



GRAND RIVER HERITAGE MINES SOCIETY NEWSLETTER

January, February, March, 1999

Editor's Notes, by Jean Farquharson

Owing to an enormous workload to prepare for an OMB Hearing (HELP!), the newsletter is late. We apologize. We hope you enjoy Ilse's report and Mike's article on steam-operated pumps. Memberships are due and a meeting and social are coming up!

We have received permission from Wasyl Bakowsky, a naturalist, to reprint his article on the globally rare **perched prairie fens** from the newsletter (which we receive) of the Natural Heritage Information Centre in Peterborough, part of the Ministry of Natural Resources. Since Brant County and Haldimand-Norfolk Region have the only known perched fens in Ontario, and since we have observed them on our field trips, we thought you might be interested. If you want to obtain a list of plant and animal species found in Ontario, including a separate list of rare plants, you should check the internet at www.mnr.gov.on.ca/MNR/nhic/lists/lists.html.

FIELD TRIPS AND COMING EVENTS, by Ilse Kraemer

Saturday, March 6th, 10 a.m. (Alternate Date - Mar. 13) -Business Meeting and Pot-Luck Lunch at the home of Jean and Al Farquharson, 823 Powerline Rd., Paris.

Geo-Rama, Brant Gem and Mineral Show, Paris Fairgrounds, April 10th and 11th, 10 a.m. to 5 p.m. **WE NEED HELP!** Please phone if you can volunteer some time to be there. Ilse will have a special Indian Archeology display beside the Mines Society display.

Jean is speaking at a meeting of the **Moyle Women's Institute** on March 10th, and she has been asked by some members of a Grade 6 class at Bethel Public School south of Paris to have an interview about the *history of the gypsum mines* and the *Grand River Navigation Company* and the *Six Nations* on February 4th. Students are beginning to show an interest!

We are pleased to welcome a new member, **Don Hurst**, a retired geologist and school teacher. Don worked for the Ontario Water Resources Commission, and has some interesting stories to tell. He has donated several issues of the Ont. Dept. Of Mines Annual Reports. Thanks!

The first field trip last fall took us back to **Five Oaks**. For years, we had tried to investigate the lower ridge for mine tunnels. This would be the Port Stanley till strata. For years the water level was too high to get down there. But owing to the long drought, the water level of the Grand River was extremely low. It was now or never for us. We encountered four clearly visible tunnel openings in different states of collapse. Water spurted out heavy deposits of tufa.

One opening still had part of the stone wall for support. The walk along the edge of the river was extremely difficult. Vines, brush and fallen trees made one wish one was a monkey. It was interesting to note that all the dead trees were butternut trees that had succumbed to the butternut virus, similar to the elm disease.

The week after this we met with Mr. Burkholder on the **south side of Whiteman's Creek**. He and a group of locals are fighting the opening of another gravel pit. We investigated the area for gypsum mines and other historical remains. The south side of the embankment is very steep and we encountered a few collapsed mine tunnels. In the early 1800's, this area was a very busy place with houses and industries such as a distillery, grist mill and gypsum mill located here. Mill races are still visible as is an old water ram and parts of foundations. Piles of very old decaying bark and sawdust located the sawmill. Bixel Brewery was located there for a few years before it was moved to Brantford.

An old road going off from Pottruff Road is still there; remnants of hedgerows surround original lots; old pear, apple and cherry trees are reminders of a once booming village. Towards the mouth of Whiteman's Creek, a wood foundation had washed out. The very old wood was in excellent condition. We walked, climbed and tottered along the east embankment of the Grand heading south. There was no visible mine activity in this area.

Finally we reached the top of the embankment, the site of the proposed gravel pit. We found a lot of archeological evidence in this field. It was a very strenuous walk, but enjoyed by all. We hope that our research will help the people fighting the pit.

The next week we did some research around the abandoned sewage pipe crossing the **Northwest of Brantford**. This area was the spillway when the glaciers of the last ice-age melted in the north. The water transported a lot of gravel which was deposited here as gravel beds. We found a lot of interesting stones and boulders, bog iron, red and yellow ochre - an iron pigment and lots of white gypsum. Some of the shale was bituminous or oil-bearing shale.

The week after was our last outing of the year. We went to research the **rare fen in the Northwest area**. This fen is literally hanging on the side of the steep embankment. Therefore the name "suspended fen", "hanging fen", and since countless spring-fed streams criss-cross the area, the name "wet fen". This fen is a few acres in size. The soil is very rich, but due to tufa and gypsum and marl, is non-acid. This is why we encounter unusual plants - Virginia Mountain Mint, Swamp thistle, Ohio Golden root, Bush chinquapin (a beautiful yellow flowering shrub), Sun-dew (an insect-eating plant), dodder, sweet or vanilla grass, blue gentian. The ground is very wet, mushy and unstable, with deep holes all over. Two years ago, when a new gravel pit was opened, the fen dried out, but the year after, the water came back. Since we have had the long period of drought, we expected no water flow, but 50% of the springs were still gushing water. We were surprised to encounter blooming blue gentian this late in the year. A wet fen of this size is very rare, and we hope, protected. (Continued on Page 5)

Field Trips and Events (Continued)

On a family outing, we discovered many **sandstone mines west of Cambridge**. Some are very deep tunnels. This is another mining area to research.

We had a very nice **Christmas party** at my home in late November; many members came and the tables were loaded with pot-luck dishes and a lot of sweet treats. As ever, the group enjoyed to be together, and especially enjoyed the special slide presentation by Gwen Parkhill, *Fall in Haliburton*. All were spellbound by the beauty Gwen's artistic talent brought to us. We all thank Gwen again.

Spring is just around the corner, and we are looking forward to beginning our activity. Weather permitting, our outings will start in mid-April after the lapidary exhibit. We should concentrate on the Holstein mine, Garland Mine and Merritt Mine. The Holstein Mine may have opened up much more. The Ministry of Transportation did a lot of work on Highway 6 around the Olds Mine. Collapsed embankments and sections of the Highway were repaired last year. Call Ilse to verify the dates, places and times to meet.

ATMOSPHERIC ENGINES - STEAM ENGINES, ETC., by Mike O'Byrne

One never knows when one will run across a reference to mining and its impact on seemingly unrelated technology.

I am interested in the history of engineering technology, particularly as it related to mining and steam engineering. Recently I obtained a book devoted to the historical development of marine engines. How are steam-operated marine engines related to mining?

Removing water from shaft-developed mines has always been a problem. Early mining operations in what is now known as Germany where they used the most sophisticated in terms of their mining methods, milling processes and the use of mining machinery. The difficulty of removing water from even shallow shaft mines via bailing, using windmill, horse-powered or people powered pumps was extremely inefficient and created a climate favouring the development of a steam-assisted engine.

In 1698, T. Savary patented a steam operated pump that could successfully pump out mines to a depth of 500 feet in two lifts. Subsequent developments, particularly by Newcomen increased the efficiency of these machines. A Newcomen pumping machine built in 1795 was in continuous operation until 1923.

The Cornish steam pumping engine was a massive machine and used almost exclusively in pumping deep mines. The last Cornish pumping engine installed on the Comstock Lode in Unio

Shaft in 1879 could pump 2 million gallons of water every 24 hours.

The pump rod on this particular engine was made up of lengths of 16 inch by 16 inch Oregon pine joined together by iron straps. It was 2500 feet long and weighed 300 tons. Including the weight of the pump rod, this pumping engine weighed close to 500 tons.

Interestingly enough the pump rod was used as a rudimentary form of escalator, but not necessarily in the pumping engine noted previously.

The pump rod reached down to the lowest point in the shaft (the sump). The rod moved vertically 10 to 12 feet with each stroke of the engine. The pump rod could and was in some instances equipped with small steps and hand holds. The timbered shaft wall was equipped with platforms. The steps and platforms were located one pump stroke apart; such that at the top or bottom of a stroke, each step on the pump rod corresponded with a platform on the shaft wall.

In order to descend, the miner stepped off the platform onto the corresponding pump rod step while the pump rod was at the top of its stroke and rode the pump rod down to the next platform below; where he/she stepped off during the rod's momentary pause at the end of the engine's stroke. He/she then waited a few moment's while the engine reached the top of its stroke at which point if he/she was still alive repeated the process.

This rudimentary escalator bristled with risks to life and limb but was accepted as an occupational hazard; the alternatives being to be lowered or raised in a bucket or cage or to climb up or down the vertical ladders. One thus had several options as to how one wished to be maimed or killed.

Membership - Renewals Are Due

Membership Renewals were due in January. A membership form is enclosed. Please remember to send your cheque promptly to Ilse.

This newsletter is edited by Jean Farquharson. We are not responsible for errors. We are looking for more information about the mining industry in Southern Ontario. Submissions are welcome. Please send **correspondence** to Jean Farquharson, R.R.3, Paris ON N3L 3E3. Phone 519/442-2156. Fax 519/442-2373. For **membership inquiries**, contact Ilse Kraemer, 23 KingsHill Lane, Brantford ON N3T 6A3. Phone 519-756-6634.