

**T H E**



**J A S P I L I T E**

APR 20 1980

Affiliated with the Midwest Federation  
of Mineralogical and Geological Societies

THE JASPILITE

OFFICIAL PUBLICATION  
of the  
ISHPEMING ROCK AND MINERAL CLUB, INC.  
Published Quarterly

OFFICERS AND COMMITTEES

President	Olive Sain, 818 West Kaye, Marquette 49855	226-7325
First Vice President	Bruce Spike, 197 Midway Drive, Negaunee 49866	226-3933
Second Vice President	Michael Elliott, 632 N. Fourth, Ishpeming 49849	485-6237
Secretary	Laurence Sain, 818 West Kaye, Marquette 49855	226-7325
Treasurer	Arnold Mulzer, 322 Rock Street, Marquette 49855	226-2321
Liaison Officer	Robert Phillips, 405 South Rose, Ishpeming 49849	486-8308
Exchange Bulletin Editor-	Helen Johnson, 1962 West Fair, Marquette 49855	228-9422
JASPILITE Co-Editors	Helen Johnson and Dorothy Tubbs	
Publisher	Ernest Johnson	
Publicity	Bruce Spike	
Membership	Michael Elliott	
Finance	R. R. Anderson	
Field Trip	Bruce Spike and Michael Elliott	
Safety	Leonard Bartelli	
Curator	C. R. Markert	
Scholarship	Laurence Sain, Frazier Tubbs, Ingrid Bartelli, Arndd Mulzer	
Hostesses	Marie Spike and Marjorie Ogea	
Librarian	Ernest Johnson	
Hospitality	Lilly Johnson	
Special Educational Project Committee	Sally Ahrndt, Hazel Kaukola, George Ruuska, R. R. Anderson	
1980 Swap Chairmen	Robert Phillips and Michael Elliott	

MEETINGS: Business Meeting: 1st Friday of the month, 7:30 p.m., at Bothwell Middle School, Marquette (1st Thursday evening June-September)  
 Program & Activity Meeting: 3rd Sunday of the month at 2:00 p.m., Bothwell Middle School, October through April. Field Trips during the summer months.

MEMBERSHIP: The Ishpeming Rock and Mineral Club, Inc. is open to anyone interested in the Earth Sciences.

- Initiation Fee . . . . . \$1.50
- Husband & Wife Annual Dues . 3.00
- Adult Annual Dues. . . . . 2.00
- Junior Annual Dues . . . . . 1.00

OUR PURPOSE

To enjoy, to learn, to teach and to conserve  
 The rocks, the gems, the fossils and ores.  
 To collect, to admire, to brag and to show  
 The material we've found, we'll trade for yours.

- Bob and Marian Markert

Deadlines for JASPILITE: January 1, April 1, July 1, and October 1  
 Material in this bulletin may be copied provided full credit is given to the author and the bulletin. Send all exchange bulletins and related material to Exchange Bulletin Editor.



ROCK and MINERAL CLUB

*Fifth Annual Upper Peninsula*

# ROCK SWAP

*August 9-1980 9:00 am to 6:00 pm*

*Marquette Tourist Park County Road 550*

*Admission To Swap: Donation To Silent Auction.*

# FIELD TRIP

*August 10*

*Hard Hats & Safety Glasses A Must On Field Trip*

\*\*\*\*\*

\* \* \* \* \*

FOR MORE INFORMATION CONTACT:

\* \* \* \* \*

\* Mr. Robert Phillips phone: 906-

\* 405 S. Rose St. 486 8308

\* Ishpeming, Mi. 49849

\* \* \* \* \*

\* Mr. Michael Elliott

\* 632 N. Fourth St.

\* Ishpeming, Mi. 49849

\* \* \* \* \*

\*\*\*\*\*

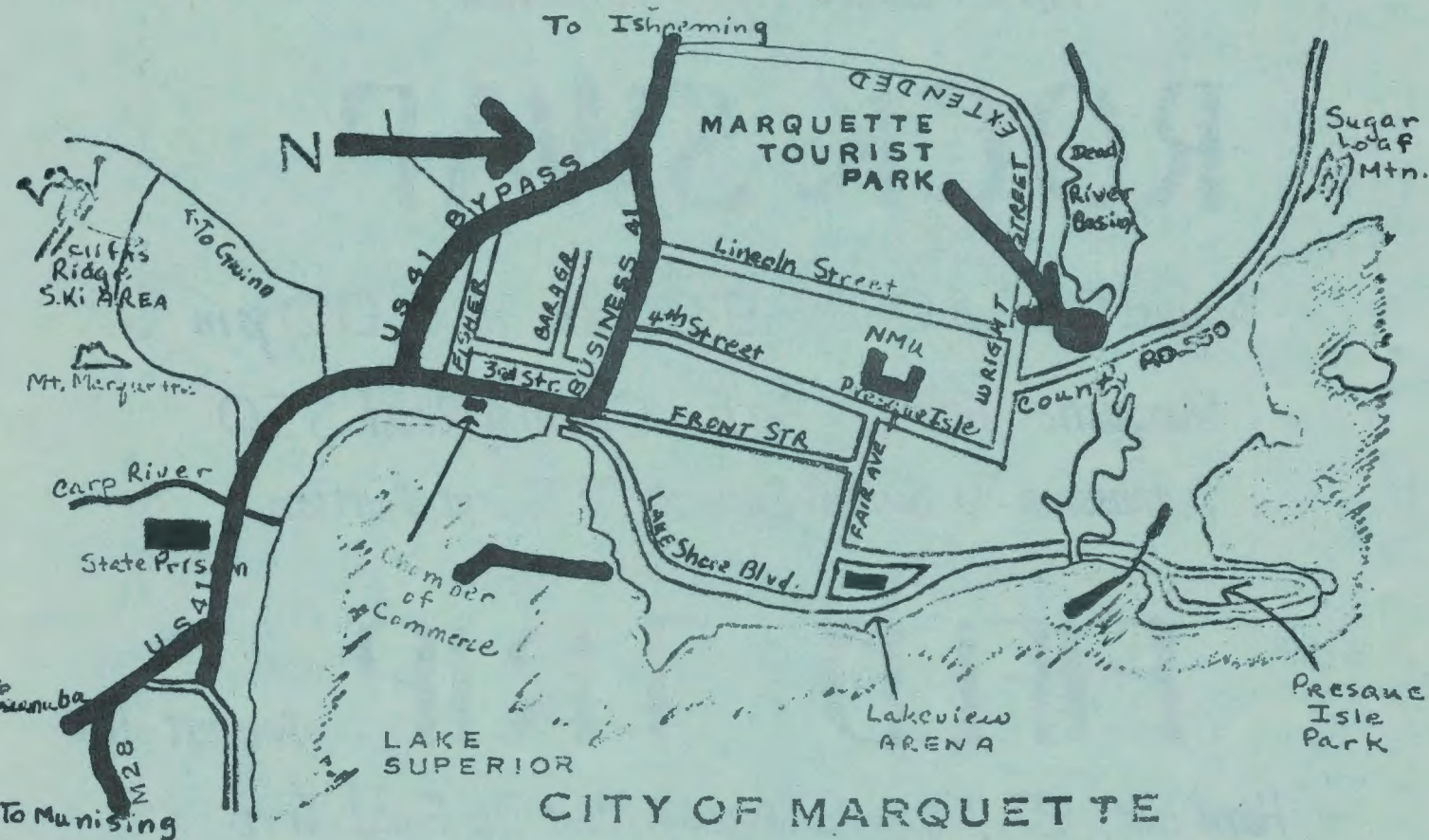
*silent auction  
door prizes  
refreshments*

*swapping  
"cracker barrel"  
saturday evening*

**NO SELLING !!!**

\*\*\*\*\*

<p>* * *           Rock Swap * *           Saturday, August 9 * *           9:00 AM to 6:00 PM * * * Set up your own table, or swap from the * trunk of your car. * * * *****</p>	<p>* * *           Camping * * *           Campsites available nearby ... Fee * charged * * ***** *           All pets must be on a leash or confined * to owner's quarters ***** *           Motel accommodations available in * Marquette * *****</p>
---	---



\*\*\*\*\*

<p>* *           Refreshment stand available from 9 to 6 * on Saturday ***** * *           Exchange ideas ... Ask questions ... * Meet fellow rockhounds ... * *           Cracker Barrel Session at Swap site at * 7:00 P.M., Saturday. * Refreshments will be served. * *****</p>	<p>* * *           Field Trip * * *           Field trip will be held on Sunday, * August 10, starting from the Marquette * Tourist Park at 1:00 P.M. * *           Collecting sites to be announced at Rock * Swap. * *           Sign up for Field Trip at the Rock Swap * on Saturday. * *****</p>
---	---

# Midwest Federations NEWSLETTER

Published monthly except July and August as a service to member clubs. All news, articles, subscription orders and requests for information should be sent to the Editor, Haydon Peterson, Parrot Printing, 2125 Forest Ave., Des Moines, Iowa 50311

**PRESIDENT**  
Mrs. Bernice McCloskey  
P.O. Box 527  
Elm Grove, WI 53122

**FIRST VICE PRESIDENT**  
Milford J. Sharp  
3901 West 210th St.  
Fairview Park, OH 44128

**SECOND VICE PRESIDENT**  
Larry Nawojski  
22757 Redwood Drive  
Richton Park, IL 60471

**SECRETARY**  
Miss Jean Reynolds  
107 Tuttle Avenue  
Clarendon Hills, IL 60514

**TREASURER**  
William Parch  
Oakdale, WI 54649



February 1980 - Issue No 201

## MIDWEST COMMITTEES ARE READY TO HELP YOU

By Bernice McCloskey, MWF President

Help is just a postage stamp away. We have some real treasures in the MWF permanent committees waiting to be discovered by those who think they're up the proverbial creek!

To highlight just one, our Mineralogy Committee is chaired by Paul Clifford. Paul is also Associate Curator of Mineralogy for the Cleveland Museum of Natural History. This committee will help clubs establish study groups, help members learn to identify minerals, help members learn the professional way to collect and catalog minerals, clean and display minerals, etc. If you or your club need help in mineralogy, beyond that which is available locally, contact Paul Clifford, Wade Oval, University Circle, Cleveland, OH 44106 for advice and direction.

Archaeology, Geology, Lapidary, Paleontology... there are committees to cover almost anything you want to know. Get in touch with your State Director or Assistant, or the particular committee chairman for information. Names and addresses are in the MWF Directory.

As you know, each club receives two free copies of the Midwest Directory each year. In addition, we hope members will order their own copies. This is an indispensable source of information and a super bargain.

Congratulations to all new club presidents. As one of your first duties, would you be sure your club has returned the completed information sheet and dues to Secretary Jean Reynolds.

## HAS YOUR CLUB FILLED OUT ALL AMERICAN AWARDS FORM?

Every Midwest club should be proud to take part in the All American competition of AFMS, which picks the outstanding clubs of Midwest and the AFMS for the past club year. Your club has a form to fill out, and should have a chairman to fill it out and mail it in. Deadline is March 31.

Your club could pick up a trophy or two at the National Gem Show in Lincoln, Nebraska next June. You know you have a good club, a very special organization of enthusiastic, dedicated people. We want to hear about it too.

Help your chairman fill out that important All American-Merit Award form and mail it to me soon. Your club will be honored for its work with the community, for its cooperation with other clubs, for what it does for its members, and for its contributions to earth science and the lapidary arts.

This excellent program of honoring prestigious clubs, originated in the Midwest, and the Midwest has been a constant leader. If you can't find your entry form please write me. The Judges will be announced soon. -Midwest All American Regional Chairman, June Zeitner, (winter address) 2205 S. Hwy 281, Edinburg, TX 78539.

To all of you, thanks for the club bulletins, the invitations, cards and letters. I appreciate every one, and it reminds me again that rockhounds are really special people!

I-80 ALL THE WAY TO LINCOLN, NEBRASKA IN '80 FOR THE NATIONAL/MIDWEST SHOW

## MINERAL NAMED FOR MACFALL

Fewer than 3,000 mineral species are known of which perhaps about 1,100 bear the names of persons. Minerals are usually named by the scientist who discovers them, and the name must be approved by an international commission and by publication of the data in a recognized magazine. All this introduction leads up to the fact that a mineral has recently been named for an amateur, a former editor of this American Federation Newsletter, Russell P. MacFall.

*Macfallite*, identified by Dr. Paul B. Moore of the University of Chicago, as a new species, is one of several calcium manganese silicates found in basalt in Keweenaw county, Mich., the famous Michigan Copper Country. It is found as reddish brown needles often in the form of a radiating rosette. MacFall has been a collector of minerals in the Michigan copper mines for many years and is making a detailed study of them.

*(MacFall is the author of the popular "Books" column appearing in the AFMS monthly Newsletter. He is also a Past President of our Midwest Federation. He formerly lived in Evanston, Ill. before moving recently to Coronado, California and was an associate editor of the Chicago Tribune before his retirement.)*

## OUR FOREIGN MINERAL DEPENDENCE

By June Zeitner

Our highest rate of dependence for industrial minerals from other nations is in diamond. We import 100% of the natural diamond we use. We also import 98% of our manganese needs, 97% of our required cobalt, 93% of the bauxite, and 92% of the chrome. Our platinum imports have risen to 91% and asbestos to 84%. We import 81% of our tin consumption, 77% of the nickel and 62% of the zinc. Other countries supply us with 61% of our potash need, 57% of our mercury and 54% of our gold supply. Tungsten stands at 50%. A few minerals take less than half of our annual consumption from foreign sources. Among them are silver, gypsum, iron and salt. Most of the coal we use is our own.

Most of our limestone, dimension stone, granite, sand and gravel is produced in this country and used locally, as far as possible.

In this country 90% of the mineral production is on the so-called "public lands" of the western states. Less than .02% of our public lands has been used for mining. Some of our most promising sites for mineral development have been withdrawn from the use of the nation by the "wilderness" programs.

In 1950 we were dependent on others for only four of our vital minerals. Now that dependency has almost tripled.

We have in our nation vast reserves of coal, uranium, oil, iron, manganese, copper, lead, zinc, mica, feldspar, beryl, bauxite, fluorite, asbestos, and many other minerals. Many of our huge deposits in Alaska are untapped.

In seven years the cost of our foreign minerals has risen from 10 billion to 64 billion dollars. Gold, silver, diamond, platinum and oil are rising in price at an alarming rate.

A new policy on natural resources is now a national priority.

## NATIONAL SHOW PLANS TAKING SHAPE

Roger Pabian, President of the Lincoln Gem and Mineral Society and Publicity Director of the combined AFMS-Midwest Federation show, June 12-15, reports plans are taking shape.

Dealer spaces are rapidly filling up, competitive and regular displays are being scheduled, speakers, programs and other aspects of the show are being set.

Complete information will be published in this Newsletter in coming months.

# Midwest Federations NEWSLETTER

Published montly except July and August as a service to member clubs. All news, articles, subscription orders and requests for information should be sent to the Editor, Haydon Peterson, Parrot Printing, 2125 Forest Ave., Des Moines, Iowa 50311

## PRESIDENT

Mrs. Bernice McCloskey  
P.O.Box 527  
Elm Grove, WI 53122

## FIRST VICE PRESIDENT

Milford J. Sharp  
3901 West 210th St.  
Fairview Park, OH 44126

## SECOND VICE PRESIDENT

Larry Nawojski  
22757 Redwood Drive  
Richton Park, IL 60471

## SECRETARY

Miss Jean Reynolds  
107 Tuttle Avenue  
Clarendon Hills, IL 60514

## TREASURER

William Parch  
Oakdale, WI 54649



March 1980 - Issue No. 202

## AFMS SHOW NEWS

### HARRIET GEORGE NAMED COMPETITIVE EXHIBIT COORDINATOR

Harriet George, Naperville, Ill. will coordinate efforts to obtain an extensive slate of competitive exhibitors for the 1980 combined AFMS-Midwest show and convention to be held at the Bob Devaney Sports Complex, Lincoln, Neb., June 12-15.

Judging will be based on the new 5th edition American Federation Uniform Rules, available from Show Chairman, 1980 National Gem and Mineral Show, Lincoln Gem and Mineral Club, Box 5342, Lincoln, NE 68505. Copies are also available from many club Secretaries.

All entries for competition, and requests for entry blanks, should be sent to Harriet George, Competition Director, 5 S 144 Webster, Naperville, IL 60540.

\* \* \* \*

There will be 5,000 parking spaces at the AFMS show grounds. Both wet and dry camping spaces will be available on the show grounds.

## JUDGES CHOSEN FOR ALL AMERICAN-MERIT AWARDS

By June Zeitner

I am glad to announce that the very able judging team for the 1979 All-American-Merit Awards program of AFMS and Midwest is from Wisconsin, the home state of Midwest President, Bernice McCloskey and Treasurer, Bill Parch. With Fred Bermke, State Director for Wisconsin as chairman, the committee also includes Dr. Katherine Nelson, Harry Pease, Margaret Pearson and Edward Wilder.

The job of judging all the entries of the Midwest, has been a major one, both because the Midwest clubs send in so many entries, and because most of the entries are so excellent. The entries are the club histories of the previous year, with trophies being awarded to clubs of unusual accomplishments.

Fred Bermke, a member of the award winning Wisconsin Geological Society and the Kettle Moraine Geological Society has been President and Director of Wisconsin Geological, show chairman, judging chairman and Midwest delegate. Fred and his wife Evelyn won the AFMS Educational Trophy in 1975 and have exhibited at many shows in competition and in the special section. Fred was chairman of Wisconsin Geological Societies All American entry committee the year that club won the All American top award for the nation.

Dr. Katherine Nelson, Curator of the Greene Museum of the University of Wisconsin, and Geology Professor, was given the Neil Miner Award in 1978 as the most outstanding Geology Teacher of the Year in the United States. A 40 year member of the Wisconsin Geological Society, Dr. Nelson has held all the offices of the Society and is an honorary member. She has been a member of the Midwest Executive Committee, serving many years on the Paleontological committee.

Harry Pease, of the Kettle Moraine Geological Society has been Science Editor of the Milwaukee Journal for twenty years. He is also an editor of the magazine section "Insight" which every Sunday carries articles of scientific interest, and, with the Milwaukee Journal, is an award winning publication. A participant in the Milwaukee Public Museum Dinosaur Dig in Montana in 1978. Pease has written and lectured about this interesting project.

Margaret Pearson, a member of Wisconsin Geological Soc-

*Judges... Continued on other side*

## ENVIRONMENTALLY SPEAKING... IN THE MIDWEST

By John Boland  
MWF Environmental Committee

The Toxic Substances Control Act (TSCA) became effective in 1979 to control industrial disposal of harmful waste. The MWF membership, 16,000 strong, is greater than most industrial plant size. Every little bit counts. Dispose of lapidary and silver-smithing waste in landfills where leachate is monitored for many years.

## SECOND ANNUAL FOSSIL EXPOSITION SCHEDULED FOR MARCH 22-23

The Mid America Paleontology Society (MAPS) is hosting the Second Annual National Fossil Exposition, March 22-23, Tanner Hall on the campus of Western Illinois University, Macomb, Illinois.

Exposition II will feature the displaying, trading, and selling of fossils from all over the world. MAPS members from outside the U.S. have also indicated they will be in attendance.

For information on displaying or swapping fossils, contact Don Good, 410 Northwest 3rd Street, Aledo, IL 61231.

\* \* \* \*

During the past year, MAPS has continued to grow and attract a wider membership. The society now has over 200 members from 11 countries. Meetings with a speaker are held at the Fryxell Museum, Augustana College, Rock Island, Illinois on the first Saturday of the month at 2:00 P.M., October through May. During the summer, field trips are held in some very interesting locations throughout the Midwest. Speakers during the past year have demonstrated how to find, clean and identify fossils as well as lectures on trilobites and crinoids just to name a few.

Judges... Continued from front side

ity, is interested in geology, paleontology and archeology. Active in the annual gem shows, Margaret has been official show photographer for the past two years. She is Editor of The Trilobite, the fine bulletin of the Society. Margaret is on the Geology Committee of the Midwest Federation.

Edward Wilder is a charter member of the Racine Geological Society and has been president of that club and served in other offices and as chairman of many committees. He has exhibited in many club and Federation shows. He is the "Lapidary Artist in Residence" at the Wustum Museum of Racine, and lectures on geology to many groups. He is a competitive display judge, and was recently appointed Assistant State Director of Wisconsin.

---

## CHICAGO AREA SELECTED FOR SPRING EXECUTIVE MEETING

President Bernice McCloskey has announced the Spring Executive Meeting of the Midwest Federation will be held in the Chicago area on Saturday, March 29. Complete information will be mailed to officers and committee chairman by the Secretary, Jean Reynolds.

---

## MAKE COPIES OF THIS NEWSLETTER AVAILABLE TO YOUR MEMBERS

You can have copies of this Newsletter to include in your monthly bulletin or to distribute to your members at monthly meetings at a very low, cost price.

AT only 2¢ per copy, plus shipping cost, these copies will be shipped to you each month. You can order as few months or as many months as you wish. An order blank is included in the Directory. If you do not have a Directory, address a request for an order blank, Parrot Printing, 2125 Forest Ave., Des Moines, Iowa 50311.

Order NOW and let your members enjoy the monthly Newsletters!



TABLE OF CONTENTS

President's Message . . . . .	1	Labradorite, Moonstone, Larvikite . .	6
IRMC Meetings & Events . . . . .	1	Micromounters' Meeting . . . . .	7
Notes from Secretary's Minutes . .	2	Collection for Sandy Knoll School . .	7
Let's Take a Field Trip . . . . .	3	Illustrations of Fossils . . . . .	8
Slate: Carving & Scribing . . . . .	5	Code of Ethics . . . . .	10
		1980 Membership List . . . . .	11

\*\*\*\*\*

THE PRESIDENT'S CORNER

Dear Club Members:

It is indeed gratifying to have your full support in all the club's endeavors. Thank you one and all who have taken a responsibility on a committee, special project or for the routine affairs of the club.

We will all be heading for collecting sites sometime next month; with that we must keep in mind safety rules and regulations as well as the asking of permission for collecting privileges in many locations. Our field trip guides, Bruce Spike and Michael Elliott, have planned many interesting trips for the summer. (I refer you to the January, 1980 issue of the JASPILITE.) Keep that issue of the bulletin for ready reference.

This issue of the JASPILITE will contain our membership list. If you want to get the most from it staple it to the January issue and keep it with your telephone directory.

August 9 and 10 are the days for our Swap and Field Trips. For you who work (for wages) save these as vacation days so you can join in the fun, festivities and work.

I don't like to sound mercenary, but it does cost "money", too, to operate any organization for higher level dues, publicity, bulletin, scholarships, postage, stationery, etc. Our membership dues do not cover the costs. Only the special events to which we all donate bring in the difference to keep us operating in the black. This is why your wholehearted support is needed in the future as well as now.

- Olive Sain

\*\*\*\*\*

IRMC MEETINGS AND EVENTS

May 2	7:30 p.m.	Business Meeting
May 18	9:00 a.m.	Field Trip and Sightseeing to Fayette State Park & Garden Peninsula
June 5	7:30 p.m.	Business Meeting (NOTE CHANGE TO THURSDAY EVENING)
June 14	9:00 a.m.	Field Trip to Republic Mine Pit
July 1		DEADLINE FOR NEXT ISSUE OF THE JASPILITE
July 3	7:30 p.m.	Business Meeting (Thursday evening, again)
July 20	9:00 a.m.	Field Trip to Daggett area
August 7	7:30 p.m.	Business Meeting (Thursday evening)
August 9, 10		ANNUAL IRMC ROCK SWAP AND FIELD TRIP

\*\*\*\*\*

TO SAVE GASOLINE LET'S DOUBLE-UP AND SHARE RIDES ON FIELD TRIPS!!

## NOTES FROM THE SECRETARY'S MINUTES

by Laurence Sain

JANUARY 4, 1980 - Business Meeting

Frazier Tubbs has been elected to serve on the Carp River Forge Association.  
 Memorial Day weekend field trip to be headquartered at Hancock City Campgrounds.  
 Labor Day weekend field trip in the Ontonagon area opened to other Midwest clubs.

JANUARY 20, 1980 - Program Meeting

The officers for the year 1980 were installed.  
 Interesting program on ceramics presented by NMU professor and students. Also, a slide program on sedimentary rocks.

FEBRUARY 1, 1980 - Business Meeting

Sale of the copper Michigan pins, bolos and tie bars a success.  
 Book to be purchased for Bothwell Middle School in memory of George Bell and one for the library in memory of Esther Bystrom.  
 New Hostess Committee appointed: the Spikes and Ogeas; Lilly Johnson appointed Registrar.

FEBRUARY 17, 1980 - Program Meeting

Annual Silent Auction was held to raise funds for national and local scholarships.  
 Micromounters' displays and a slide program on micromounts were held after the auction.

MARCH 7, 1980 - Business Meeting

Special Projects Committee reported on needs of the Sandy Knoll School: permanent rock display for identification purposes and a display of iron specimens common to Marquette County.  
 Scholarship Committee presented a list of regulations for eligibility of students for our local scholarship awards. Approved.  
 Letters have been sent out to NMU and MTU requesting nominees for the local scholarships for 1980.  
 Our club is over 1000% participation in the American Federation Scholarship fund.  
 Club Logo is now registered in the County Clerk's office.  
 A swap is to be held with other clubs on the Memorial Day weekend field trip.  
 Request received from Gary Seitz of Cincinnati requesting specimens from our area. Committee set up to carry this out.  
 Properties Committee appointed to develop an up-to-date report on club properties and where they are located.  
 Displays at the Marquette and Ishpeming Chambers of Commerce to be cleaned up and improved.  
 Arnold Mulzer elected as the club's delegate to the MWF show.  
 Plans for the annual Rock Swap to be held August 9 and 10 were continued with all committee chairmen appointed.  
 March birthdays were celebrated with a birthday cake.

MARCH 16, 1980 - Program Meeting

"How To Make Cabachons" was the theme of the meeting. Demonstrations given on various types of equipment. Display of cabs and steps to follow in making them. Slide presentation on the subject.

\*\*\*\*\*

DAFFYNITION - Committee: A group of people who talk for hours to produce a result called minutes.

via ROCK DUST

## LET'S TAKE A FIELD TRIP

by Bruce Spike

REF.: Geology of Michigan, Dorr and Escgman

Hey! Let's go on a field trip. Let's ALL go. Field trips ARE for EVERYONE. Even if you never pick up a rock or don't know what to look for, get out of doors, enjoy the fresh air, the company of fellow rockhounds and the scenery of our Upper Peninsula. Think of it as a trip into the geologic past (those dear dim days beyond recall, when upon this earth the mists began to fall).

O.K., Let's go! Our first field trip, May 18, we rendezvous at the Bothwell School at 9: A.M., then take M-28 through Munising to Wetmore. Even this part of the trip is full of geologic history. Take a look at the high rock cut along the lakeshore just east of the prison. It is Quartzite, a metamorphosed deposit of Precambrian origin. Events leading to this formation include: deposition by water, deep burial, compression, subsequent uplift and erosion of overlying rocks. Even the sand plains between Marquette and Sand River represent an epoch of time. While designated recent, they are at least 10,000 years old. While heading east along the lakeshore, take a look east at the Onota Hills and notice the old shoreline outlined against the sky. This was a post-glacial shoreline and indicates the uplift following wastage of the continental glaciers at the end of the Pleistocene.

From Sand River to Munising are many outcrops of Middle Ordovician Age sandstone (425 to 500 million years). Lower AuTrain Falls and Munising Falls both tumble down ledges of this ancient deposit. The beautiful hills surrounding Munising are glacial moraine deposits left behind when the last glacier retreated 10,000 years ago.

From Wetmore our journey continues down Forest Highway 13 in search of Satin Spar and Selenite - both forms of Gypsum. These Evaporites were deposited during Ordovician or Silurian time. Don't forget to bring back specimens for trading at the Rock Swap.

Then we'll go on to Fayette State Park. While Fayette itself represents an early Michigan iron smelting town, it sits on Hendricks Dolomite and Limestone of Silurian age known as the Niagaran Escarpment. The Middle Silurian rocks of the Niagaran Series are world famous geological examples of marine organic reef growth. Look for corals, brachiopods, bryozoans and trilobites in these outcrops.

Leaving Fayette and heading northeast a few miles, we will view another natural phenomenon, the 'sinkhole'. Limestone dissolves readily compared to other rocks. Rainwater sinking underground and movement of groundwater beneath the surface dissolve the limestone to form underground caverns. Sinkholes form when the cavern roof collapses. The Big Spring (Kitch-iti-ki-pi) is a sinkhole with the water still running.

The return trip to Marquette will be Rockhounds' choice.

The Memorial Day weekend will be our first long field trip of the season, and three days of fun and collecting. We leave the Hancock City Camp Ground at 9:00 AM on May 24. While exact details of our search have not yet been worked out, we will be visiting areas prized by micromounters for the variety and beauty of crystalline

continued on next page

## LET'S TAKE A FIELD TRIP (continued)

mineral forms. These areas are also good places to collect larger mineral specimens and cutting rocks.

The Copper Country, as we call it, is one of the best collecting areas in North America. The Keweenaw Age volcanic rocks (1.1 to 1.4 billion years) are of special interest to rockhounds. The vesicles or gas cavities are filled with such minerals as agate, calcite, chlorite, datolite, epidote, prehnite, zeolite, native copper and silver and many more.

June 14 will be another adventure into the Republic pit of Cleveland Cliffs Iron Company. Here one can see a cross section of rock several hundred feet thick. This is not just ordinary rock but is a valuable mineral resource (iron ore) and the basis for the leading industry in Upper Michigan. The iron ore mined here must be artificially concentrated before shipment. It consists of thin, alternating layers of quartz-rich rock, such as slate or chert (jasper) and layers of almost pure iron minerals, mainly hematite, magnetite, iron silicates, siderite and goethite.

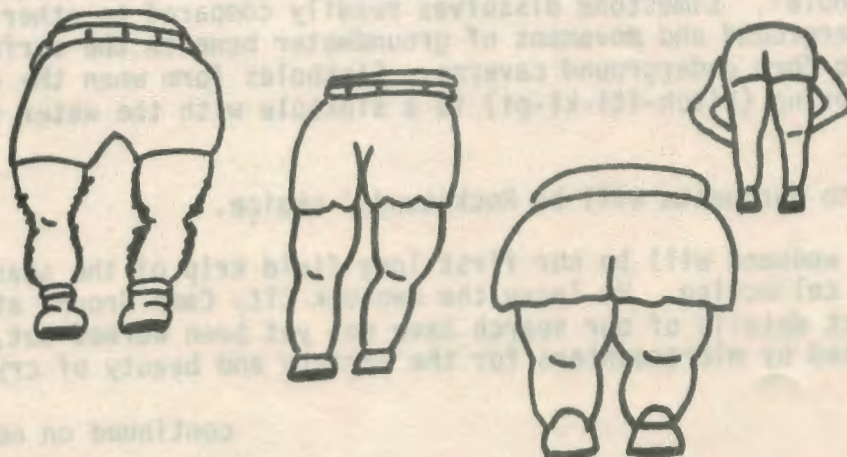
Most geologists believe these iron deposits originated as sediments in the Huronian seas of Middle Precambrian time. After the Huronian sediments had been deposited, the Great Lakes region was involved in a period of intense crustal disturbance called the Penokean Orogeny. Mountain building accompanied that orogeny and erosion continued thereafter. As a result of compression during that orogeny, the iron deposits were complexly folded and broken by faults. The Marquette Range structure is a major downfold (syncline) in the crust. The subsurface is further complicated by minor folds, faults and basic igneous intrusions in the form of dikes and sills.

July 20 will be another one-day field trip. Bring your fishing boots. We rendezvous at the Bothwell School at 9:00 AM and we are off again in search of fossils. This time to the Big Cedar River near Daggett. The carbonate deposits here are older than those at Fayette, dating back to Ordovician time (425 to 500 million years ago). The brachiopods, trilobites, gastropods, corals, pelecypods, cephalopods and others are just waiting to be discovered.

LET'S HAVE A GOOD TURN-OUT!!!

\*\*\*\*\*

THIS IS A DRAWING BY DAN DAMM which appeared in the May, 1976 and May, 1978 issues of the ROCKY READER. We use it now to display his wonderful sense of humor and also to display COMMON SUMMER SIGHTS AT QUARRIES (and mines).



via THE ROCKY READER

## SLIGHT OMISSION

Did you read Olive Sajn's article on Slate Carving and Scribing in the January issue of the JASPILITE? Were you left 'hanging in the air', so to speak, at the end of the article?

Well, your Editor pulled a boner! By not looking on the reverse side of the paper submitted to me I inadvertantly missed the conclusion of the article. So, dig out your January, 1980, JASPILITE and refresh your memory; then read the rest of Olive's article below.

\*\*\*\*\*

## SLATE: CARVING AND SCRIBING

10. Finish flat surface/high relief areas with emery cloth or other fine material. Clean all surfaces thoroughly when work is done.

11. Rub beeswax on surface to be polished-high relief. Put into warm oven or under a heat lamp to melt the wax so it can be rubbed into the pores of the slate. Rub with a soft cloth being careful not to allow the wax to get down on to the background.

12. If the piece you are working on is not bas relief but only scribing, this is how you bring out the design. When all lines are finely scribed to your satisfaction, clean piece thoroughly, cleaning out scribed lines carefully. Dry the piece. Then mix Plaster of Paris or Gesso to a creamy consistency. You may want to use a little Elmer's glue with the water so the plaster will stay in the scribed lines. Work the mixture into the lines and allow to dry. Scrape or sand off the excess plaster. Use emery cloth or fine steel wool, etc. to smooth the surface. Now you have a choice. You can leave the lines filled with plaster or scribe them lightly. Rub the piece with beeswax; warm it, rub to a satiny finish; and then, if the lines looked filled in, scribe them out lightly again.

The average amount of cutting the background away for low relief is only 1/32 or 2/32nds of an inch.

I mentioned earlier that makeshift tools could be used, thus making this a craft for everyone. I have since learned that some people want to speed up the process and have purchased Dremel or other such equipment. When using such equipment, please be safety conscious; protect yourself from breathing dust and be careful using the tools.

Be safety conscious when using makeshift tools also. Always work away from yourself so that you don't jab yourself with a scriber, etc.

The slate used at the November meeting came from a quarry in Baraga County noted for its high quality. Our supply of raw materials is near at hand for use in scribed articles, low relief pictures or for those who are adventurous - sculpturing. Happy carving! Happy sculpturing!

\*\*\*\*\*

The man who does things makes many mistakes, but he never makes the biggest mistake of all ..... doing nothing.

via many bulletins & CARLTON COUNTY NEWS

LABRADORITE, MOONSTONE OR LARVIKITE  
by Olive Sain

We have had specimens of a particular nature at shows and swaps within the past two years that have been labeled Labradorite, Moonstone or Larvikite. Are all three names for the same specimen correct? I'll leave that up to you; but, for me the dilemma was cleared up after checking the following references:

The Collector's Encyclopedia - Gems, Minerals, Crystals & Ores by Richard Pearl, page 251. "Larvikite - a variety of syenite composed of gemmy orthoclase (feldspar). It has a rich blue sheen resembling that of Labradorite. The source of this valuable building stone is Larvik, Norway."

A Field Guide to Field Identification - Minerals of the World by Charles Sorrell, page 217. Two pictures of "anorthoclase", Larvik, Norway.

Gems and Minerals magazine, March, 1980, pages 25 and 29. Comparative pictures of moonstone, Labradorite and larvikite cabachons and a description of the feldspar family involved. Page 80 contains an ad listing Larvikite slabs for sale.

If you do not have any of these references I would be happy to have you use ours. You can then place the proper identification on your "blue flash" specimens according to the way you interpret these sources.

\*\*\*\*\*

For those of you who attended our February Silent Auction and enjoyed so much Dorothy Bowns' delicious brownies, she has shared her recipe with us that we may pass it on to everyone.

SHEET CAKE BROWNIES

Bring to a boil 2 sticks oleo, 1 cup water and 4 tablespoons cocoa. Meanwhile in a metal mixing bowl mix 2 cups sugar, 2 cups flour and 1/2 teaspoon salt. Pour the boiling hot mixture over the dry ingredients and add 2 eggs, 1 cup sour cream together with 1 teaspoon soda. Bake at 350° for 25 minutes.

FROSTING: Bring to a boil 1 stick oleo and 4 tablespoons of cocoa. Remove from heat and add: 6 tablespoons milk, 4 cups powdered sugar, 1 teaspoon vanilla, and 1/2 to 1 cup chopped nuts (optional). Spread on while cake is hot.

\*\*\*\*\*

Get well wishes go to the Reverend Eskil Bostrum who is a patient in Marquette General Hospital as of this writing .....

And to all our club members who may not be feeling up to par at this time.

\*\*\*\*\*

Our regular column, "Bits and Pieces" by Arnold Mulzer will not appear in this issue but will certainly be a part of our next JASPILITE.

\*\*\*\*\*

Have you signed up yet to donate door prizes and/or to serve at one of our meetings? Please sign up with Marie Spike or Marjorie Ogea soon.

## MICROMOUNTERS MEET

by Ingrid Bartelli

Is it possible to fit a bushel of rocks into a space three or four inches square? Yes, it is if you're a micromounter.

Of course, there are a lot of by-products, most of which is handmade gravel. The holey and vuggy rocks we haul home are broken down to expose each little nook and cranny where some mineral crystals might be growing. Each chip of rock is scrutinized under the microscope in search of specimens worthy of mounting.

The problem then becomes one of extracting that minute particle, perching it on a pedestal which is subsequently mounted in a tiny box, usually three-quarters of an inch square.

Next comes the task of labeling and indexing the specimens according to mineral identity and locality where found. We in the IRMC are most grateful to Carl Gutman and Mike Elliott for helping us identify our crystals.

To date, the following members who have or hope to get microscopes have been meeting in special sessions during the winter months in our homes: Gutmans, Tubbs, Sains, Smails, Spikes, LaChances, Mike Elliott and Bartellis.

The rewards are many: the joy of discovery, the companionship of fellow explorers, the sharing of specimens and the feeling of accomplishment when we finally get our crystals permanently mounted for viewing anytime we wish to revel in the world of wonder at our feet.

\*\*\*\*\*

## COLLECTIONS FOR SANDY KNOLL SCHOOL

Specimens for individual collections for the students should be small enough to fit in the compartment of an egg carton. They should all be from Marquette County. 90 egg cartons are needed. The following specimens are needed in the indicated numbers:

Granite	90	Clear Quartz	90	Verde Antique	90
Sandstone	90	Calcite	90	Limestone	90
Basalt	90	Mica	90	Conglomerate	90
Diorite	60	Slate	90	Hematite	90
		Quartz stained with Iron	30		

For a permanent display for the school we need one large specimen of as many different rocks and minerals from Marquette County as possible. These specimens should be identified and labeled with the location where they were found. A display case will be needed for the permanent display.

Specimens may be given to Ray Anderson, Hazel Kaukola or Sally Ahrndt. We would like to have the specimens by the middle of August.

\*\*\*\*\*

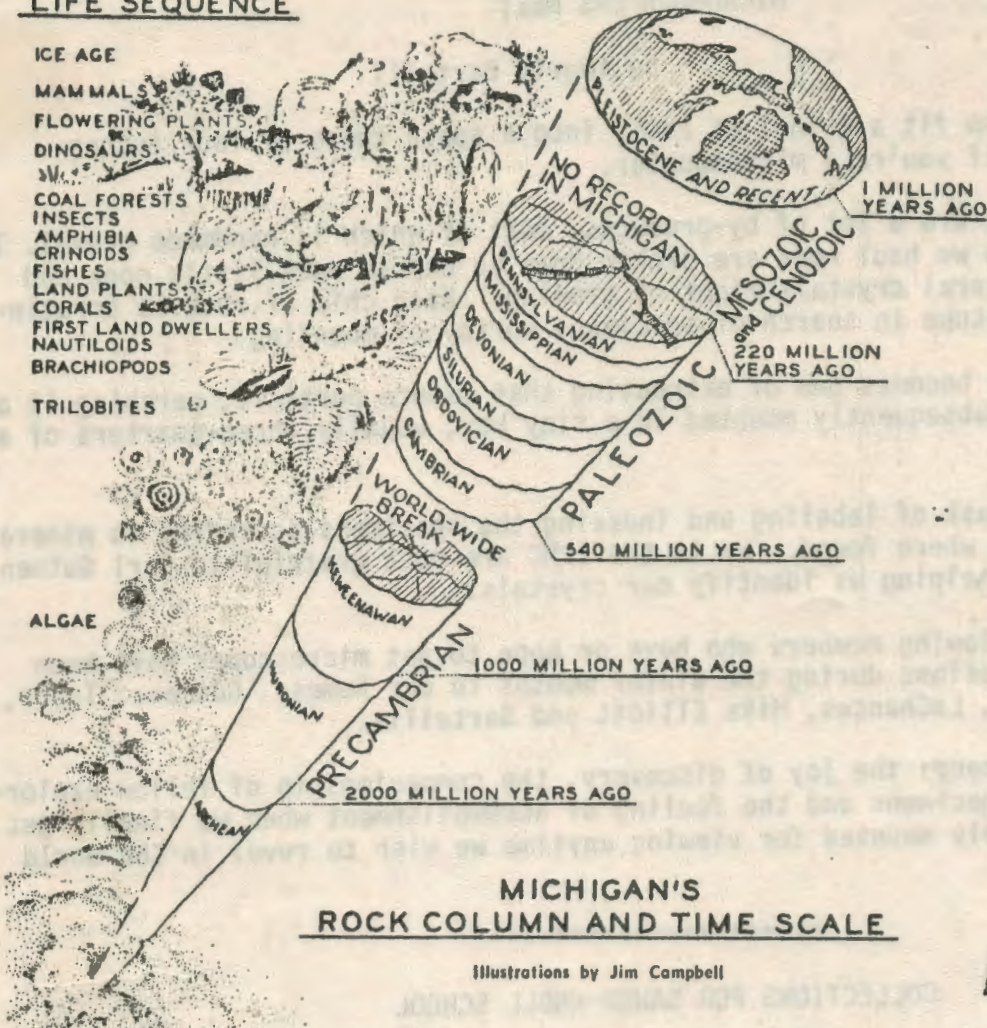
WELCOME TO NEW MEMBERS Thomas W. Morris, Jr. and his mother, Marjorie Morris, who live at 4553 Shenandoah, Allen Park, Michigan 48101.

LIFE SEQUENCE

- ICE AGE
- MAMMALS
- FLOWERING PLANTS
- DINOSAURS
- COAL FORESTS
- INSECTS
- AMPHIBIA
- CRINOIDS
- FISHES
- LAND PLANTS
- CORALS
- FIRST LAND DWELLERS
- NAUTILOIDS
- BRACHIOPODS

TRILOBITES

ALGAE



MICHIGAN'S  
ROCK COLUMN AND TIME SCALE

Illustrations by Jim Campbell

ILLUSTRATIONS OF FOSSILS

To go along with Bruce's article on page 3 the following illustrations, from "Guide to Michigan Fossils" may be used prior to our Field Trips.

FIELD TRIPS

May 18  
Fayette State Park

July 20  
Big Cedar River  
near Daggett

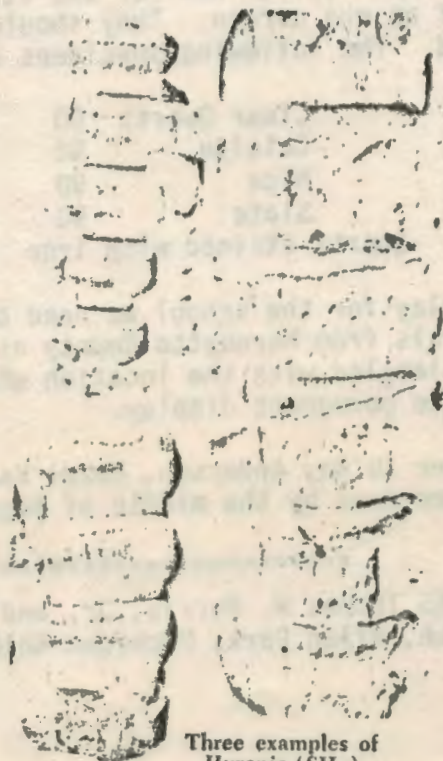
The Silurian and Ordovician periods to which Bruce refers throughout his article can be pinpointed on the Time Scale at the left.

**CEPHALOPODS**

**CEPHALOPODS**—(pronounced *seh'-a-lo-pods*) means "head-foot", referring to the tentacles arranged about the head of these creatures. Relatively few species live today but several thousand have been described for Paleozoic and Mesozoic time. The earliest rocks containing their remains are Cambrian, but during Ordovician time, cephalopods underwent great development. As a matter of fact, one straight-shelled cephalopod attained a length of more than 15 feet—both the largest creature in the early Paleozoic, and the greatest *shellfish* of all time.

The squid, cuttle fish, octopus, and chambered nautilus are modern forms of cephalopods. Perhaps you imagined that jet propulsion is a Twentieth Century innovation. Well it isn't, for these creatures have always used water-expelling tubes in swimming. Another rather unusual attribute is their set of highly developed eyes—closely resembling those of the vertebrates.

Incidentally, the largest invertebrate of all times is living in our oceans right now—the giant squid which attains lengths exceeding 50 feet!



Three examples of *Huronia* (SIL.)

**BRACHIOPODS**



*Platystrophia* (ORD.) Front view, left. The attaching stem protruded through a small opening in the horizontal hinge line area of the lower valve. Rear view, right.

**BRACHIOPODS**—The literal interpretation of brachiopod (pronounced *brack'-e-opod*) is "arm-foot", referring to an interior food gathering and respiratory appendage once incorrectly thought to be comparable to the muscle most clams use for locomotion. Sometimes brachiopods are called lamp shells because a side-view of many resembles "Aladdin's lamp."

Brachiopods superficially resemble the pelecypods, or clams, because both are bivalved shell creatures. Both likewise have a long geologic history persisting from Cambrian time to the present. But the similarity ends there. Brachiopods were very numerous in Ordovician seas but began to decline thereafter, until now, only a few species remain. Most forms attached themselves to other objects on the sea bottom by means of a fleshy stalk protruding between the valves at the hinge line. The valves are unlike, one being upper, the other lower. In the case of most clams, however, one valve is left, the other right—one being the mirror image of the other.



Illustrations from "Guide to Michigan Fossils" (continued)

# CORALS

**CORALS**—The corals (examples are shown on this page and also on pages 10 and 11) belong to a very large group of invertebrates called the Coelenterates (pronounced se'-len'-ter-ates) which means "hollow-intestine", referring to their hollow body cavity. Common examples are: The jellyfish, Portuguese man-of-war, sea anemone (a-nem'-o-nee), fresh water *Hydra*, sea fans (e.g., *Gorgonia*), and, of course, the stony corals that build such extensive barrier reefs in today's oceans. Coelenterates have left a comprehensive record from Cambrian time to the present. Perhaps the most important subdivision of the "hollow-intestine" animals are the corals, or Anthozoans—which means "flower-animal", referring to the colorful soft body polyp crowned with a circle of numerous stinging tentacles. During Silurian time, they showed such an extraordinary expansion of types that it is sometimes called "the age of corals".

Corals always live in marine seas and most of them secrete a limey external skeleton roughly resembling a tube or cone. Some are solitary individuals, many are colonial or gregarious (like apartment dwellers). The single cup secreted by one polyp is called a corallite. Two or more corallites combine to form a corallum. The principal features in identification of corals are: The arrangement of the vertical partitions (septa) radiating from the central axis, the succession of horizontal supporting structures which the growing polyp built underneath itself as it continued to grow, and the size, shape, and relation of the corallites.

Of the four main types of corals, only two are living today, and neither of these has close Paleozoic relatives. The fossil corals in Michigan, therefore, all belong to extinct types—the Tetracorals (Paleozoic) and the Tabulate corals (Paleozoic through Mesozoic).



**Cystiphyllum (SIL.)**  
Above. Note blister-like development in the top, instead of the usual radiating septa; also regeneration by budding.

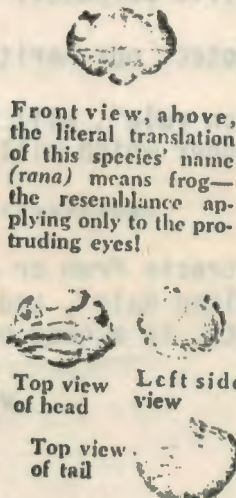


**Halysites (SIL.)** Above, "Chain coral." Over 400 million years ago, each tiny round opening (a corallite) in this corallum was occupied by an individual living polyp.

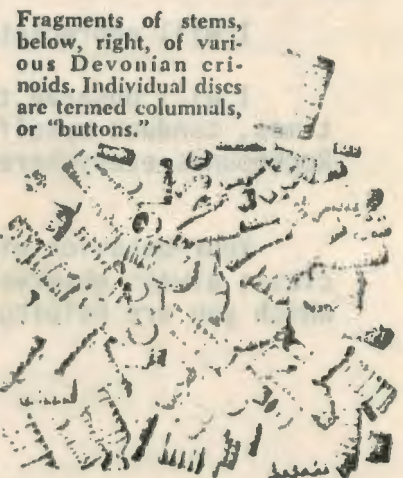
# CRINOIDS

**CRINOIDS**—Crinoids (pronounced cry'-noids)—sea "lillies"—belong to a very large group of spiny-skinned marine invertebrates that include such familiar forms as the starfishes, sea urchins, and sand dollar—scavengers of the sea bottom. Crinoids first appeared in the Ordovician and are widely distributed in present seas. Fossil evidence indicates they attained their greatest development in favorable environments in shallow Mississippian seas. Rooted to the bottom by a stem, sometimes 70 feet long in extinct forms, and having ornate food-gathering fronds (called arms and pinnules) arayed on their calyx, these delicate creatures look like plants—especially as they sway to and fro with the currents. Since the crinoids, and all their relatives, are composed of fragile limey plates, rarely are whole specimens preserved intact. Judging from the many limestone strata that are literally packed with crinoid "buttons" (stem columnals), they must have lived in great numbers, especially in the vicinity of coral reefs. Occasionally, in Michigan rocks we find specimens of the crinoids' cousins, blastoids (sea "buds"). They lived only during the Paleozoic, resemble crinoids somewhat but are without arms, and ideally exhibit the fivefold radial symmetry characteristic of many "spiny-skinned" animals (or Echinoderms).

**Phacops (DEV.)**  
Four views, below. Most of the complete specimens found have the body tightly curled—the tip of the tail meeting the tip of the head—probably the only way of protecting its soft parts exposed on the under side.



Front view, above, the literal translation of this species' name (*rana*) means frog—the resemblance applying only to the protruding eyes!



Fragments of stems, below, right, of various Devonian crinoids. Individual discs are termed columnals, or "buttons."

# TRILOBITES

**TRILOBITES**—As their name implies, trilobites (pronounced try'-lo-bites) are three-lobed in a lengthwise direction. The last straggling survivors died out toward the end of the Paleozoic, so there are no living descendants. Present marine creatures remotely related to trilobites are the lobsters and crabs, particularly the horseshoe crab (*Limulus*). These invertebrates, along with such other familiar types as the shrimp, crabs, crayfish, insects, spiders, scorpions, and millipedes belong to a very large group called arthropods (pronounced ar'-thro-pods) which literally means "joint-foot" referring to their segmented appendages. In Cambrian rocks, trilobites outnumber all other creatures. Since it appears likely that they dominated that former sea, the Cambrian Period is called the "age of trilobites". Most species were about 2 to 3 inches long, but in middle Paleozoic time one fellow grew to 27 inches. Oddly enough, only a few specimens have been recovered from Cambrian formations in Michigan. They are found, however, in our other Paleozoic rocks. Incidentally, other extinct Paleozoic creatures closely related to the trilobites are the eurypterids, or sea scorpions. In general appearance, they resemble the present small land scorpions except the fossils are much larger—in fact, some specimens 9 feet long have been recovered from Silurian rocks in New York State. But the largest arthropod of all time, the giant Japanese spider crab (*Macrochira*) is living in the ocean today. The span of its appendages exceeds 11 feet!

CODE OF ETHICS  
of the  
AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES

I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.

I will keep informed on all laws, regulations and rules governing collecting on public lands and will observe them.

I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.

I will use no firearms or blasting materials in collecting areas.

I will cause no willful damage to property of any kind, such as fences, signs, buildings, etc.

I will leave all gates as found.

I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.

I will discard no burning materials - matches, cigarettes, etc.

I will fill all excavation holes which may be dangerous to livestock.

I will not contaminate wells, creeks or other water supplies.

I will cause no damage to collecting material and will take home only what I can reasonably use.

I will support the Rockhound Project H.E.L.P. (Help Eliminate Litter, Please) and leave all collecting areas devoid of litter, regardless of how found.

I will cooperate with Field Trip Leaders and those in designated authority in all collecting areas.

I will report to my club or Federation Officers, Bureau of Land Management, or other proper authorities, any deposit of petrified wood or other material on public lands which should be protected for the enjoyment of future generations and for public educational and scientific purposes.

I will appreciate and protect our heritage of Natural Resources.

I will observe the "golden rule", will use good outdoor manners, and will at all times, conduct myself in a manner which will add to the stature and public image of Rockhounds everywhere.

\*\*\*\*\*

Your behavior either subtracts from or adds to the stature of Rockhounds as a class; always observe the "Golden Rule", and you can be sure that the "Public Image" which you are helping to create, is a good one, and that will be to your advantage.

via PARK FOREST EARTH SCIENCE NEWSLETTER

## 1980 MEMBERSHIP LIST

<u>NAME</u>	<u>ADDRESS</u>	<u>TELEPHONE</u>
Ahrndt, Larry Ahrndt, Sally (Mrs.)	Boyer Rd., Skandia, MI 49855	942-7669
Anderson, Leon	Box 186, Little Lake, MI 49833	346-3466
Anderson, Robert Ray	800 West Grove St., Marquette, MI 49855	226-2327
Bartelli, Leonard Bartelli, Ingrid (Mrs.)	2010 Sugar Loaf Ave., Marquette, MI 49855	226-3762
Bell, Albertine (Mrs.)	1620 Woodridge, Marquette, MI 49855	226-7708
Belmore, Henry Belmore, Sylvia (Mrs.)	Route 2, Box 153, Marquette, MI 49855	228-7369
Bemis, Charles Bemis, Theresa (Mrs.)	5305 Rice Lake Dr., Gwinn, MI 49841	346-3361
Bermani, Lisa (Jr.)	410 East Hewitt Ave., Marquette, MI 49855	226-9641
Bowns, Jim Bowns, Dorothy (Mrs.) Bowns, Scott (Jr.)	94 Midway Dr., Negaunee, MI 49866	475-9317
✓ Boyum, Burton (L.M.)	1740 Glendora Lane, Ishpeming, MI 49849	485-1854
Croner, Kenneth W. Croner, Anne (Mrs.) Croner, Christopher (Jr.)	8436 Jordan Rd., Grand Blanc, MI 48439	
DePetro, Francis DePetro, Barbara (Mrs.)	1938 Neidhardt, Marquette, MI 49855	228-7317
Dunham, Joseph Dunham, Eileen (Mrs.)	1256 Hwy. M-28, Marquette, MI 49855	249-1328
Elie, Pat (Mrs.)	Box J, Gwinn, MI 49841	346-9742
✓ Elliott, Michael	632 N. Fourth St., Ishpeming, MI 49849	485-6237
Fredlund, L. V.	1605 Altone St., Iron River, MI	265-9083
✓ Garceau, Fred Garceau, Doris (Mrs.)	756 White Ave., Ishpeming, MI 49849	486-4355
Gutman, Carlton Gutman, Susan (Mrs.)	201 West Magnetic St., Marquette, MI 49855	225-0684
✓ Hanninen, Leonard Hanninen, Toinie (Mrs.)	Route 1, Box 269, Champion, MI 49814	376-2329
Hansen, O. Peter	1524 Longyear Ave., Marquette, MI 49855	226-2781

## 1980 Membership List (continued)

<u>NAME</u>	<u>ADDRESS</u>	<u>TELEPHONE</u>
Helt, Becky (Jr.)	804 West Grove St., Marquette, MI 49855	226-2940
✓ Jarvi, Elmer Jarvi, Mamie (Mrs.)	116 Division St. Ishpeming, MI 49849	486-4692
✓ Jenkins, Audubon	Route 1, Box 7, Ishpeming, MI 49849	486-4565 <sup>8200</sup>
Johnson, Ernest, Jr. Johnson, Helen (Mrs.) Johnson, Chris (Jr.) Johnson, Annette (Jr.)	1962 West Fair, Marquette, MI 49855	228-9422
Johnson, Lilly (Mrs.)	P.O. Box 504, Marquette, MI 49855	226-3233
Kaukola, Bernie Kaukola, Hazel (Mrs.)	130 Bayou Rd., Marquette, MI 49855	226-3631
✶✓ Koivula, Martin Koivula, Anna (Mrs.)	614 Vine St., Ishpeming, MI 49849	486-6584
Korby, Allan	116 Cedar Lane, Negaunee, MI 49866	475-6302
Krieg, S. Mildred (Mrs.) Krieg, Robert (Jr.)	Star Route 550, Marquette, MI 49855	226-3471
LaChance, Joseph LaChance, Eleanor (Mrs.)	1933 Van Evera, Marquette, MI 49855	228-6863
Larson, Robert Larson, Pearl (Mrs.)	340 Washington St., Marquette, MI 49855	226-2603
✓ Markert, C. Robert Markert, Marian (Mrs.)	P. O. 69, Ishpeming, MI 49849	486-8012
Markert, Dudley Markert, Anne (Mrs.)	9324 Willow Pond Lane, Burke, VA 22015	
Markert, Scott Markert, Donna (Mrs.)	1110 McAdoo Ave., Baltimore, Maryland 21207	
Markham, Charles	816 College Ave., Marquette, MI 49855	
Matthews, Frank Matthews, Katharine (Mrs.)	U. S. Hwy. 41, Negaunee, MI 49866	475-7779
Maynard, Rufus	216 Silver Creek Rd., Marquette, MI 49855	249-1867
McCarthy, William C. McCarthy, Shirley (Mrs.)	9875 Beck Rd., Plymouth, MI 48170	(313) 453-7691
Morris, Marjorie (Mrs.) Morris, Thomas W., Jr.	4553 Shenandoah, Allen Park, MI 48101	(313) 278-5063

## 1980 Membership List (continued)

<u>NAME</u>	<u>ADDRESS</u>	<u>TELEPHONE</u>
Mortenson, Helen (Mrs.)	63 Grosse Point Estates, 9900 Ulmerton Rd. Largo, Florida 33541	
Mulzer, Arnold Mulzer, Doris (Mrs.)	322 Rock St., Marquette, MI 49855	226-2321
Niles, Morris Niles, Beverly (Mrs.)	Anchor Bay Court, Lot 32 Anchorville, MI 48004	
✓ Ogea, Benjamin Ogea, Marjorie (Mrs.)	Route 3, Box 184A, Ishpeming, MI 49849	485-1904
✓ Phillips, Robert	405 South Rose St., Ishpeming, MI 49849	486-8308
*✓ Procunier, James Procunier, Patricia (Mrs.) Procunier, Robert	572 Jopling Ave., Ishpeming, MI 49849	485-4263
*✓ Quayle, James	527 Vine St., Ishpeming, MI 49849	486-8282
✓ Quayle, Thomas A.	361 South First St., Ishpeming, MI 49849	486-4523
✓ Reidy, Luella M. (Mrs.)	111 Bluff St., Pioneer Bluff Apt. 414 Ishpeming, MI 49849	485-5996
Ruonavaara, Donald Ruonavaara, Janice (Mrs.) Ruonavaara, David (Jr.) Ruonavaara, Dawn (Jr.)	146 Hwy. M-35, Negaunee, MI 49866	475-7637
Ruuska, George	112 East Fair Ave., Marquette, MI 49855	226-8513
Sain, Laurence Sain, Olive (Mrs.)	818 West Kaye, Marquette, MI 49855	226-7325
*✓ Schenk, Robert	Agate Shop, Route 1, Box 91, Republic, MI 49879	376-2373
Schock, John Schock, Lillie (Mrs.)	204 Arch St., Negaunee, MI 49866	475-6457
Short, Nelson Short, Marion (Mrs.)	27 Endicott Dr., Howell, MI 48843	(517) 546-0700
✓ Small, Lowell Small, Dawne (Mrs.)	100 Marble St., Ishpeming, MI 49849	486-6588
Spike, Bruce Spike, Marie (Mrs.) Spike, Sharon	197 Midway Dr., Negaunee, MI 49866	226-3933
Spiroff, Kiril (L.M.)	Isle Royale Location, Houghton, MI 49931	

1980 Membership List (continued)

<u>NAME</u>	<u>ADDRESS</u>	<u>TELEPHONE</u>
Tubbs, Frazier H. Tubbs, Dorothy (Mrs.)	#2 County Rd. 510, Negaunee, MI 49866	475-4954
Vachon, Joseph (Jr.)	1260 Erie St., Marquette, MI 49855	228-7247
Wiig, Arthur	141 Kivela Rd., Negaunee, MI 49866	475-6363
Williamson, Chester Williamson, Elizabeth	1014 Webster Ave., Wheaton, ILL 60187	

Life Member- (L.M.).... Junior Member- (Jr.)

\*\*\*\*\*

APRIL, 1980

THE JASPILITE  
Ishpeming Rock and Mineral Club, Inc.

Helen Johnson, Editor  
1962 West Fair Ave.  
Marquette, MI 49855

FIRST CLASS POSTAGE

Mr. and Mrs. C. Robert Markert  
P. O. Box 69  
Ishpeming, Michigan 49849