



# NEWSLETTER

of the INDIANA CHAPTER, FRIENDS OF MINERALOGY, INC.

Volume V: No. 5

August 1991

## *500 Earth Sciences Mineral Show Meeting*

**Field trip to the Canadian Shield**

**by  
Harlan H. Roepke**

**4:00 p.m. Saturday, September 7, 1991  
500 Earth Science Club Show  
Hancock County Fairgrounds  
Greenfield, IN**

## **September Meeting and Field Trip Announcement**

We will meet at 4:00 p.m. Saturday, September 7, at the 500 Earth Sciences Mineral Show that is held on the Hancock County 4-H Fairgrounds located on the east side of Greenfield (see map on enclosed flyer). Dr. Hal Roepke will present a program about geology of the Canadian Shield. He will include information about and samples from the Sudbury area. Some researchers think that a large meteorite played a role in forming the Sudbury deposits. This should be especially interesting to those who visited the Kentland Quarry, Indiana's own meteorite impact site, on our July 20 field trip. Some information about that site is enclosed. A short business meeting will follow Dr. Roepke's talk.

Details of a September trip to the Pea Ridge Mine are enclosed. This looks like a really great trip to a new area. Bob Hartup (317-786-1997 or 317-784-1797) or Nelson Shaffer (812-855-2687) must be contacted if you wish to attend this trip. Because of strict company policy we have to be certain not to exceed arranged number of participants.

The Indiana State Museum is holding its annual Fossil and Mineral Day on Saturday, October 26. The Friends of Mineralogy, mainly thanks to Rich and Karen Eddy, have been represented there for several years and I hope we can have some volunteers to set up a display where museum visitors can see, touch, feel, and converse about minerals. For details call Ron Richards at the Indiana State Museum (317-232-1642). Usually specimens are given away at this event so donations of mineral and fossil materials would be welcomed.

Rich Eddy was contacted by a young mineralogy student from Russia. She would like to correspond with mineral collectors from Indiana. Her address is:

Tatyana Petrova  
18 Demakova St. Apt. 192  
Novosibirsk, 630128  
Russia, USSR

Eva Kocsardy, former head of mineral collectors in Hungary, has offered to lead a trip to the outstanding European mineral show in Munich, Germany this November. She could also arrange for some collecting in the area. If anyone is interested please call me at (812) 855-2687. She has also offered to assist with a trip next year. We may want to plan for such a trip next year.

An announcement for the Midwest Federation mineral show at South Bend is enclosed for your information. The Friends of Mineralogy will not have formal activities at this meeting

N. Shaffer, President

#### Minutes - June 22, 1991

The meeting took place at the Monroe County Fairgrounds after the talk by Scott Anderson on identifying gems and minerals.

May's minutes were read and accepted. The treasurer's report noted a deposit of \$111.00 in dues, a refund of \$6.00 in duplicated dues, payment to the National Federation of \$90.00 in dues, giving a new balance of \$458.62, which includes \$26.00 in the development fund. Rich Eddy explained that the development fund originated when we took a display to Chicago and were paid a sum of money for showing it. Since then we have used those funds to pay National dues for any who have a financial hardship and also for honorary members.

Carl Francis sent a request for papers for the Tucson 1992 show. The theme is Pyromorphite.

The new book, "Minerals of Ohio" was shown. Another book on the Minerals of Indiana is in the works.

Shirley Allen talked about showing her own and borrowed minerals at various shows and reported that her exhibit will be at the 1991 Midwest Federation Show and has been requested for a 1992 show.

Hal Roepke sent a request for speakers for the September and November meetings.

Next field trips will be to the Lone Star Cement Quarry and to Kentland. Bob Hartup sent many letters and got lots of refusals. He requested help with finding new field trips. Possible future trips include Pea Ridge, MO; Halls Gap, KY; Kings Mountain and Bassett Quarry, KY.

The next meeting will be held at the Greenfield Indiana Show, September 7. Louella Bond invited us to remain for Ron Richards' talk at 8:00.

The meeting adjourned at 5:50 p.m.

S. Sicree, Secretary

#### Purposes of the Indiana Chapter:

1. To promote interest in and knowledge of mineralogy.
2. To advance mineralogical education.
3. To protect and preserve mineral specimens and promote conservation of mineral localities.
4. To further cooperation between amateur and professional and encourage collection of minerals for educational value.
5. To support publications about mineralogy and about the programs of kindred organizations.

# Kentland Dome an unique, mysterious geological feature

The level prairie-like lands of northwestern Indiana seems like a most unlikely locale for one of the nations most unusual geological sites, but such is the case. In the Newton County Stone Company Quarry east of Kentland and just south of highway 24 is located one of the United States' most perplexing geological mysteries.

During our recent vacation to northern Indiana, my family visited the quarry and was given a most informative tour of the area by David Martin, the very personable and knowledgeable quarry superintendent.

Owned by the Rogers Group of Bloomington, the Newton County quarry is a very modern, safety conscience operation that supplies quality limestone to a large area of northwestern Indiana and neighboring Illinois. This, however, is not what makes the site so interesting.

Exposed in the Newton County Stone Quarry is rock that should be at least 1,500 feet beneath the surface. These Ordovician and Silurian Age rocks which should be sequestered deep within the earth are exposed in a square mile area. It is surrounded by much younger rocks of the Mississippian Age which are where they should be, on top.

Can you imagine the power it should take to lift a square mile of rock, 1,500 feet and tilt it into a vertical, rather than its normal horizontal, position. It does indeed boggle the mind.

Over the years several explanations have been given to explain this phenomenon. One is that it is the manifestation of a major fault system that perhaps extends under this segment of Indiana.

Another theory is a prism of the earth's crust rose above the neighboring younger strata, perhaps from an aborted volcanic plug. It then squeezed a mass of magma upward much as one would a tube of



## Nature trails

Harold Allison

Herald-Times  
8/11/91

imentary rock to the top, where the younger rock was then eroded away by the action of the glacier that once covered most of northern Indiana.

The theory most widely accepted is a large meteorite was able to enter the earth's atmosphere, and traveling at a great velocity, crashed into the ground. The impact of such a collusion would produce a gigantic explosion, and quite probably could move a square mile of rock upward 1,500 feet.

Rarick and DeWolf in a March 1967 issue of *Outdoor Indiana* issued a statement that applies as much today as it did in '67. "Although most Indiana geology is fairly straight forward and relatively easy to explain, no one knows what caused the rock formation to be disrupted in the Kentland area."

The Kentland Dome, also called the Kentland Structural Anomaly, and the Kentland Impact Crater-or is indeed an anomaly and we may never know for certain what caused this unique geological event. However, Coesite, an uncommon mineral formed when meteorites strike the earth, has been found at the quarry, perhaps giving the meteorite theory more credence. Still no trace of a meteor has been found and present quarrying operations may never go deep enough to find it, if indeed one is buried deep under the now tranquil Hoosier countryside.

Group tours of the Newton County Quarry can be arranged by contacting David Martin at P.O. Box 147, Kentland, Indiana 47951, or by calling 219-474-5125. This site is in-

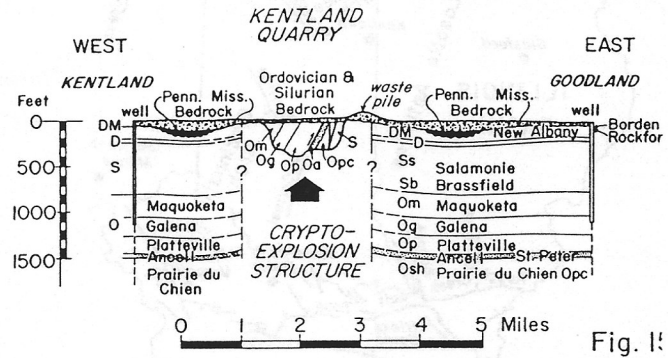


Fig. 1

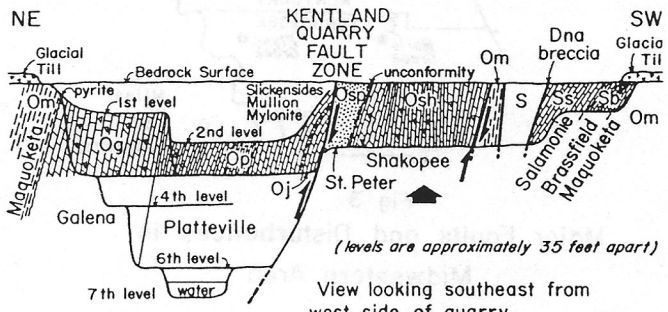
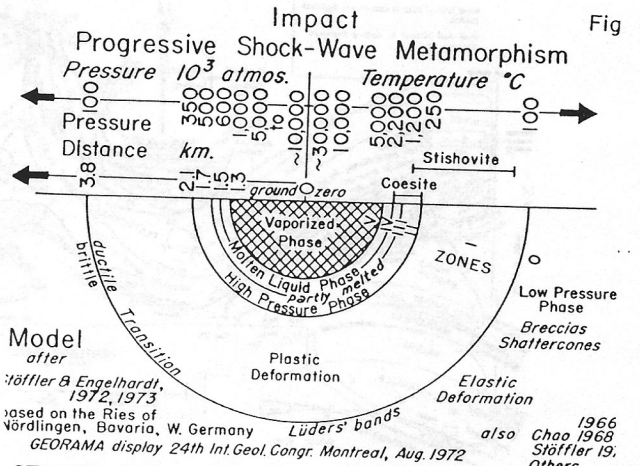


Fig. 1

no vertical exaggeration SCALE 0 100 200 300 400 500 Feet  
N.D. 10-70 Gutschic 11-72



Fig

STAGES	PRODUCTS	EXAMPLES	Peak Pres (kb)	Post-shock T. °C
5	Vapor phase Silicate	Boiling point of the rock melt	> 800	> 3000°
4	Liquid phase Total Melt	Rock melts with Lechatelierite (fused quartz)	600	1500°
3	High Pressure phases a Partial Melt glass	Coesite (SiO <sub>2</sub> ) in glassy quartz and fused-feldspar vesicular	550	1300°
2	High Pressure phases diaplectic glass	Unfused quartz and feldspar (Maskelynite) glasses (solid state)	450	900°
1	High and Low Pressure ductile phases diaplectic crystals	Quartz and feldspar with planar elements lamellae	300	350°
0	Low Pressure phases brittle normal crystals	Breccias, Shatter-cones, kinked micas	100	100°

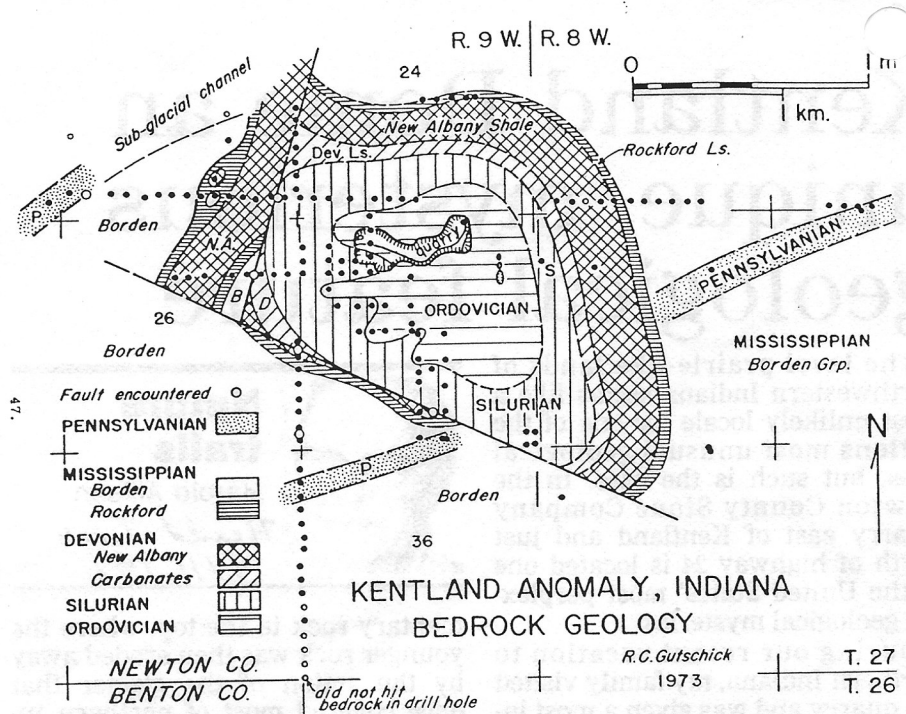
density within shock front → post shock density →



Fig. 3

Major Faults and Disturbances in Midwestern Area

A.A.P.G. Mem. 15, 1971



GUTSCHICK

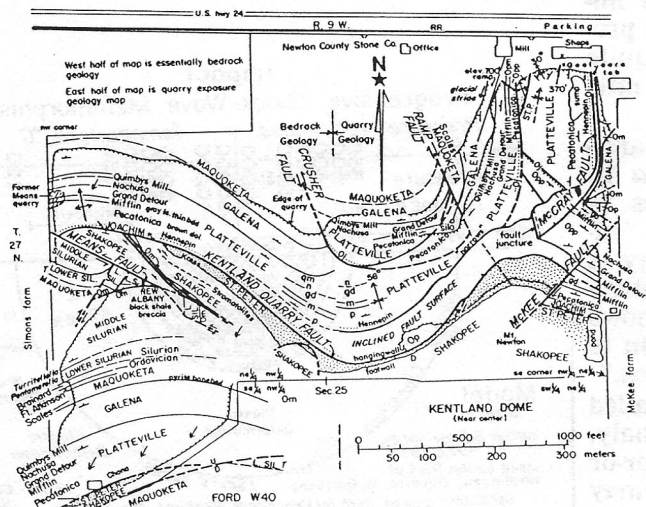


Fig. 7. Geologic map of Kentland Quarry and Ford W40 southwest extension. West half of map was mapped from air photos and plane table-alidade methods on stripped bedrock surface. East half is based on intersection of levels of the quarry floor. Central part of dome is directly south of east half of quarry. Glacial striae are shown by arrows. (See figure 4 for stratigraphic column.)

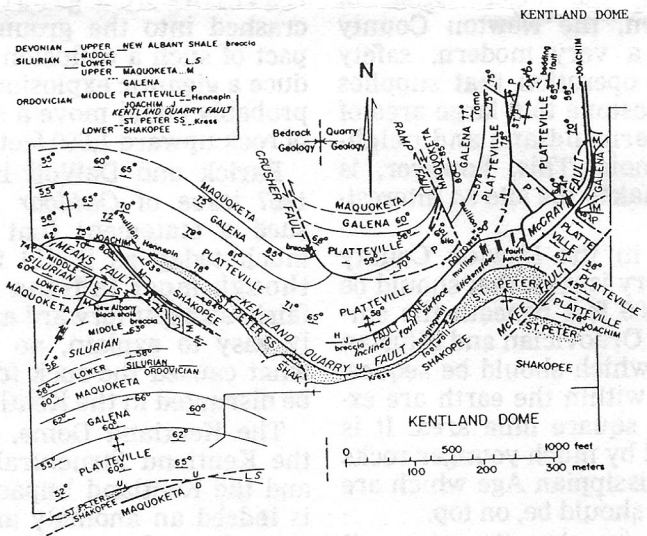


Fig. 8. Geologic structure map of Kentland quarry focusing on fault pattern, attitude of strata, and other structural details. Pattern in west half of map is from stripped bedrock surface; that in east half of map projected from quarry walls to quarry floor, especially the inclined Kentland Quarry and McCray Faults.

## GEOLOGY OF THE KENTLAND DOME STRUCTURALLY COMPLEX ANOMALY, NORTHWESTERN INDIANA (FIELD TRIP 5)

RAYMOND C. GUTSCHICK  
University of Notre Dame, Notre Dame, Indiana

PEA RIDGE IRON ORE CO., INC.

SULLIVAN, MO.

FRIDAY SEPTEMBER 20, 1991 - 8:00 A.M.

I am sorry that this trip has to be during the week, but it could not be helped. This mine, as with most, is not open on the week-ends and it is impossible to get permission to visit a site that is closed. So I hope with this advanced notice at least some of you will be able to make arrangements to come. There may or may not be some other trips slipped in before this one, but at least you will be aware of this trip for making your plans to quit your jobs or whatever other arrangements you may need to make.

I DO NOT WANT THE EMBARRASSMENT OF ANOTHER DOE RUN SITUATION!! IF WE ARE GOING TO HAVE MORE THAN THE 20 PEOPLE THAT I WARNED THEM ABOUT, WE NEED TO KNOW IT BEFORE HAND!! OTHER WISE THE EXTRAS WILL HAVE TO BE TURNED AWAY. WE WERE SIMPLY LUCKY AT DOE RUN AND THE PEOPLE BENT THE RULES AND ALLOWED THE EXTRA OVERFLOW TO VISIT ALSO.

FOR THIS TRIP ONLY PLEASE CALL OR WRITE TO NELSON OR MYSELF ON OR BEFORE SEPT. 14, 1991, TO LET US KNOW HOW MANY OF YOU ARE COMING. MOST OF THESE MINE PEOPLE ALREADY KNOW THAT I AM A LITTLE DUMB, BUT I SURE DO NOT WANT THEM TO THINK THAT I CAN'T COUNT. THANK YOU FOR YOUR COOPERATION.

*REQUIRED EQUIPMENT TO BRING WITH YOU:*

Hard Hats, Safety Glasses, Water Proof Boots (hard toe if possible), and try to bring a belt for other equipment to hang on.

*THE MINE WILL PROVIDE:*

Lamps, safety equipment, belts to those who do not have them, and the other required safety stuff for under ground visits.

*PAPER WORK:*

Call your reservation for the visit into me or Nelson.

Upon arrival at the mine you need to sign a release or hold harmless agreement.

*LOCAL ACCOMMODATIONS:*

There are several hotels in the area, here are the ones that I called:

Super 8 - 314-468-8076 Sullivan, Mo.

Best Western - 314-468-3136 or 800-528-1234 Sullivan, Mo.

Super 8 - 1 bed room \$37.88 - 2 bed room \$38.88

Best Western- 1 person one bed- \$27.00, 2 persons one bed \$38.88

*DIRECTIONS FOR TRAVEL:*

Take I-44 from St. Louis, to the Sullivan exit (1st eastern exit), Rt. ramp overpass left to Hyw# 185 South. Then thru St. Park and over the Merrimack River 12 miles to County Rd. EE (that is double E).

You will see the Pea Ridge sign - DO NOT take the gravel road! County Road EE is a blacktop road. Go two (2) miles to the mine entrance- go straight in do not turn. Refer to Nelsons' map attachment.

The mine is located about 65 miles from St. Louis, Mo.

*MINERALS SAID TO BE IN THE AREA:*

Mr. Roberts told me that the following minerals and deposits have been found in and around the mine:

The area has 4 volcanic flows each with its' own intrusions and hydrothermal deposits.

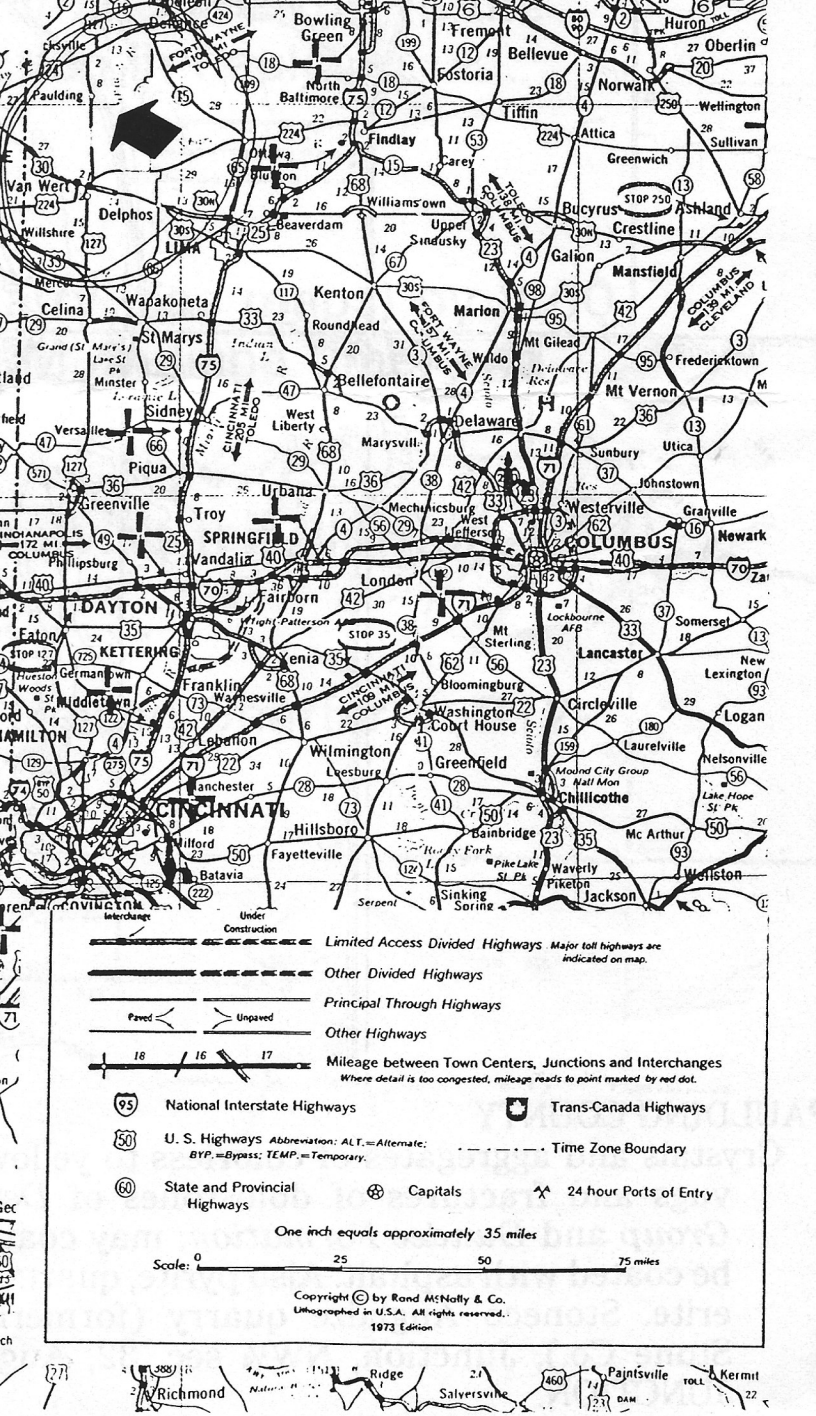
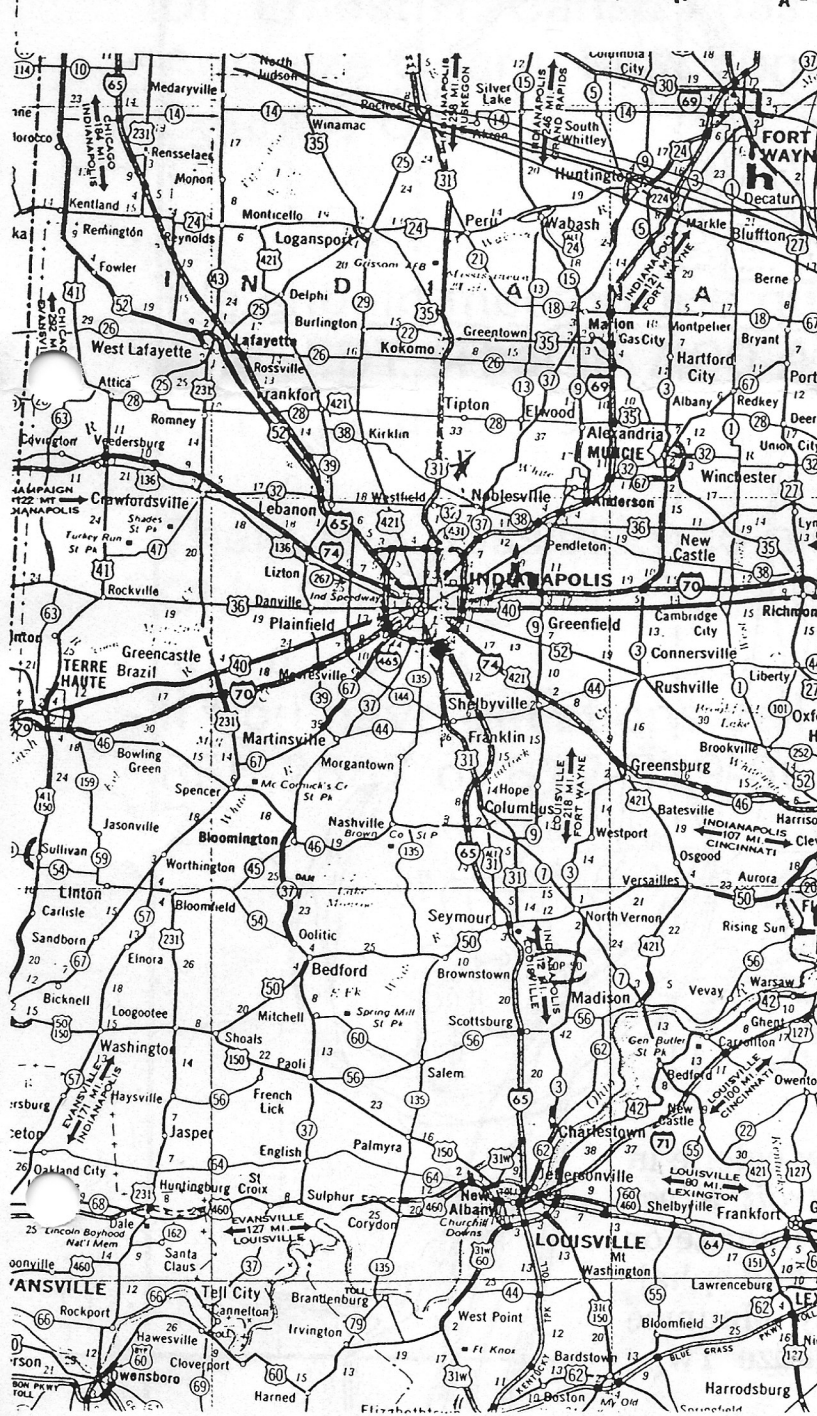
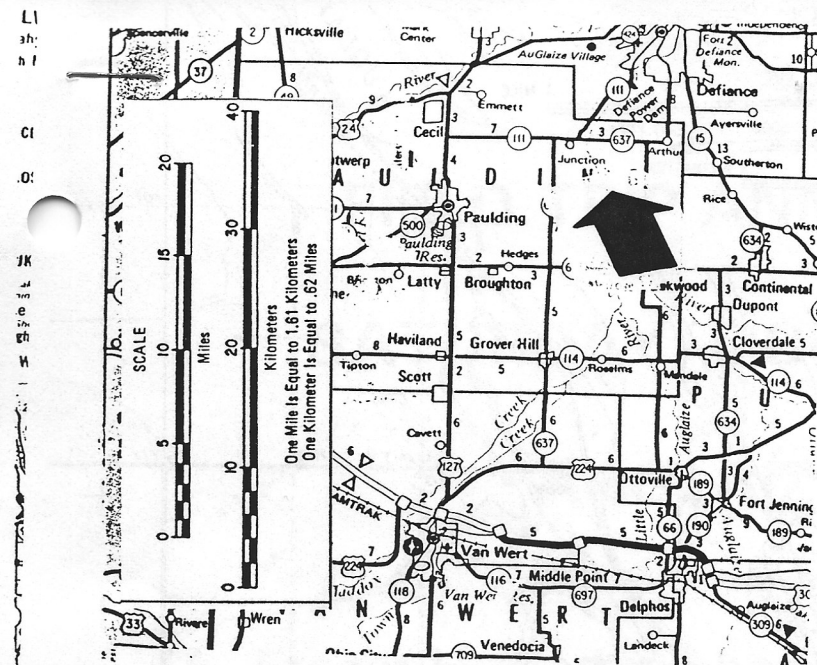
Magnetite, Hematite, Pyrite (massive and small xls.), Fluorspar, Calcite, Apatite (small xls.), Rhyolite Porphyry ( 4 types), Brechiopipes, Hydroxides, Oxides, Gold, Silver, Tin, and Rare Earth minerals.

Well I hope to see you there! Don't forget to make your reservations at one of the local Hotels.

We will be on the look out for other places in the area for Saturday hunting. Please let us know if any of you know of places to collect in the area.

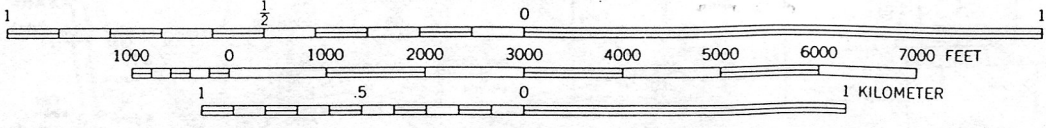
Sincerely,

Bob Hartup, V.P. Field Trips  
Friends of Mineralogy  
Ind Chapter

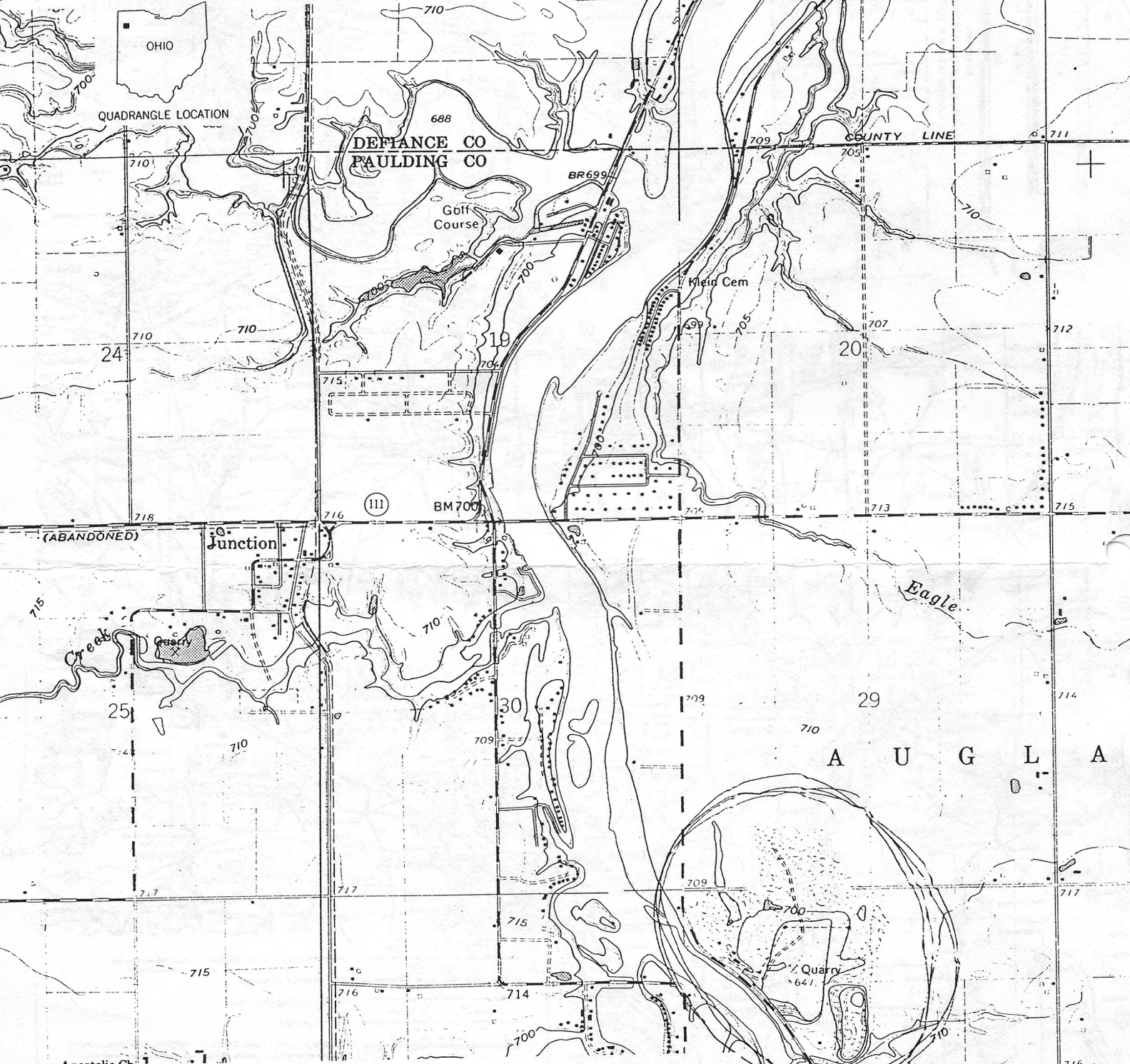


- Limited Access Divided Highways Major toll highways are indicated on map.
  - Other Divided Highways
  - Principal Through Highways
  - Other Highways
  - Mileage between Town Centers, Junctions and Interchanges Where detail is too congested, mileage reads to point marked by red dot.
  - National Interstate Highways
  - U.S. Highways Abbreviation: ALT. = Alternate; B.Y.P. = Bypass; TEMP. = Temporary.
  - State and Provincial Highways
  - Trans-Canada Highways
  - Capitals
  - 24 hour Ports of Entry
  - Time Zone Boundary
- One inch equals approximately 35 miles
- Scale: 0 25 50 75 miles
- Copyright © by Rand McNally & Co. Lithographed in U.S.A. All rights reserved. 1973 Edition

SCALE 1:24 000



CONTOUR INTERVAL 5 FEET  
DATUM IS MEAN SEA LEVEL



PAULDING COUNTY

Crystals and aggregates of colorless to yellow calcite in vugs and fractures of dolostones of *Detroit River Group* and *Dundee Formation*; may coat fluorite or be coated with asphalt. Also pyrite, quartz, and sphalerite. Stoneco Auglaize quarry (formerly Maumee Stone Co.), Junction, NW¼ sec. 32, Auglaize Twp.; JUNCTION.



**FIELD TRIP ANNOUNCEMENT**  
**SATURDAY, OCTOBER 5, 1991**  
**AUGLAIZE, OHIO**

Dr. Ernest H. Carlson has arranged a trip to the Auglaize Quarry near Junction in Paulding County, Ohio.

We should meet at the quarry (see maps) by 8:00 A.M. EDT (That is 7:00 A.M. Indiana time) and can stay until noon.

There is a possibility to also visit the Bluffton, Ohio Quarry.

If you have questions call Nelson Shaffer at 812-855-2687 or 812-339-6623.