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## Western Canadian Gemstone Newsletter

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### The Society Girl Mine

Spectacular pyromorphite specimens

By Tony Smith

TOS → SOCIETY GIRL

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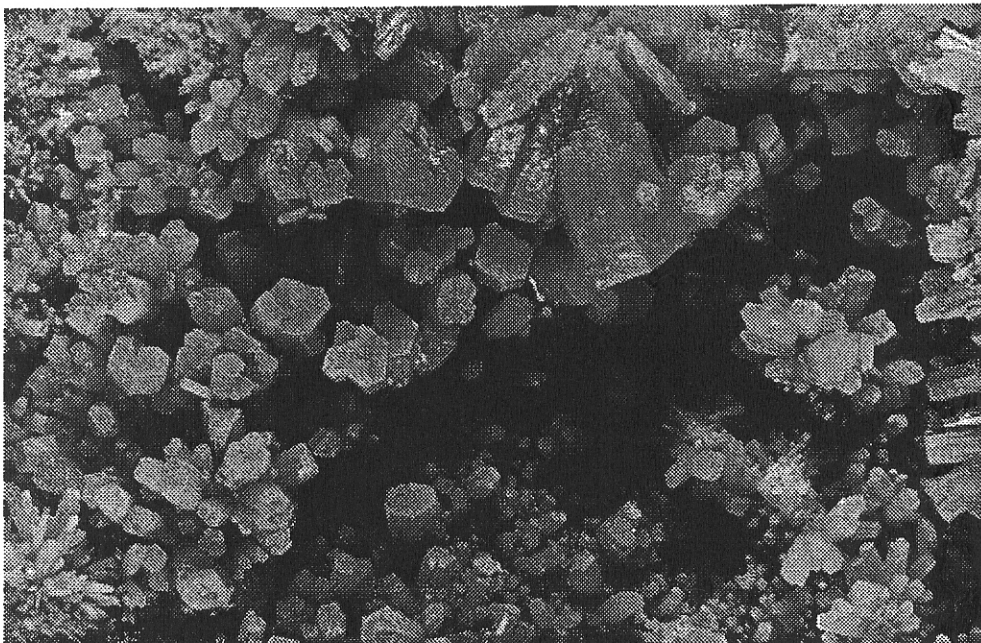
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Pyromorphite (lead-phosphate-chloride) crystals from the Society Girl Mine, BC  
Photo by Ken Mayer for the Mineralogical Association of Canada.

#### **A century old site**

The Society Girl Mine, which is located in the East Kootenays in southeastern British Columbia, is renowned for the fine pyromorphite specimens which it has produced. Pyromorphite, a lead chlorophosphate, occurs as a secondary mineral in the oxidized zones of lead bearing veins. Such occurrences are quite rare in Canada, which makes this mine all the more noteworthy.

In the Annual Report of the Minister of Mines (B.C.) for the year 1909, mention is made of the Society Girl group which consisted of seven Crown-granted claims located about two miles southeast of the town of Moyie. It is just over the crest of the first range of hills east of Moyie Lake about 2000 feet above the lake. The ore was primarily galena, carrying about 1/2 ounce of silver to the percent of lead. It occurs in a quartz gangue associated with some zinc. In the surface workings, the galena was heavily oxidized so that the ore which was mined was primarily lead carbonate (cerrusite) with some galena. Mention is also made of "some very pretty crystals of pyromorphite".

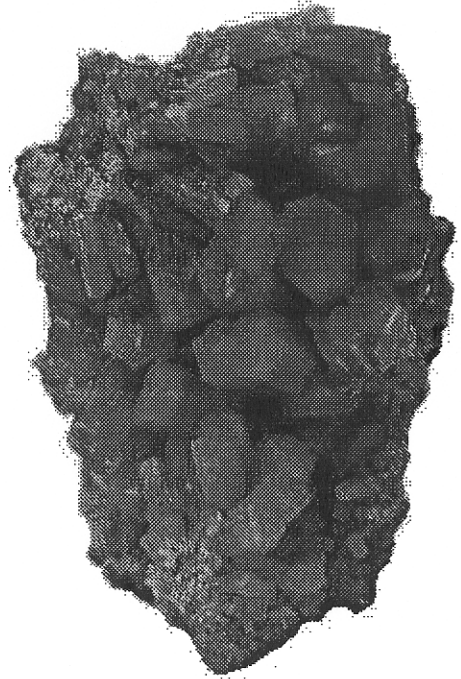
#### **Cerrusite and pyromorphite**

The occurrence is also discussed in the

Pyromorphite cluster (5cm tall)  
from the Society Girl Mine, BC

The occurrence is also discussed in the Geological Survey Memoir #76 (1915). The formation is described as the oldest subdivision of the Purcell series called the Aldridge formation, which here strikes north-south with a dip of 25 degrees to the east. The vein strikes N. 60 degrees W. with a dip of 60 degrees to the south and appears to be in the great zone of fissuring which traverses the Moyie area. The vein is narrow where it traverses thin-bedded argillaceous quartzites and widens out in the heavier-bedded quartzites. Mention is also made of the oxidized zone which is exposed in the upper workings consisting of cerussite (lead carbonate), and pyromorphite which occurs both in massive form and as beautiful crystals. The cerussite is white to colourless and occurs in tabular crystals, either singly or as penetration twins. It is often embedded in dense masses of limonite (goethite).

Courtesy Tony Smith



#### Off to the smelter

The pyromorphites generally occur as yellow green to green prismatic crystals, some of which have a somewhat curved or "barrel-shaped" appearance. Single crystals up to one inch and larger crystal aggregates have been noted. These, evidently, were fairly loosely attached to the matrix which, perhaps, allowed many of them to escape being shipped to the smelter. Much less common are clusters or groups of prismatic crystals on matrix. Clusters exceeding two or three inches can command quite good prices today. Originally, these may have been more common, but most would have been sent to the smelter.

#### Recent exploration

In the summer of 1975, the site was mined for specimens by Rod Tyson of Tyson's Fine Minerals and John Gorham. They met with modest success, and were able to recover several flats of specimens, as well as innumerable thumbnails. Returning the following summer to try their luck again, they met with a somewhat different result, and were only able to obtain a small number of thumbnails.

**PYROMORPHITE** forms as small, barrel-shaped crystals, and may be green, brown or colourless. Because of the lead content, density is high (7 to 7.3); hardness is 3.5-4. No cleavage, irregular fracture. Streaks white.

Nice specimens have been found in Phoenixville, PA: the Bunker Hill Mine, Kellogg, Idaho, and in Mapimi, Mexico. Elsewhere in Italy, Germany and Australia.

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