



GRAND RIVER HERITAGE MINES SOCIETY NEWSLETTER Feb.\March\April 1994

I am sure we are all looking forward to S-P-R-I-N-G and our field trips! But first we will be holding another indoor meeting in March, and we have several other events planned in which we invite you to participate. Our March meeting will be a workshop and planning meeting for members. Mark your calendar - March 26, 10 a.m. at Brantwood. See the map in the Jan. newsletter or phone one of us for directions: Ilse 519/756-6634, Kathy 751-1688, Jean 442-7000.

You have probably heard that the designation of the Grand River as a Canadian Heritage River has been completed and was officially announced during Heritage Week February 21 - 27. A celebration is in order!

By the time you receive this newsletter, our steering committee will have been guests of the Brantford Lapidary and Mineral Society and featured on their program to tell them about our society. We hope that contacts such as this will bring in more interested members willing to share in our work.

Our own January meeting, owing to the icy roads, was ill-attended, but we sat down and discussed plans and projects and thus we felt it was a successful morning. We hope that many will turn out to hear Bern Feenstra on February 26th!

Your steering committee has been looking for ways to publicize our organization. Besides publicizing our own meetings and field trips, we have committed ourselves to setting up booths at the following shows, and need volunteers to help take shifts:

* GEO-RAMA, the Brantford Lapidary and Mineral Society Show, April 9, from 10 a.m. to 6 p.m., and April 10, from 10 a.m. to 5 p.m. at the Woodman Park Community Centre, 491 Grey St., Brantford.

* Central Ontario Annual Historical Show, Paris Fairgrounds, June 11 and 12th - display booth.

* Springtime In Paris on May 29 and 30. This big event is being held for its third year and will have activities all over Paris - house tours, craft show, face-painting and other kid-activities, a frontier encampment by the muzzle-loaders, antique show, dog show, buskers, clowns, etc. We plan to be located in the auditorium above the Town Office, where we plan to set up a display along with other heritage organizations, and also to lead people on a short historic walk of downtown Paris to indicate where the first gypsum mine was located, and also the raceways and mills.

* The Golden Horseshoe Steam Show in Caledonia on Civic Holiday weekend, July 30, 31 and August 1. The York Grand River Historical Society will let us share their building to set up our display and sell memberships and other small items. This is a great opportunity to pick up more members in this area.

Field trips this year will begin on April 16, and we will try to hold one each weekend, weather permitting. Spring is the best time of year to explore, before the foliage covers everything up. Phone Ilse, Kathy or Jean to find out where and when we will meet.

A special field trip is planned for Saturday, April 24 (rain date Sunday, April 30). We will meet on the east side of the Grand River, at the end of Powerline Rd. and proceed along the trail to the south. See a creek that disappears into the ground and some rare wild plants!

The Research Committee has been busy taking trips to the Ontario Archives and gathering more information about the mines. We need some more members in this group. Let Jean know if you are interested!

NOTE TO THOSE WHO HAVE NOT PAID THEIR MEMBERSHIP FEE. THIS IS THE LAST NEWSLETTER THAT WILL BE SENT OUT TO MEMBERS WHO HAVE NOT PAID.

GYPSUM, THE ROCK THAT NOBODY KNOWS by Ilse Kraemer

Gypsum or calcium sulphate with water, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$, also called plaster of Paris, is a white or colourless mineral, sometimes tinted by other minerals. Gypsum is used everywhere, but no one notices it. It is deeply woven into Canada's history, geography and economy.

Pioneer farmers as early as 1800, if they were lucky enough to own a gypsum deposit on their land, supplemented their income by opening up their own mine. Most of these mines were never recorded or mineral rights registered. They were so-called wild mines. Nobody knows where many of these old tunnels are, how long, how deep they were or the location of the air or escape shafts. All this makes these areas dangerous. A lot of this mined gypsum was of inferior quality and used only as land plaster, a very welcome fertilizer for highly acid areas. Chunks of pure gypsum were used by artists for carving of vases and other beautiful figurines.

The origin of gypsum is a fascinating story. 250 million years ago, it was formed from evaporation of shallow salt water seas. This is why gypsum is also called evaporate mineral. At the time, when the salt sea water started to evaporate, the first deposit was an iron oxide, followed by calcium carbonate. The next layer was either calcium sulphate plus water or anhydrite, calcium sulphate minus water, CaSO_4 . Above these deposits, common table salt was deposited. Even today gypsum and anhydrite are constantly deposited at the bottom of the Great Salt Lakes, the Dead Sea and other saline bodies of water. Gypsum occurs widely in nature and is an accessory mineral in many other rocks.

The name gypsum comes from the Greek "gypsos" meaning chalk. The magic quality of gypsum is that 21% of its volume is water. Calcium sulphate plus water is gypsum. Calcium sulphate minus water is anhydrite. Add water to anhydrite and we have gypsum again. In some areas gypsum is obtained in open quarry pits, in others by underground mining. It was mined in Ontario as early as 1822. Today it is still mined in Ontario in Caledonia, Hagersville and Drumbo. These are very modern mines. Canada is the world's second largest producer of gypsum. The richest and purest deposits are in the Maritimes. Here it crops out of hillsides, hides under soil and seems to be everywhere. Nova Scotia is literally pock-marked by karst topography--a terrain of steep hillocks, caves and underground streams and sinkholes. The same can be seen in Ontario too in the Salina formation. Gypsum can be produced synthetically in the battle against acid rain, especially in the hydro power stations. Wet scrubbers have been installed in the smokestacks of these factories. The waste product of the scrubbers, combined with limestone produces gypsum. Sulphuric acid plus lime equals gypsum. This is bad news for the miners but not for the mining industry. Shortly the Westrock Gypsum Mine in Drumbo will have to close down forever and the mine tunnel will be flooded for stability. Westrock will purchase its gypsum from Ontario Hydro at a cheaper price than they could mine it.

It is hard to believe that gypsum is part of our lives from morning to night. It is in our toothpaste; the bathroom sink is made of it; the tiles are caulked with it; you eat it in your bread - it is added to the flour to make a smoother dough; plaster of Paris is used for casts for broken limbs; it is a component in paint and cement; it is used to fashion inexpensive pearls and jewelry; it covers interior walls as plaster and drywall; beer and even wine are filtered through it; for extra smoothness, it is added in the manufacture of paper and textiles; and there many more uses.

What do you look for if you want to find a gypsum mine opening or a cave? Start in an area where gypsum mining took place or caves are known. The presence of limestone is an important clue too, especially if it assumes the type of rough surface topography called karst, which is characterized by sinkholes and fissures. Look for closed valleys (narrow ravines) in places that seem to suck in rainwater as soon as it hits the surface. Watch for openings no matter how small, that suck in air or blow it out. A stiff breeze in a crawl space indicates that somewhere under the ground is a large space. This space is trying to maintain equilibrium with the shifting air pressure from outside. If the outside pressure is high, air is literally sucked into the mine or cave. If the

atmospheric pressure is low, the air is blown out with considerable force.

Caves and old mine tunnels are not safe at all. Dried out gypsum is very brittle and may collapse. Underground water and streams have in places dissolved the gypsum, leaving large underground channels and caves extending in some cases for more than one hundred feet in length. All this can collapse at any time for no apparent reason.

Sources

Cole, L.H. Gypsum in Canada. 1911.

Taylor, Michael Ray. "Daring and Danger in a World of Delicate Beauty." In Audubon , Sept.\Oct., 1991.

Cameron, Silver Donald. " The Rock Nobody Knows." In Canadian Geographic, Aug.\Sept., 1990.

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Please fill out this member participation form. Sign up for as much as you can do! We need your help! Mail it to Jean Farquharson, RR3, Paris Ont. N3L 3E3.

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GRAND RIVER HERITAGE MINES SOCIETY: Member Participation

Name:

I would like to give assistance with the mines society:

- ☐ 1. Research in libraries, museums, archives.
- ☐ 2. Organizing research information and writing - booklets, articles, etc.
- ☐ 3. Interviewing local people (oral history.)
- ☐ 4. Participating in exploratory field trips.
- ☐ 5. Conducting public field trips.
- ☐ 6. Serving on the steering committee.
- ☐ 7. Contributing articles to our newsletter.
- ☐ 8. Preparing displays: (a) all kinds
(b) Models
(c) Posters
(d) Preparing photos, slides
(e) Making maps
(f) Other (please suggest)
- ☐ 9. Representing our organization at shows, etc. Will you help at any shows we are already committed to?
- ☐ 10. Visiting other projects: e.g., Timmins, Mine, Bruce Mines, Silver Queen Mine, Cobalt, Oil Springs.
- ☐ 11. Contributing to programs at our meetings.
- ☐ 12. Other ways I can help/ suggestions: