

The Rockfinder

Michiana Gem & Mineral Society
Tom Noe, Editor
305 Napoleon Blvd.
South Bend, IN 46617



APRIL, 1996

THE ROCKFINDER

HIGHLIGHTS IN THIS ISSUE:

- Calcite Crystal Twins, p.7
- Make Your Own Collection Boxes, p.6
- Turned to Stone, p.4

MICHIANA GEM & MINERAL SOCIETY
1996 BOARD OF DIRECTORS

President	.....	Margaret Heinek	7091 E. East Park Lane, New Carlisle, IN 46552-9400
Vice Pres.	.....	Michael Slattery	52332 Carriage Hills Dr., South Bend, IN 46635
Secretaries	.....	Marie Crull	17651 Bryan St., South Bend, IN 46635
		Emily Johnson	62295 Pine Rd, North Liberty, IN 46554
Treasurer	.....	Pam Rubenstein	1316 Catherwood Dr., South Bend, IN 46614
Liaison	.....	Jessica Zieger	11923 McKinley, Mishawaka, IN 46545
Past Pres	.....	Jim Russell	27911 North St., North Liberty, IN 46554

HEADS OF COMMITTEES

Programs	.....	Michael Slattery	52332 Carriage Hills Dr., South Bend, IN 46635
Hospitality	.....	Pat McLaughlin	515 N. Clay St., Mishawaka, IN 46545
Educational	.....	Gordon Dobecki	11900 Laughlin St., Mishawaka, IN 46544
Librarian	.....	Bob Miller	1106 Clayton Drive, South Bend, IN 46614
Historian	.....	
Sunshine	.....	Sister Jeanne Finske	Bertrand Hall, St. Mary's, South Bend, IN 46556
Publicity	.....	Tom Noe	305 Napoleon Blvd., South Bend, IN 46617
Membership	.....	All Members	
Field Trips	.....	Kathy Miller	1106 Clayton Drive, South Bend, IN 46554

THE PURPOSE of the Michiana Gem & Mineral Society is to promote interest in and study of the earth sciences and the lapidary arts, and the sharing of knowledge and techniques.

General meetings are held the fourth Sunday of each month, 2:00 pm EST, at Our Redeemer Lutheran Church, 805 S. 29th St., South Bend, IN. Exceptions include field trip meetings, June (field trip), July (no meeting), August (club picnic) and December (Christmas Party).

Board meetings are held the second Wednesday of each month, 7:00 pm, St. Joseph County Public Library, basement level.

The annual club show is Labor Day Weekend.

The Michiana Gem & Mineral Society, a not-for-profit organization, is affiliated with the Midwest Federation of Mineralogical Societies and with the American Federation of Mineralogical Societies.

Rockfinder staff:

Editor, Tom Noe, 305 Napoleon Blvd., South Bend, IN 46617
 Co-Editor, Margaret Heinek, 7091 E. East Park Lane, New Carlisle, IN 46552-9400

Reporters, Bob Heinek, Herb Luckert, club members
 All contributions for publication should be in the hands of the editor by the 10th of each month. Call (219) 289-2028 or (219) 654-3673. Permission is hereby granted to reprint any original *Rockfinder* articles, as long as due recognition is given along with the reprint.

cut _____

Yearly Membership Dues (Payable before January 1)

_____ Individual	\$ 6.50 per year
_____ Family	\$10.00 per year
_____ Junior	\$ 2.00 per year

Please send your dues and this form to
 Michiana Gem & Mineral Society
 c/o Margaret Heinek

7091 E. East Park Lane, New Carlisle, IN 46552-9400

Please make address corrections to the mailing label (reverse side) and/or fill in the optional information below.

Check your SPECIAL INTERESTS:

- | | |
|-----------------------|----------------------|
| General Geology _____ | Beads _____ |
| Gems & Minerals _____ | Silversmithing _____ |
| Fossils _____ | Artifacts _____ |
| Cabochons _____ | Rockhound _____ |
| Faceting _____ | Crystals _____ |
| Carving _____ | Micromounts _____ |
| | Other _____ |

Name _____
 City, St., Zip _____

List Family Members (spouse and children):

- | | | |
|---------------|---------------------------|--------------------------------------|
| Name _____ | Birth Mo/Date _____ | will attend meetings, yes ___ no ___ |
| Name _____ | Birth Mo/Date _____ | will attend meetings, yes ___ no ___ |
| Name _____ | Birth Mo/Date _____ | will attend meetings, yes ___ no ___ |
| Name _____ | Birth Mo/Date _____ | will attend meetings, yes ___ no ___ |
| Address _____ | | |
| Phone _____ | Anniversary Mo/Date _____ | |

THE ROCKFINDER

Volume 36
Number 4

April, 1996

Published by
Michiana Gem & Mineral Society

April program: Donna from The Crystal Connection will speak about her interest in healing properties of crystals.

Meeting: Meeting: Sunday, April 28
Doors Open 1:30 PM
Meeting at 2:00 PM

Place: Our Redeemer Lutheran Church
805 S 29th St. (29th & Wall)
South Bend, IN

Hosts Phyllis and Herb Luckert
Mike Slattery



UP AND COMING

- May 3-5: Central Illinois Gem and Mineral Club Show, Macon County Fairgrounds, Decatur, IL.
May 3-5: Kalamazoo Gem and mineral Show, Fairgrounds, County Center Bldg., Kalamazoo, MI.
May 4-5: "Fabulous Flourites" theme for Cincinnati Mineral Society's show at Cincinnati Gardens.
May 10-12: Flint Rock & Gem Club, IMA Sports Arena, Flint, MI.
May 11-12: Brukner Gem and Mineral Club, Junior Fair Bldg., Miami County Fairgrounds, Troy, OH.
May 17-19: Cleveland and Area Gem and Mineral Show, Cuyahoga County Fairgrounds, Berea, OH.
May 17--19: "Western Wonders" theme for Dearborn club's gem & mineral show, at Dearborn Civic Center.
May 24-26: North American Promotions Gem and Jewelry Show, Wright State University, Fairborn, OH.
May 31-June 2: North American Promotions Gem and Jewelry Show, Masonic Complex, Toledo, OH.
June 21-23: Gem-Mineral-Fossil Swap!, Lawrence County Rock Club at Monroe County 4-H Fairgrounds in Bloomington, IN.
July 26-28: Annual Midwest Federation Convention and Show in Macomb, IL.
August 5-9: Red Metal Retreat, Houghton, MI. Lake superior Copper Mining District of Michigan's Upper Peninsula, geological tour, mineral swap, collecting, field trips, slide talks, and a benefit auction.
August 9-11: American Federation's Convention and Show in Riverside, CA.

MARGARET'S COLUMN

Haven't we had different weather lately? Snow, warm, hailstorms and wind! I sincerely hope you haven't had damage to your home or car. I'm ready for warm weather! Bob and I are leaving for a few days in Georgia, and we hope it is warm there. Our son Don is ill, and Bob and I are going down to see if we can help in some way. Sorry to miss the field trip to Illinois but we hope to see you at the meeting on April 28.

The April show was nice. We saw several of our members who have not been to meetings for a while. Tom Noe had 4 tables with silent auction material he sold for the benefit of the club, and did an excellent job. I don't know how much he made, but I believe it was quite a bit. Thank you, Tom! Tom had some help with the sales from juniors Alec Rubenstein and Bill Nelson, and also Mike Slattery.

Jack Lahr came from Mt. Vernon, Ohio, to demonstrate his LAP-LAP Hand Facetor, and he also talked up our club! We have two new members, and you can add the following names to your roster: Madeleine Martinez and junior Michael
4109 Coral Dr., So. Bend, IN 46614
291-7639

Tom Holcomb
1518 E. Donald, So. Bend, IN 46613
289-5469

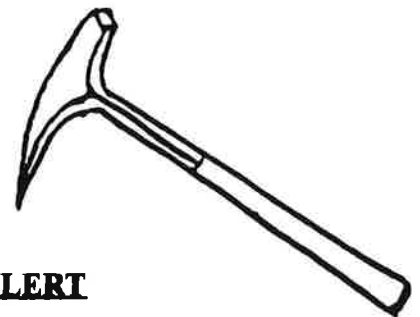
Ed and Marsha Miller
3431 E. 18th B Rd., Tippecanoe, IN
46570 219-498-6513

Cliff & Katie Maxwell
16395 Fox Cross Dr., Granger, IN
46530 277-4784

Marie and Bill Crull will be home later this month. They called me to let me know they were on their way. I think they miss all of us! Ha! Ha! It will be

good to see them. John Scott, one of our regular dealers, was at the April show but wasn't feeling too well. The cold snap on Saturday made him ill, so Sunday he did not come to the show. He is on oxygen and the cold is bad on him. We had several new dealers who really like our Century Center location. One dealer from the East told me that no other show he sets up at has such a clean facility, comfortable surroundings and friendly people. Every one of the dealers who attended the April show wants to come to the September show. Martin's Minerals, the dealers who have the large booth, were unable to attend. He called me on Thursday evening to tell us he would not be at the show. His wife, Geodon's daughter, was expecting a baby and he flew to Florida to be with her. I believe they will be at the Labor Day show.

Start planning your displays for the club show on Labor Day Weekend. Maybe you will find some good items in Illinois on this month's field trip. Remember, bus transportation on the field trip is free to our active members, the members who help out in some way with club activities. We need a lot of help at the Labor Day show: selling tickets, setting up and taking down, staffing the kids' activities and the silent auction, etc., etc. If you plan on making the September field trip to Ohio, you could help out in some way with the show.

**FIELD TRIP ALERT**

Those who are interested will be driving (no bus this time) to Stone Quarry near Fort Wayne on June 8 (Saturday). We will join the Fort Wayne club, looking for mineral specimens from 7:30 (or whenever we arrive) until 12 noon. There will be more information in the next *Rockfinder*.

THE MINERALS OF MAKEUP

By Donna Boreck and Liane Kadnuck

Have you ever read the list of ingredients in makeup, shampoo or toothpaste? It might surprise you. Many personal-care products contain a wealth of mineral materials taken from the earth.

Take, for example, eye shadow. One of the first ingredients listed in eye shadow is usually talc --a magnesium silicate mineral. Its platy crystal habit is in part the reason why talc has been an important ingredient in cosmetics since 3500 B.C. The plates glide smoothly across each other, allowing makeup to be applied easily. They lie across the pores in the skin and lessen the chance of clogging pores, while providing texture to the skin.

Yet they are translucent enough not to be seen. Talc is resistant to acids, bases and heat and tends to repel water. In addition to eye shadows, talc is used in loose and pressed powders and blushes, is a filler in some deodorants, and is added to lotions and creams. Talc can also be found in chewing gum and pharmaceuticals.

Mica, a mineral widely used in eye shadow, powder, lipstick and nail polish, is added to give luster or pearlescence to a product. Mica is resistant to ultraviolet light, heat, weather and chemical attack and adheres to the skin. Like talc, it has excellent slip characteristics and may be used to replace talc in makeup. When coated with iron oxide, mica flakes sparkle with a gold tint.

Kaolin, a clay, is added to makeup to absorb moisture. It covers the skin well, will stay on the skin, and is resistant to oil. Kaolin and another clay, bentonite, are added to the earth-based face masks or packs predominately for their cleansing effects. Clays are also used as fillers in different products. Powdered calcite, a calcium carbonate, absorbs moisture. Because of this, calcite and a magnesium carbonate, processed from dolomite, are added to powders to increase the ability of the makeup to absorb moisture.

When it comes to makeup, color is the name of the game. Minerals provide coloring for the eyes, cheeks, lips and nails. Iron oxide, one of the

most important color minerals, was used by Cleopatra in the form of red ochre as rouge. Today, iron oxides give red, orange, yellow, brown and black tones to makeup. Chrome oxides are used for greens; manganese violet for purple; ground lapis lazuli may be added to makeup for blue. Ultramarine blue and pink coloring is made from a mixture of kaolin, soda ash, sulfur and charcoal. Even gold has historically been used as a colorant. Ancient Egyptians used gold to color skin and hair. Gold can still be found in powders and makeup to add a "rich" golden sheen to the skin.

As an artist starts a painting with a bright white canvas to give the colors brightness and intensity, titanium dioxide is added to brighten and intensify the color of makeup, and to give whiteness and opacity. Titanium dioxide is also a natural sunblock and, like talc, iron oxides and gold, it has been used for centuries. Titanium dioxide can be found in any makeup--shadow, blush, nail polish, lotions, lipstick and powders. Titanium dioxide also makes Oreo cookie frosting extra white and is the "M" on M&M's candy.

Minerals also find their way into health-care products we use daily. Salt is effective in treating skin disease and is used in some soaps. Fluorite, processed for fluoride, is added to toothpaste and drinking water to help prevent tooth decay. Calcium carbonate (calcite) and baking soda are abrasives in toothpaste. A borax and beeswax mixture is added to cleansing creams as an emulsifier to keep oil and water together. Boric acid is a mild antiseptic and is added to powder as a skin-buffering agent. Zinc oxide is added to creams to allow the cream to cover more thoroughly. Zinc oxide ointment, which contains approximately 20% zinc oxide, is used to heal chapped skin. When an unlucky hiker runs into poison ivy, calamine base lotions are often used to soothe the itchy skin. Calamine is another name for hemimorphite, a zinc silicate mineral.

As you can see, minerals are found in many things we use. So the next time you are in the supermarket, take a moment and acquaint yourself with the multitude of minerals that are a part of our daily lives.



TURNED TO STONE

Each year the federations (AFMS & regional) make awards to authors for their contributions of published articles. The following is FMLS 1992 trophy award for best educational article.

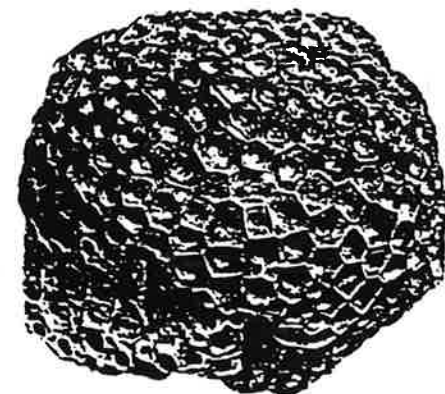
By Wolfgang Vogt

Part one

In my own way, I find science as being very complicated. A simple procedure such as fossilization should not be difficult to understand by anyone. After all, fossils are the remains of plants or animals, or the record of their presence, preserved in the rock of the earth. In fact, all remains or traces of plants and animals which have lived before the present geological period can be called a fossil. Since probably 99+% of all life past and present has vanished without leaving even the slightest trace, it takes special circumstances to preserve a fossil.

At this point, things get complicated. Part of the fossilization process is petrification, which sometimes is called petrification, depending upon who your professor was. Both words have the same meaning, that is, literally, "turned to stone." On the other hand, do you prefer to use the words "silicified" or "agatized"? Or, how about "mineralization," or "mineral replacement," "permineralization," "pyritization," "carbonization" or "calcification"? Maybe your fossil is called a pseudomorph? Do these terms all denote the same thing? (They do, in a way!) Do they all play a role in the process of fossilization? Let me share with you the meanings of all these different terms.

Petrification or Petrification: As I mentioned before, these terms mean "turned to stone." Not all fossils are petrified. We speak of a fossil as petrified only when additional minerals have been deposited in pores or cavities in fossils, or when the fossil is entirely replaced by other material. A fossil can be buried and remain chemically unchanged for millions of years. Under such circumstances the fossil is said to have original preservation rather than being petrified. Petrification can take place in two related ways, one of which is permineralization.



Permineralization is a process of fossilization in which the original hard parts of an animal or plant have additional mineral matter deposited in their pore spaces. Organic substances decay, while waters containing dissolved mineral matter soak into every cavity and pore of the hard structures. There the minerals are deposited, producing fossils that still contain a good deal of their original solid material.

Permineralized wood, for example, contains mineral material and the original wood. If the mineral material dissolves, the original wood with its structural features remains.

Replacement is another way in which a fossil becomes petrified with the assistance of minerals. Replacement takes place when water dissolves the original hard parts and replaces them with mineral material. This process preserves the appearance and cell structure of the original tissue. If the minerals which have replaced the wood, for example, are dissolved away, no wood remains, unlike in the case of permineralization. Replacement does not take place only in the fossil world. Mineral crystals are also subject to replacement. Suitable environmental conditions and suitable chemical agents will cause even the most stubborn mineral to become replaced by other minerals, ion by ion.

Pseudomorphs: The word means "false form." The term is also often used to describe a particular process in petrification and mineral replacement. There is a very thin line between replacement and pseudomorphism.

In the mineral world, a pseudomorph is formed when a crystal is dissolved out of an enveloping matrix and its vacant space is filled with

another substance without changing the original crystal form. The word "after" is usually used in the phrase that indicates which mineral came first and which came second. For example, an anhydrite crystal is covered by quartz. Then, the anhydrite dissolves out, leaving an empty space shaped like the anhydrite, with the enveloping quartz. Finally, a new mineral, such as prehnite, enters the cavity taking the shape of the anhydrite.

Such a process can take place with fossils. A piece of wood is buried in mud or sand that hardens around it. The organic material of the wood then dissolves or decays, leaving behind a mold which can be filled with minerals which take the original shape of the wood. Only the outside of the specimen looks like wood. The inside may be banded agate or not resemble wood at all. In the latter case, the specimen is labeled as "agate pseudomorph of wood."

If you think that things are beginning to get complicated, just wait! This is just the beginning!

(continued next month)

CRYSTAL PROBLEMS

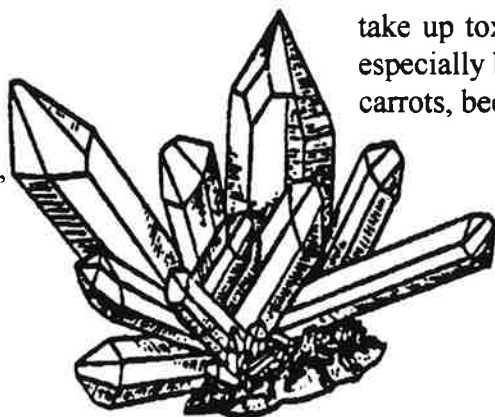
By Cornelius S.Hurlbut, Jr.

When first I studied crystal,
I didn't have the knack
Of three dimensional thinking:
This skill I seemed to lack.

I'd turn and twist the crystal round
In hope that I could see
At least one axis or a plane
Of crystal symmetry.

The prism, pinacoid and dome,
The rhombic pyramid
All looked the very same to me,
No matter what I did.

But now I've studied long and hard,
And think I'm somewhat wise,
For in no length of time at all
The cube I recognize.



THINK ABOUT THIS!

You have a plain bar of iron worth about \$5.00 to start with. Made into horseshoes it's worth \$10 to \$15. Made into screwdrivers or kitchen cutlery, it may be worth \$250.00. Made into needles, it is worth \$3,500.00. Made into balance springs for watches, it is worth \$25,000.00. The same is true of another kind of material — **YOU** — your value is determined by what you make of yourself!

METAL-EATING WEEDS ARE SLURPING UP POISON SOIL

Weeds can help humans get out of their environmental mess. An important approach is the selection of "magic plants" that clean up soil by absorbing metals, then harvesting the crops and processing them to recycle the metals.

Researchers are using a variety of plants called "hyperaccumulators" such as ragweed and hemp and dogbane, that can build up in their cells higher concentrations of metal than exist in the soil.

Planted on barren land where a tetraethyl-lead-additive manufacturing company was active for 75 years, ragweed plants showed, in only four months, eight times the concentration of lead that existed in the soil.

An experimental station in England has produced plants that take up one percent of their body weight in zinc. It is calculated that zinc could be brought down to acceptable levels (in the soil) with 13 croppings. Cells from jimson weed have been used to clean plutonium from nuclear sludge, and used cells from certain resins to clean copper, selenium and uranium from water. Researchers are now looking for ways to alter plants so they do not take up toxic metals from the soil. This would be especially beneficial for root crops such as potatoes, carrots, beets and the like.

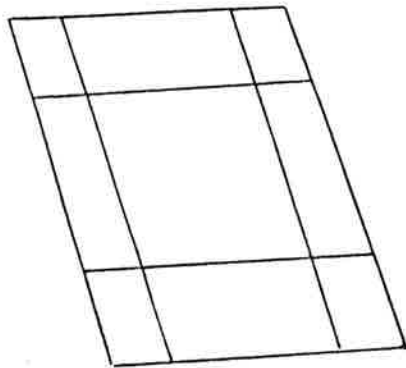
From *Crystal Cluster* (April, 1995)

SIMPLE COLLECTION BOXES AND HOW TO MAKE THEM

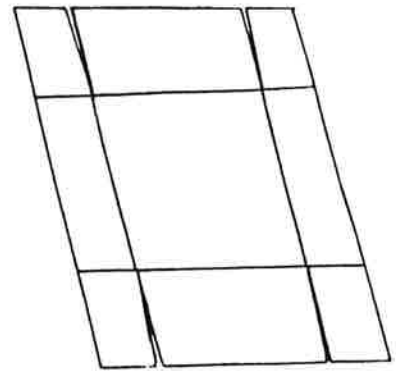
Fossil and mineral collection are often kept in a variety of containers, from plastic bags to coffee cans, from egg cartons to plastic freezer boxes. Simple collection boxes can be made rapidly and economically with posterboard and a stapler.

To begin with, sheets of posterboard with a significant stiffness can be purchased at most office supply houses, drugstores and department stores. The most important step is to decide the size of the box to be made. The boxes described here are shallow boxes to hold one or more individual specimens. These are similar to the type of boxes in which jewelry comes, without a lid. Because of the nature of the posterboard, sizes exceeding 4" x 4" are not recommended. Square boxes of from 1" to 4" square are easily made, although rectangular boxes are also possible.

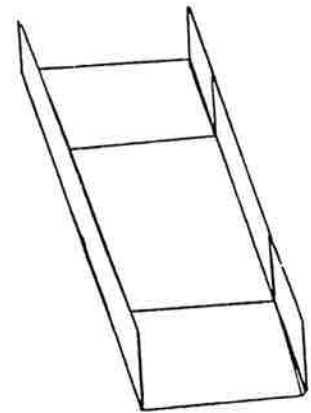
Once the size or sizes have been decided upon, cut rectangles from the posterboard which are one inch wider than the box is to be, and two inches longer. Measure in one-half inch from each of the long edges and draw a line the length of the rectangle. Then measure one inch from the top and one inch from the bottom and draw similar lines across the rectangle.



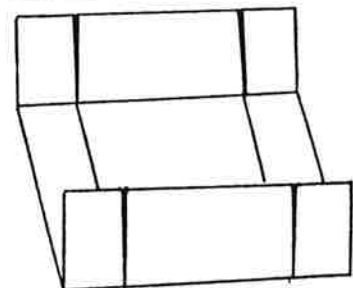
Next, with a scissors, cut along the long lines from the ends of the rectangle, to the point where the other line crosses it. There will be a series of four parallel cuts, two on each end.



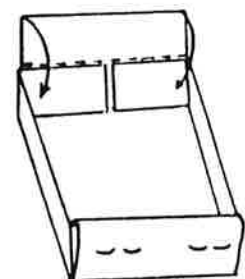
Fold each side up, along the long line in which the cuts were made.



Then, fold up each end, including the portion separated by the cut.



Again, fold up the sides with the cut tabs folded in towards each other. Fold the long end up and then over the tabs, toward the bottom of the box. Staple from the inside-out or the outside-in through all three layers of posterboard.



RECOGNIZING A CALCITE TWIN

By R. Peter Richards

Part of the presentation to FM Pacific Northwest Chapter 20th Annual Mineralogical Symposium, September 23-25, 1994.

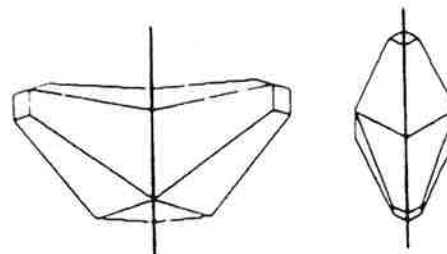
At least for common calcite twins, the twin consists of two identical (or nearly identical) halves, meeting along a plane across which each part is the mirror image of the other. This mirror plane, the *twin plane*, must be in a different orientation than mirror planes of symmetry which are naturally part of an untwinned calcite crystal.

Twinning in calcite almost always occurs immediately at the beginning of crystal growth. Thus the two halves of the twin are typically about the same size, and the twin plane intersects the matrix or the broken part of the crystal which shows where it was attached to the matrix.

Twinning typically leads to a great change in the shape of the halves of the twin, because the notches in the crystal which occur where the two halves meet cause some faces to grow faster than others, leading to a distortion of the crystal shape which is the same on both sides of the twin plane, i.e., the twin plane is a mirror even for the distortions of the crystal! This is less true for twinning on the basal plane.

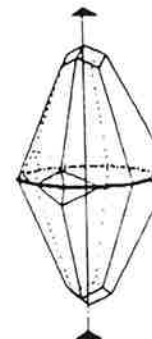
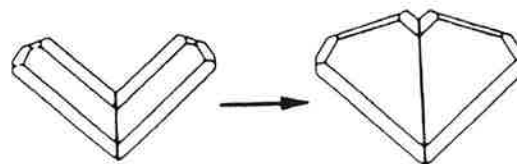
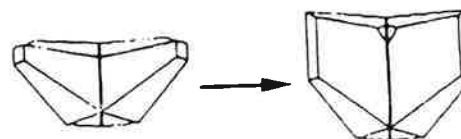
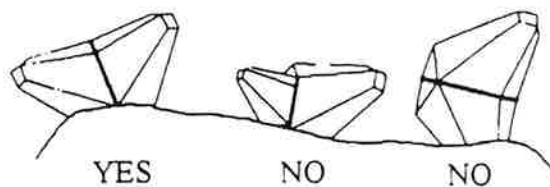
Twin on the basal pinacoid {00.1} are easy to recognize, because they are the only ones for which the twin plane is perpendicular to the c-axes of both halves of the twin, and for which the c-axes are coincident. In other words, these twins are straight, not angled. Small notches typically occur along the twin plane. Habit distortion is minimal and, if present, usually not apparent unless untwinned crystals from the same locality or pocket are available for comparison. Twins on {00.1} are probably the most common calcite twins.

From *The Tumbler* (Oct., 1994)

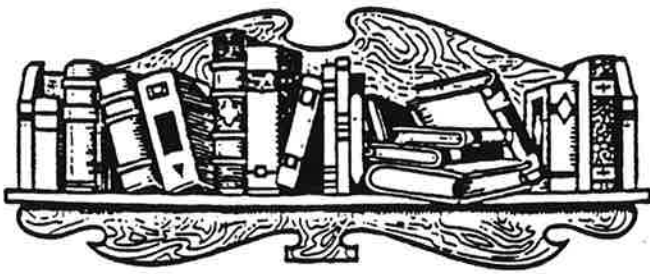


Twin plane, (seen edge on), with twinned crystal.

Symmetry plane of calcite, (seen edge on) cannot be a twin plane.



"It is interesting to note the curious mental attitude of scientists working on 'hopeless' subjects. Contrary to what one might expect, they are all buoyed up by irrepressible optimism. I believe there is a simple explanation of this. Anyone without such optimism simply leaves the field and takes up some other line of work. Only the optimists remain." Francis Crick



FOR FURTHER READING....

Australian geologists have discovered an unconformity which has been uranium-decay dated to 3.46 billion years ago. It is the earliest known example of surface rock on our planet. (An unconformity results from erosion, which involves the earth's surface. Older rocks than this have been found, but they formed under water.)

See *Nature* (June 15, 1995)

Record-breaking lengths of dinosaur tracks have been uncovered in Uzbekistan and Turkmenistan. About 20 megalosaurs tromped along 155 million years ago and left trackways up to 1,020 feet long.

See *Discover* (Dec., 1995)

Chinese paleontologists have suggested that a new fossil they discovered may be brown algae, dating from 1.7 billion years ago.

See *Science* (Oct. 27, 1995)

Fragments of DNA have been extracted from 80-million-year-old bones found in a coal mine in Utah. Parts of the bones were unfossilized, preserving the DNA. Interestingly, the DNA was roughly equidistant from the DNA of reptiles, birds and mammals, and the researcher is "confident they are dinosaur bones."

See *Science* (November 24, 1994)

Editor's note: These findings are being challenged now because the fragments found in the bone also occur in the human genome. Strands of human DNA may have contaminated the fossils.

Orbital changes in the earth have affected climate in regular patterns, which have been useful in dating rocks. However, these dates did not always agree with dates estimated by radioactive decay. Scientists are hard at work trying to reconcile the two systems.

See *Scientific American* (Feb., 1995)

Do chaotic atoms form into crystals by simply rolling into neat rows? Do they bounce randomly until they happen to hit an empty niche? Metal-vapor experiments now indicate that the formation process isn't well understood, because atoms actually have trouble rolling over the edge of the stairstep borders of crystal planes. Also, atoms may sometimes burrow into the lattice, pushing other atoms aside, which doesn't fit the current model.

See *Science News* (Dec. 10, 1994)

Pass the basalt, please. Scientists have found microbes alive in basalt rock layers about 4,500 feet below the earth's surface. They live in an aquifer, drawing carbon out of the carbon dioxide dissolved in the water that seeps down. They also process the rock itself to release hydrogen.

See *Discover* (Mar., 1996)

A fossil feather preserved in amber has been found in central New Jersey. It is the oldest Upper Cretaceous bird evidence yet found in North American terrestrial deposits.

See *Fossil News* (Feb., 1996)

"Well, at least we know 8,000 things that won't work." Thomas Edison, after 8,000 unsuccessful trials to produce a nickel-iron storage battery.

THE HADROSAUR THAT CAME TO TEXAS

By John P. Meyer

The hadrosaur remains found by Dallas Paleontological Society (DPS) members and invertebrate fossil hound Gary Byrd now reside in a drawer in the research lab beneath Dr. Louis Jacobs's office. And thereby, as they say, hangs a tale.

For those unfamiliar with this already famous discovery (it's made several newspapers), a bit of background. For many years, paleontologists have known that hadrosaurs roamed the environs of north Texas in Cretaceous times. Evidence for this includes trackways, bits of bone and teeth. But until the day before Thanksgiving, 1994, no classifiable (by genus) remains had been found. Then the aforementioned *monsieur* Byrd was examining a road cut near Flower Mound when he came upon some rather large pieces of bone. Alerted to the possibility of an important find by long experience in the field and the finely honed instincts of a master bone hunter, Gary removed a bit of the material and took it to the Dallas Museum of Natural History, where DPS member Bill Lowe examined the bone and decided to call on DPS honorary member Dr. Louis Jacobs for further analysis. One of the bones was immediately identified by Southern Methodist University paleontology student Yuong-Nam Lee as the toe knuckle of a hadrosaur.

Further investigation at the road cut turned up the "holy grail"--a skull. (With the skull, dinosaur experts can generally identify the animal's genus.) Since this is the first skull of a hadrosaur ever found in north Texas, great care is being given in analysis, but it appears certain that it represents a heretofore undescribed genus.

It is also one of the oldest hadrosaur fossils found in North America, clocking in at about 95 million years, and was found in the Woodbine Formation. The Woodbine is proving to be one of the most interesting and scientifically important layers in north Texas, with varying facies composed of marine, terrestrial and marginal sediments.

Since Woodbine sediments were laid down during a period of marine regression, by studying the fossils therein we are able to peer through a window into the distant past during a time when large, mobile creatures such as hadrosaurs were extending their range across briefly connected land masses. The hadrosaur fossil in question may represent the remains of a paleopioneer, a true Christopher Columbus of his species.

The specific bones recovered include upper and lower jaw segments as well as some cheekbone and premaxilla material that provide good evidence for the shape of the creature's bill. Unfortunately, the bones are extremely tough as a result of replacement by pyrite and gypsum, so it appears most of the "reconstruction" of this beast will be extrapolative rather than direct. The Dinosaur Society has commissioned SMU paleoartist *extraordinaire* Karen Car to complete an oil painting of the Flower Mound hadrosaur, which has yet to be officially named.

Please note the number of times DPS members have been referenced in the preceding paragraphs. I consider this a compelling testament to the importance of having accomplished amateur (and professional) searchers in the field and in the research lab. Without such enthusiastic support, the science of paleontology would come away woefully lacking.

From *The Fossil Record* (June, 1995)

WANTED! BIOLOGICAL INCLUSIONS

Minerals will sometimes trap and preserve biological materials--entire organisms, cells, or parts of cells--as inclusions. The phenomenon is well known as insects in amber but also occurs in evaporites and other rapidly formed minerals. Nelson Shaffer is conducting investigations of such inclusions. If you know about examples of biological inclusions or have interests in them please contact him at 530 Cabot Ct., Bloomington, IN 47408 or SHAFFER@Indiana.edu.

BOY VISITING MINE FINDS HUGE GEM IN BUCKET OF DIRT!

Fayetteville, N.C. -- Lawrence Shields picked through a bucket of dirt at a commercial gem mine and found an interesting rock.

"I just liked the shape of it," the 10-year-old said.

It turned out to be a 1,061-carat sapphire, one of the state's biggest.

Experts said it is worth thousands of dollars but that its exact value won't be determined until it is cut and polished. Lawrence and his parents say they've been told it could be worth more than \$35,000.



Associated Press (July, 1995)

EXTINCT SHARKS FOUND

More than sixty shark species, whose existence was previously unknown, have been found in soft limestone near Bear Gulch, Montana. They range from one to four feet in length. Many have bizarre shapes. One has a horn on its head. Another has wings similar to a flying fish. The find is even more valuable to paleontologists because of the near perfect fossilization. Because sharks are boneless, little more than teeth are normally found for scientists to study. Tiny shrimp were found in the stomach of one. The sharks lived 300 million years ago in shallow seas that covered most of western North America.

From *Serendipity Gems* (Mar., 1991)

Cleopatra's Needle, the granite obelisk moved to New York City's Central Park, still was covered with readable hieroglyphics on all sides after surviving for about 35 centuries in Egypt. After only about 75 years in New York, the windward side has been almost completely defaced by the chemical pollution in the air.

From *Mineralog* (Aug., 1995)

Friday, Saturday, Sunday
July 26, 27, 28
1996



Midwest Federation Gem & Mineral Show

**Western Hall
Macomb, Illinois
Western Illinois University**

A group of outstanding private collections will be on exhibit

Plus:

- Special lectures and programs each day
- Unusual demonstrations including special casting technique
- Competitive and non-competitive exhibits
- "Hall of States" displays

Public Invited for Three Fun-filled Days

HOUSING INFORMATION

- Olson Hall*, Conference Center (On WIU Campus)
- Argyle State Park (Camping Facilities)
- Spring Lake (Camping Facilities)
- American Host Inn* • Super Eight*
- Holiday Inn* • Pineapple B&B*
- Travel Inn* • Brockway B&B*
- Time Out Motel*

***AIR CONDITIONED**
Housing Reservation form will be included in show packets.

Plan Your Vacation Around Our Date in '96

Sponsored by:
Geodeland Earth Science Clubs, Inc.

For More Information Contact:

Chester Coleman	OR	Charlotte Chamo	OR	Dean Stone
P.O. Box 134		97 Country Elm Estate		625 N. Lafayette
Mt. Pleasant, IA 52641		Galesburg, IL 61401		Macomb, IL 61455