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T H E



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SOMETHING OF THE HISTORY OF MINERALS AND MINING

Quote: "He who despises the past will not build for himself a worthy future".

George (Georg or Georgius) Agricola (or Bauer) was a German scholar and man of science, who lived from 1490 to 1555. He is known as "The father of mineralogy".

Born in Glauchau, in Saxony, on March 14, 1490, his early studies were of philology. He earned a degree in medicine in Italy and became the practicing physician in Joachimstal, a center of mining. He chose this location partly to fill in the gaps in the art of healing and partly to test what had been written about mineralogy by careful observation of ores and methods of their treatment.

In 1530 Prince Maurice of Saxony appointed Georg Agricola historiographer with an annual allowance and he migrated to Chemnitz, the center of the mining industry, in order to widen his range of observations. His chief interest was in mineralogy, but he occupied himself also with medical, mathematical, theological, and historical subjects.

His chief historical work was "Dominatores Saxonici a prime origine ad hanc oetatem". In 1544 he published "De Ortu et cannis subterraneorum", in which he laid the first foundations of a physical geology and criticised former theories. In 1545, a volume appeared called "De Natura eorum quae effluent e terra". The year 1546 brought "De Veteribus et novis metallis", a comprehensive account of the discovery and occurrence of minerals. In 1548 "De animantibus subterraneis" was published, and in the two following years a number of smaller works on the metals.

"Bermanus, sive de re metallica dialogus" was the first attempt to reduce to scientific order the knowledge won by practical work in mineralogy and mining. This is considered one of the important early works in chemistry and metallurgy. The book was translated in 1912 from the Latin into English by Mr. and Mrs. Herbert Clark Hoover.

(continued on next page. . . .)

This most famous of Agricola's works, "DE RE METALLICA" was dated 1550, but actually was not published until 1556, the year following the death of the author, who passed from this life on November 21, 1555. The book was a complete and systematic treatise on mining and metallurgy, with many fine and interesting woodcuts. As a matter of fact, it was the laborious labor of love involved in the preparation of the woodcuts, since they required years to complete, that resulted in the long delay in the publication of the book.

The frontispiece of this splendid book contains a laudation of the author by Georgius Fabricus, and this is translated by Ex-president Hoover as follows:

" He doth raise his country's fame with his own
And in the mouths of nations yet unborn
His praises shall be sung; Death domes to all
But great achievements raise a monument
Which shall endure until the sun grows cold".

To give the reader some insight into the language of Agricola, Hoover's translation reads on the first page something as follows:

" To The Most Mighty and the Most Illustrious Dukes of Saxony, Landgraves of Thuringia, Margraves of Meissen, Imperial Overlords of Saxony, Burgraves of Altenberg and Magdeburg, Counts of Brena, Lords of Pleissnerland, To MAURICE, Grand Marshall and Elector of the Holy Roman Empire and to his brother Augustus,

"Most illustrious Princes, often have I considered the metallic arts . . . and when I had perceived the various parts of the subject I became afraid that I might die before I should understand its full extent much less before I could immortalize it in writing. The book itself indicates the length and breadth of the subject, and the number and importance of the sciences of which at least some little knowledge is necessary to miners. Indeed the subject of mining is a very extensive one, and one very difficult to explain; and since the art is one of the most ancient, the most necessary and profitable to mankind, I considered that I ought not to neglect it. Without doubt, none of the arts is older than agriculture, but that of the metals is not less ancient; in fact they are at least equal and coeval, for no mortal ever tilled a field without implements. In truth, in all the works of agriculture, as in the other arts, implements are used which are made from metals, or which could not be made without the use of metals; for this reason the metals are of the greatest necessity to man. When an art is so poor that it lacks metals, it is not of much importance, for nothing is made without tools. Besides, of all ways whereby wealth is equired by good and honest means, none is more advantageous than mining; for although from fields which are well tilled (not to mention other things) we derive rich yields, yet we obtain riches products from mines; in fact one mine is often more beneficial to us than many fields. Nay, if I understand anything, greater wealth now lies hidden beneath the ground in the mountainous parts of our territory than is visible and apparent above ground. Farewell"

Chemnitz, Saxony.
December 1, 1550

Editor's Note:

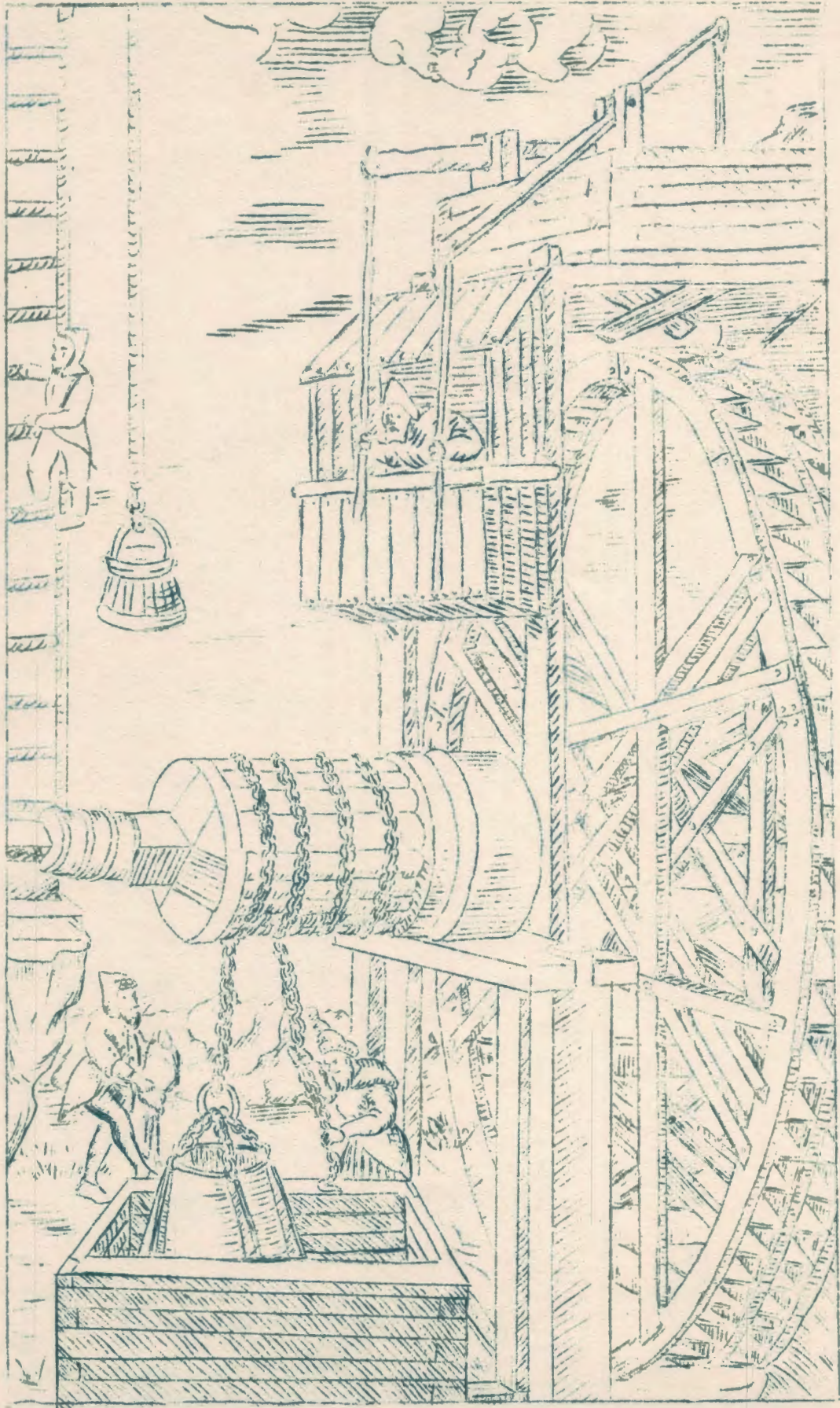
After experimenting with the photographic method, this was rejected in favor of stencil-tracing as a way of reproducing several of the original woodcuts. Some of the finer detail is necessarily lost, but the three reproductions on the following three pages will give the reader some idea of the many interesting illustrations in the book. We should keep in mind that bookmaking was at best a crude process during the mid-sixteenth century! The reader who may be especially interested in this old volume is invited to write the editor of the "Jaspilite" since it is possible that we may use further material from this source if it proves of sufficient interest.

EARLY MINING

HEAD FRAMES - VERTICAL SHAFTS - TUNNELS

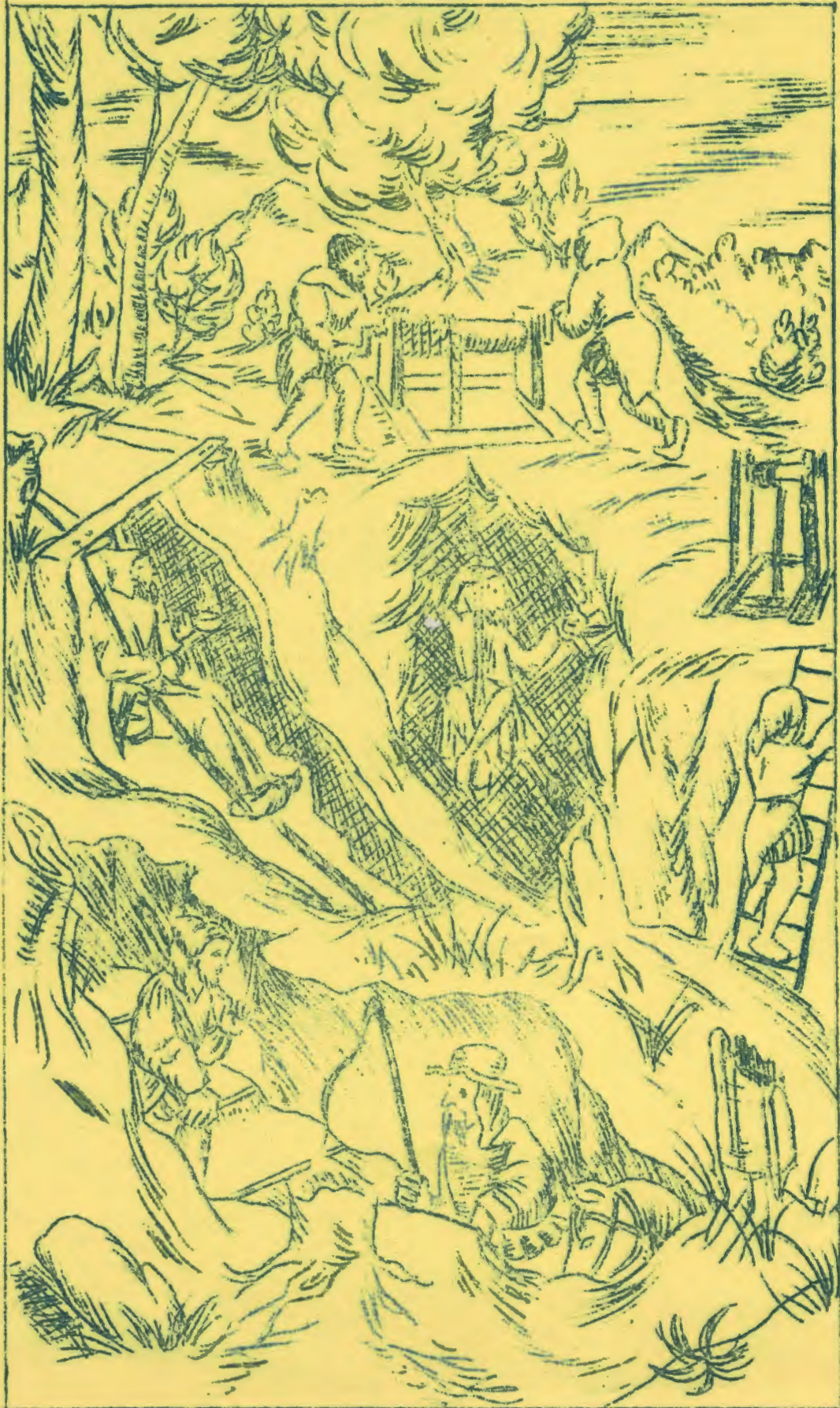


A SIXTEENTH CENTURY MINE HOIST



EARLY MINING

WAYS OF ENTRY: LADDER - WINCH - ROPE



OUR AGATE TRIP

Mrs. Manie Jarvi

Watching the morning sun dip out of Lake Superior's vast horizon and the sight of the previous evening's brilliantly lighted ships, perfectly spaced, are always to be treasured with the agates found at the Keweenaw Point, opposite Manitou Island.

Morning came at 4 am for some shivering members--there was ice on someone's hipboots. The campfire soon provided warmth and the aroma of coffee brought out inquisitive heads one by one, from the pup tents. It's something to remember sipping coffee on the shore of Lake Superior at 4:30 in the morning--listening to the ceaseless pounding of the surf--and just try washing your face in those cool waters at 5 am some May 19th--it's quite invigorating.

About 7 o'clock we were ready for our mile & a half hike to the agate area. Jarl Kivela, our fieldtrip chairman, made the necessary explanations. He would "sprinkle" us along the various coves--we could hunt for agates along a 3 mile stretch--picking would be better as we moved ahead. He showed us the best places to find them. Where you found one there would probably be more--didn't know they came in families. Ask Bob Markert to show you the beauty he found. We had soon dubbed Jim Crawford as "Agate Eye", he'd pick perfectly banded specimens from under one's very nose. By noon we women-folk had a little trouble bending--have heard of "House-Maids Knees" but we had "Agate Knees and Elbows"---it was really funny, sitting down to rest, your hands would automatically begin shifting the rocks, you'd lean lazily over on your elbow, then to your knees as you'd make a find. We really had fun aching bones and sunburned faces.

We left Ishpeming on a cold bright Sat. morning, May 18 on the Ishpeming Rock & Mineral Club fieldtrip to the Keweenaw Point. The inexperienced members of the group planning to spend the night at Copper Harbor at a hotel--for mother had decided for her whole family that it was too cold to "camp out" overnight--the road would be bad and etc.

This family being lately bitten by the "rockhound bug" had not reckoned with that "fascination" a rockhound feels--that he must go--rain or shine cold or warm. And so sleeping bags and a few dimestore cooking utensils were purchased on the way, blankets were borrowed and everyone was happy.

Well, the Markerts had gone on ahead (we should say, past us up somewhere along the way) and we found their note at the Delaware mine--a game of "Hide and Seek" was played for awhile, since we didn't know if they had left for the wilds from Ft. Wilkins. After a few miles of driving over a rough road (wet in spots, Jarl assured us the bottom was hard) we came upon the Markerts empty station-wagon parked in a meadow. They had thought the others had gone on ahead. It was a weary group we came upon after another mile and a half, packing all camping equipment. Did we receive a Royal Welcome? At first they thought Jarl's Jeep and the two cars were a mirage. Bob must be described a heavy knapsack on his back, two sleeping bags tied together and slung around his neck, plus his hands full. It didn't take long to distribute members of his party and luggage into the jeep and cars.

We arrived at the campsite with the jeep towing one of the cars, (thoughtful chairman, towchain and all) but it was a happy-go-lucky group that pitched camp and prepared supper. Marian Markert prepared a delicious stew and some claimed to have eaten a five course meal--what with the tasting that went on from the different pots.

Scott Markert proved to be a true-blooded rockhound--with a rock, he was pounding Isle Royale greenstones out of a rocky ledge. The evening was spent hiking along the shore and sitting around the campfire, the singing died out in favor of the coffee pot.

Many thanks to Jarl Kivela for arranging this never-to-be-forgotten trip.

This is the 1957 directory of paid-up members. If your name does not appear here, you may contact Bud Bamford.

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PAUL VILLENEUVE
250 Hill St.
Ishpeming, Mich.

JIM WHITE
FERN WHITE
915 W. Fourth St.
Marquette, Mich.

MRS. RUTH HUTTON
Northwoods Club
Ishpeming, Mich.

ROCKHOUNDS

Dudley Markert*

Some people think that we are
crazy
For all I know our minds are a
little hazy,
We fill up sacks with worthless
boulders
And then we drape them on our
shoulders.
The size of the sacks we never hate
Although we can scarcely stagger
under it's weight.
When we get home with all our
plunder
We empty it out on the floor with
a thunder.
No rain nor snow nor hail nor sleet
Can keep a rockhound off his feet
If a rockhound knows where rocks
can be found,
He doesn't just loaf around
Before you know, he's out on the
trail,
With his pick, his shovel and his
pail.

SCHOLARSHIP
for
BILL LOCHER

The Ish. Rock and Mineral Club proudly hails our own Bill Locher of West Ishpeming. Bill was recently awarded a Scholarship from the Cleveland Cliffs Iron Co. which will permit Bill's attending the Mich. College of Mining and Technology at Houghton, Mich.

Bill plans on taking up Ore-dressing at the College of Mines. Bill is a charter member of our club and has served the club in the capacity of Librarian.

Our HATS OFF to you Bill, and we wish you all the success in the world. We are proud of you.



FIRST FIELD TRIP FOR 1957

The first field trip of the season was held on May 11. The turnout was terrific, with so many people that I didn't even try to count them. It was especially gratifying to see so many of the junior members present, for it proves that the Ish. club is really promoting an interest in minerals. One of the things that impressed me the most were the intelligent questions asked by these juniors. To them a rock is more than just "something to throw".

Our first stop was at the Beacon Mine at Champion, where we were met by Mr. Fred Michaels, Safety Engineer for the North Range Mining Co. He provided safety goggles for members who didn't have them and stressed the importance of wearing goggles whenever pounding on rocks. I do not think that the wearing of goggles has ever been stressed enough. They are very inexpensive, but an eye is priceless. It takes only one very small chip of rock to damage an eye beyond repair. For those who wear glasses all the time, there are a variety of goggles which can be worn over them or you can get safety goggles ground to your prescription. How much are your eyes worth to you?

The "rock-hunting" was very good at Beacon, with some exceptional specimens found. "Bud" Bamford, our treasurer, who is always on the lookout for "rocks" to put in our treasury did very well for himself (the club, I mean). It seems that he pried "rocks" out of 6 or 8 wallets, for which he gladly exchanged membership cards in the Ish. Rock & Mineral Club. Glad to see you right on the ball, Bud.

Champ Lemm came up with an especially beautiful garnet which was coveted by everyone present. 'Fess up now Champ, did you have that in your pocket when you left home?

From the Beacon Mine we next went to the Phoenix pits for Goethite. Did you ever see such a dusty road?

Our last stop was at National Mine for Goethite and quartz xls. It was here that one of our junior members, Ruth Jarvi, found a large vug which was lined with beautiful quartz and hematite xls. It was an exceptional specimen and worthy of gracing

any cabinet. By this time the sun was sinking and appetites were rising we all went our separate ways for supper. The end of a beautiful day and a wonderful rock-hunt.

Bernie Dooley

CLUB VISITS HUMBOLDT MINE

Our thanks to the Cleveland Cliffs Iron Co. for extending our club the very nice experience of visiting and collecting in the Humboldt Mine area.

We did not collect the things that we expected in the pits, however, we were pleasantly surprised to find some very nice specimens of AZURITE--MALACHITE--CHRYSOCOLLA. Nothing of cutting quality but rather thin coatings of blue and green on Magnetite.

We appreciate the help from the Geological Dept. with their explanations on the formations in that pit.

Collecting that day were 40 members of Ish. & Negaunee's two 4-H Clubs and the Ish. Rock and Mineral Club as well as a number of visiting collectors.

Visiting rockhounds in this area are always welcome to accompany the club on all field trips.

PREHNITE

H-6-6 $\frac{1}{2}$ G-2.8 --2.95

Prehnite xls are Orthorhombic but distinct. Xls are rare, usually uniform, stalactitic and in rounded groups of tabular xls. Vitreous luster usually light green to white and is translucent.

Prehnite is a Hydrated Calcium Aluminum Silicate. $Ca_2, Al_2, Si_3, O_{10} - (OH)_2$

Prehnite occurs as a mineral of secondary origin lining amygdaloidal cavities in basalt and related rocks. Associated with Zeolites, datolite, pectolite and Calcite. Found in the U.P. in the Lake Superior copper inclusions. Bob Schenk

IN this INstance, . . . is he IN ?

Now, the I. R. & M. Club has always welcomed prospective new members, and especially the fellow who has already developed a strong zeal for specimens and who has already begun an unusual and varied collection.

BUT, in the case of CLARENCE, we're not so sure . . . we regard him with some awe and suspicion, and now we'd better tell you WHY!

This fellow, Clarence, showed up at our last meeting, and after proper introductions and then some prodding, avowed he was a rock collector. Nothing strange about that . . . we've come to accept and seek the company of such people. The last person to question the mental soundness of the rock-hound admitted, "I think they're crazy, but I collect old clocks and rocking-chairs, and folks think I'M crazy." Whoops, off the subject we go . . . our mind wanders, like Rover . . . but if you're still reading we'll get right back to Clarence.

Confidentially, Clarence has a unique collection of rocks. Not ordinary rocks; extra-ordinary ones! Clarence, you see, is one of those fortunate persons who is able to make trips to remote places. So, during his travels, he explained to us, he picked up a stone from the GREAT PYRAMID of Mexico, a carving from an ancient Aztec figure, and, for instance a small piece of the Colliseum of Rome, quickly collected, he admitted, while he left the tourist and guard and when the "least number of people were looking". His latest addition, he showed us, was a rock from Hitler's fireplace--the hideaway retreat in Berchtesgarden.

We couldn't help but admire, secretly, the courage of this fellow Clarence. For, sitting right in the next chair at our meeting, was that pillar of law-enforcements, the CAPTAIN of the STATE POLICE, who is one of our members. There's a question of ETHICS involved, you see. I should say RIGHT or WRONG. For we seemed to notice, as Clarence's confession unfolded, that the CAPTIAN straightened up a bit, alert no doubt at all hours for performance of his sworn duty. Everyone knows the policeman must discourage the pilfering of buildings, or PARTS of buildings, whether public or private, by placing the perpetrator in incarceration if necessary, especially after hearing a first-hand admittal of guilt! We could envisage our club candidate, Clarence, in a jail-cell, with rock samples pried from around the window-bars.

Say, how about this? Knowing of Clarence's plans for a world tour, we were horrified to imagine a fellow-member, geologist-pick in hand, taking a sample from the world's most beautiful building, the Taj Mahal! Or perhaps an emerald eye from Buddha! Knowing of Clarence's fondness for the arts, and of his visit to the Louvre, we were alarmed in trying to recall whether the Venus de Milo had one or two arms last we saw her picture! Zounds! Perhaps there have been other collectors, other Clarences, over the years. Maybe it's impossible to restore the Parthenon, what with rock-busters visiting the place, We reflected upon the photos we had seen: BEFORE and AFTER--buildings that had been modernized or face-lifted, as they say, famous edifices BEFORE Clarence and AFTER Clarence! In quieter mood, we could allow, we thought, a chip from the GREAT WALL of China, without too much damage.

Clarence will pay his dollar-dues if we invite him to join us. But then he'd be a full-fledged member! We rock-busters do wham away at God's own lithosphere. Clarence, come on in, you're one of us!

FIELD TRIP FOR AGATES

by Bernie Dooley

The week-end of May 18 & 19 saw the Rock and Mineral Club of Ishpeming on it's second field trip for the 1957 season. The scene for this one was the Keweenaw Peninsula and our target was the Agate beach right out on the point. The original plans for this trip called for a boat trip to Manitou Island, but the boat we had planned to charter got fouled up in such a way that it wasn't available at the time we needed it. Everything working out just fine though mostly due to the wonderful guiding of Jarl Kivela.

The turn-out wasn't quite what we expected, but with the threatening skies the morning of departure nobody could be blamed for staying home. Everyone expected rain but as it turned out we had beautiful weather for the trip.

Two stops were made on the way to the Point, the Copper Falls Mine and the Delaware Mine, where some very nice specimens were gathered.

This was one trip that the Markert family will long remember. They couldn't leave as early as the rest on Saturday morning, so they drove up later and as it turned out, were the first ones to leave Fort Wilkins for the rough ride to the point. After driving for several miles Bob decided that these new-fangled cars weren't built for such roads, so with the spirit that was significant of our pioneer forbearers, they abandoned their car and set out to do the last 4 or 5 miles on foot. Now the camping equipment for 4 people for 2 days is no small load, but the Markert family was well endowed with intestinal fortitude and rather than abandon any of their gear, they set out with light hearts and heavily-loaded backs. We came upon them trudging up a hill about 2 miles from their destination and at first glance Bob looked more like a Packhorse than a rock-hound. He had a packsack about the size of a medium-sized tent on his back, 2 sleeping-bags tied together and hung around his neck and both hands full. The rest of the family were equally well-loaded, with even little Scott carrying his fair share of the burden. After distributing them and their

equipment in the cars, we again hit the road (literally) with yours truly, saving gas by being towed in by Jarl Kivela. It seems that water in the distributor affects the operation of a car. Smile, Frances Calhoun! The rest of the trip was uneventful and after pitching camp and eating supper, a pleasant evening was spent around the campfire, toasting marshmallows and re-hashing former field trips. When bedtime came, no one had to be urged to "hit the sack".

Early Sunday morning we were on the beach and believe it or not, the agate picking was good. Even I got a good sack full. The junior members present had a wonderful time and all got goodly amounts of agates. Everyone present found at least one "braggin' agate", and it was with great regret that we packed up and headed homeward.

THE STAR MINE

by Bob Davis, Idaho

Galena and Sphalerite are the two ore minerals mined here with a small quantity of silver as an associated mineral. The two aforementioned minerals are very fine grained and although there are high grade patches, there are never any crystals (editors note--SSHUCKS) The ore occurs along a vertical fault primarily and there are other nearby ore bodies along smaller faults. The main ore body is continuous from surface to 6300 feet deep that we know of, and probably extends at least another 500 feet down. The vein is several thousand feet long and the ore varies in thickness from inches to 25 feet or more in width. The narrowest portions cannot be mined economically. Mining is done by the horizontal cut and fill method.

Hecla operates two mines in this area as well as a large exploration nearby where a 2000 foot shaft and 8000 feet of drifting will be done in search of ore. Hecla also operates a uranium mine near Moab, Utah.