood (if working indoors), I encourage you to read the messages below. The original message was posted on 7-14-97 in the Rocks and Fossils News-groups, and my reply was sent to that list as well as the Dinosaur List, VrtPaleo, and Fossil Nuts.

The original message I am responding to was posted in Rocks and Fossils, but I am sending my response to other paleo-related lists as well, because I feel this is an important safety issue.

It affects anyone who even occasionally cuts rocks or fossils, or does fossil preparation work. It will be very worthwhile if it prevents even one person from suffering lung problems or dying prematurely. With that deliberately ominous introduction, let me quote the post that prompted my response:

Pete Richards wrote:

> Last night I spent an hour cutting sandstone sidewalk >blocks with a composition blade made of fiberglass and >carborundum grit. This is a dry saw and it was a still >night and clouds of dust were all around. Some of it hung in the air for minutes. I am not really concerned about a one-shot exposure, but it did make me wonder if this is the size of silica which DOES represent a health hazard. Of course, I do not know for sure that the fine dust was silica, as opposed to calcium carbonate (the cement in the sandstone) or material from the saw blade...

It's funny, or really not so funny, that you should write now. I'm suffering a chronic lung irritation, and seeing doctors now, because of the results of a similar incident. In short, yes, one or a few exposures to significant amounts of freshly-cut rock dust can cause serious problems. Silicosis is only one of many lung problems that can be caused by rock dust, many of which (like fibrosis) can occur no matter what the composition of the rock. Wearing a good respirator or hood with dust collector if working indoors is a must. If you don't have the proper safety equipment, don't cut the rock!

Unfortunately, I found out the hard way, I hope everyone learns from my mistakes. About a year ago our fossil club went to Ontario to collect trilobites, and we took along a diamond rock saw. I only sawed out a few trilobites for fellow members (without wearing a mask; I forgot to bring one) and I tried to not inhale the dust. However, large clouds of it were kicked up each time, and it was impossible to avoid inhaling quite a bit of it. My the next morning I had significant lung irritation, and have had it ever since—some days worse than others. I have frequent coughing and uncomfortable sensation in my upper chest.

After this went on a few weeks, I went to a doctor, not knowing if I had contracted a bacteria, fungus, or other microbe at the quarry, or just had accumulated too much dust in my lungs. An x-ray was clear, but that is not unusual in such cases (it sometimes takes years for fibrosis, TB, cancer, and other diseases to develop). Apparently the rock dust itself is the cause the current lung irritation, and it may never get better. In fact, it may worsen into other conditions, as explained below.

Many people assume years of exposure to rock dust is needed to cause serious problems, and this is generally true when dealing with wind-blown, low concentration dust, which usually has already been weathered to some degree. But not so with freshly cut rock. After I started having my problems, I began talking to doctors and doing lots of reading. I also talked to an uncle who used to work in a quarry, and is now dying of pulmonary fibrosis at the age of 55. I'm now going to his doctor.

It turns out that not only do rock particles of any composition tend to stay and accumulate in the lungs, but freshly cut rock is the worst, and extremely pernicious. Even one or a few incidents of significant inhalation of such dust can cause lung irritation and a start process of increasingly serious lung damage. The microscopic particles are like millions of razor-edged shards that damage lung tissue directly, as well as create conditions promoting the development of TB, microplasms, fibrosis, and cancer.

Experiments with rats and other animals have shown that inhalation of fresh cut rock dust is far more damaging than worn rock dust of any composition, and leads to far greater rates of several diseases, including pulmonary fibrosis and lung cancer. (But even accumulations of worn rock dust in the lungs greatly increased chances of lung diseases).

I've also made many fossil molds and casts over the years, and although I often wore a mask while working with plaster, but sometimes did not. I may well have accumulated plaster in my lungs as well, which may have contributed to or aggravated my lung condition. Plaster hardens when in contact with moisture, wherever it occurs, including one's lungs. But I did not have the constant lung irritation until after the Ontario trip using the rock saw (on hard shales and siltstones), and have had it ever since.

I have another appointment with a pulmonary doctor on Thursday, but from what I have learned such damage is generally irreversible, the best I may hope for is to have my condition not get worse. I may have to live with lung irritation and chronic cough for the rest of my life, plus increased chances for the serious conditions I listed above.

So PLEASE, whenever you are cutting or grinding rock of any kind, ALWAYS wear a respirator (not just a cheap dust mask). If working indoors, use a dust collecting hood, or don't do it. Your health is not worth any rock or fossil.

There are serious inhalation dangers in the lab also, including solvents, urethanes, glues, and other chemicals used on prep work. These too can have accumulative effects, and lead to a variety of health problems. Work with such chemicals only with very good ventilation, or under a hood, or don't do it. Again, a rock or fossil is not worth your health.

If I scared anyone, I can't feel too bad, because I wish someone had scared me before I did what I did, and may have to pay the price the rest of my life.

Pete, in your case, I hope you do not have any problems, and can only urge you not to do it again, at least not without wearing a respirator. The dust you created by cutting sandstone probably included a mixture of siliceous sand particles, calcium carbonate particles, (from the cement between the sand grains), and fibers from the fibrous saw blade. All could be dangerous to inhale.

Thank you,

Glen Kuban

<http://paleo.cc/kpaleo/palesafe.htm#safe>



## Rocky Rattlers


**Juniors need to bring their folders to the meeting this month**

Our club Sunshine Lady, Arlene, sent sympathy to the following members that are ill or have been in the hospital:



Flowers were sent to Vicki Bickford, she is still in the hospital, but is expected to return home soon.

A get well card was sent to Robin Solt after his September surgery.



**Sunshine Lady**

Arlene Bailey is the club sunshine lady. Her job is to send some cheer to members who are ill or just need some cheering up. But she needs your help in doing this job. If you know of someone who has been recently ill let her know so she can send them a card. Her phone number is 562-8030. Thank you in advance for your help.

## Federation & Other Clubs News

### READING THE NORTHWEST NEWSLETTER ON THE INTERNET

The economy is hard on all of us and trying to be a bit "greener" so we are attempting to put together a way to save some of the costs of postage and printing for the Northwest Newsletter. If you would like to read your Northwest Newsletter on the web here is what you can do.

First, notify Tom Burchard, Circulation Chairperson (Roxhund@aol.com ) that you do not wish to have the Northwest Newsletter mailed to you via the US Postal Service. Then you have two options:

1) Go and check on the internet usually yourself sometime after the 20th of the month to see if the Northwest Newsletter has been placed on the NFMS web site. (<http://www.amfed.org/nfms/newslet2.htm>)

2) Contact Tony Griffin (467-9286 or [highdesert2003@q.com](mailto:highdesert2003@q.com)). Tony will collect the email addresses of those in their club who wish to be notified of the posting on the internet. As soon as the NFMS webmaster has received and posted the Northwest Newsletter on the website he will notify your contact person, Tony who will then email you to let you know it has been posted so you can go and read it or as an option can download it.

### Owyhee Gem & Mineral Society Field Trip

Rome, Oregon October 22nd

<http://www.owyheerocks.com/>

(Erionite continued from page 3)

**“At a minimum, we can begin to start to educate the public and policymakers,” he told FairWarning. “I certainly don’t want to count bodies later.”**

Driving the renewed interest is fear of repeating past government failures to promptly inform the public of potential hazards.

One case involved **Libby, Montana**, where asbestos contamination from a mine near the town was blamed for scores of deaths and illnesses among workers and residents. Vermiculite ore tainted by asbestos and mined from about 1920 to 1990 was given to unwary residents for use as insulation and in other building projects. When the EPA arrived on the scene in 1999, it came under scathing criticism for failing to act earlier to inform the community and launch a cleanup.

Another was the disclosure that road crews in North Dakota, heedless of the danger, had used **erionite-tainted gravel** to cover hundreds of miles of unpaved roads in the western part of the state, including school bus routes, along with parking lots and recreation sites.

Erionite is found where volcanic ash and rock have been weathered by alkaline water. Like asbestos, it is harmless until it is disturbed, and the microscopic, needle-like fibers become airborne. And like asbestos, greater and more frequent exposure generally means higher risk.

No proof has emerged of erionite-related illnesses in North Dakota or other western states, but experts say that is less than reassuring. Mesothelioma usually takes 30 to 50 years to develop, is sometimes mistaken for other cancers, and when identified often is automatically assumed to be asbestos-related.

In **Mexico**, a mesothelioma cluster has been reported in a rural area near the border of Zacatecas and Jalisco states. Medical reports say victims had no known exposure to asbestos, but lived on a plain rich in zeolites, the mineral family that includes erionite.

When Turkish researchers in the 1970s found soaring rates of mesothelioma in the Cappadocia region, they **linked it to villagers inhaling dust** while farming potatoes and scallions. They soon discovered that residents were also being exposed inside their homes built with erionite-containing stones.

Research later uncovered a **genetic factor**. People in the hardest-hit villages had long been shunned by horrified outsiders, leading to inbreeding and magnifying the risk for those with a genetic predisposition to the harmful effects.

Documents reflect a brief interest in the health implications for the American West.

In an area of north central Nevada where erionite was present in road dust, researchers from the University of Utah examined chest radiographs from a local hospital, but turned up nothing unusual. But they also published a **case report** describing a local road construction worker with respiratory disease whose lung biopsy showed fibrous particles “consistent with erionite” An investigation of mesothelioma “in the Intermountain region and exposure relationships would be useful,” they wrote.

But according to two of the researchers, Dr. William Rom, currently director of the pulmonary division at the New York University School of Medicine, and Dr. Kenneth Casey, now at the University of Cincinnati College of Medicine, their request for a grant from the Institutes of Health was turned down.

About the same time, with the Defense Department proposing to build a network of “racetracks” to shuttle nuclear MX missiles over a vast area of the Great Basin, opponents seized on the problem of erionite dust. The plan was abandoned, and interest in erionite faded, too.

It was revived by chance after an official from the U.S. Geological Survey gave a talk at the spring banquet of the University of North Dakota geology department in 2005. He spoke of the need for geologists to be aware of naturally occurring hazards, mentioning erionite. An assistant professor named Nels Forsman piped up: “Hey, we’ve got some of that right here in North Dakota.”

In the mid-1980s, Forsman, had done a field study in the Killdeer Mountains of western North Dakota for the state geological survey. His 1986 report noted the presence of erionite, but he knew nothing of the events in Turkey and didn’t give it much thought.

“Nobody in our department had heard anything about it” until the banquet, Forsman told FairWarning.

But Forsman then alerted the geological survey, which contacted the state health department, which in turn brought in the EPA. Their investigation launched in 2006 revealed that erionite-containing gravel from pits in western North Dakota had been spread over some 300 miles of unpaved roads.

Air sampling along the gravel roadways and in vehicles, including inside school buses, revealed erionite levels similar to those in some stricken Turkish villages, though at lower concentrations than the most devastated communities. A preliminary **health study** that included 15 people thought to have high exposure to road gravel found two with pleural plaques, or lung scarring, consistent with inhalation of mineral fibers.

Though the erionite situation quickly erupted into a major story in North Dakota, it drew virtually no media attention outside the state. So complete was the blackout that last December, when **Dr. Michele Carbone**, a prominent mesothelioma researcher, briefed lung specialists at a national medical meeting in Chicago, it was the first they had heard of it, according to some who attended.

In response to the discovery, the North Dakota Department of Transportation has banned the use of erionite-containing gravel on state roads. But the western part of the state is in the midst of a gigantic oil boom, bringing a massive increase in truck traffic and road dust that residents say clouds visibility and may be harming crops and human health. Last month the state industrial commission and two of the most affected counties authorized a study of the best ways to reduce road dust.

Some agencies in other states are taking safety measures, though the efforts have been isolated and piecemeal.



Michele Carbone  
Dr. Michele Carbone, director of  
the  
University of Hawaii Cancer  
Center

Oregon Department of Geology  
and Mineral Industries  
Erionite in rock formations,  
Rome, Oregon.



In eastern Oregon, which has  
large erionite beds, the state  
transportation department is

conducting a study. The idea is to avoid being “blissfully ignorant” of the locations of erionite or other naturally occurring hazards in future construction and maintenance work, said Matthew Mabey, a research engineer with the Oregon Department of Transportation.

In Montana, where road building crews in the 1960s ripped the top off an erionite-bearing mountain and spread the fill along more than three miles of state highway 323, soil samples have shown erionite levels as high as 20 percent. Highway workers have been directed to use protective suits and respirators when their work involves land disturbance, such as clearing ditches and mowing vegetation.

Erionite also occurs in rocky outcrops in parts of the Custer National Forest in southeastern Montana and western South Dakota. Forest Service officials have adopted dust control measures, including wetting down helicopter landing spots when fighting wild fires.

In a **joint report**, Custer National Forest and Montana officials cited the need for a federal policy to reduce risks from erionite and naturally occurring asbestos.

Mining is another activity without any rules on erionite exposure. No erionite has been mined in the U.S. for about 30 years, but it is sometimes mixed in with other types of zeolites that are produced at a few mines in the West. According to an EPA report in 1987, a producer contacted by the agency stated that its zeolite products “can contain 10 to 30 percent erionite.”

Most zeolites produced today are of two varieties, chabazite and clinoptilolite. With their ability to trap and filter contaminants, they have been used to purify water and to treat radioactive and other hazardous wastes.

From its Mud Hills mine in the Mojave Desert in California, Steelhead Specialty Minerals has produced clinoptilolite for cleanup of the tsunami-stricken Fukushima nuclear plant in Japan, said its president Wallace McGregor.

Along with others in the industry, McGregor said current operators are well aware of erionite, and take pains to avoid it. But “I wouldn’t say there isn’t a trace,” he added. It’s “maybe an overstatement that there are not traces of a little bit of this, and a little bit of that, in a zeolite deposit.”

Carbone, who will be among those presenting at the meeting at the Institutes of Health, has called for action to prevent and detect mesothelioma cases in North Dakota and other erionite-rich areas.

Mesothelioma is “a cancer that in most cases can be prevented,” he said in an interview. “We really have the possibility to do something...to prevent cancer in future generations.”

*FairWarning is a nonprofit, online investigative news organization focused on public health and safety issues.*

*Idaho Gem Club member Jan Smith submitted this article.*



**The purpose of the Idaho Gem Club is to promote mutual, educational and scientific interests and benefits of its members in mineralogy, geology, gemology, the art of lapidary and kindred arts and sciences.**

**Dues:**

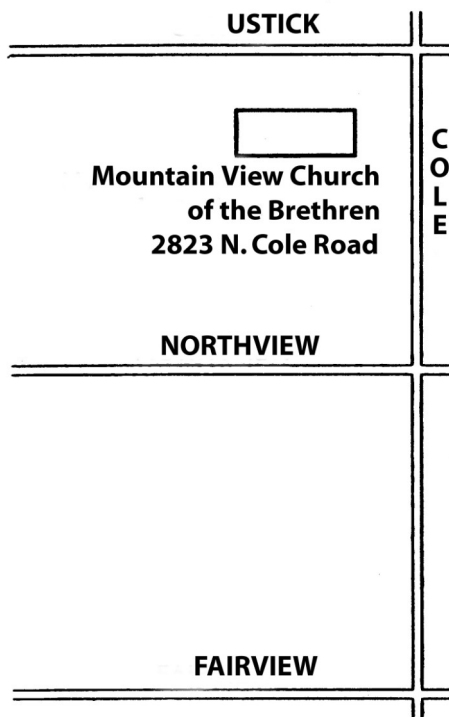
.....\$12.00 per person  
 .....\$15.00 per couple  
 .....\$17.50 per family

**Subscription:**

.....\$10.00 per year

**General Meeting:**

.....3rd. Tuesday of each  
 .....Month at 7:30 p.m.



**The Whangdoodle Bird**  
 (Often seen on field trips)



**Idaho Gem Club, Inc.**

P.O. Box 8443  
 Boise, Idaho 83707-2443

