

MINERALS AND MINING

IN

GILMANTON, NEW HAMPSHIRE

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The Town was incorporated in 1727. Twenty-four of its incorporators being named Gilman, it was thus called Gilmanton. The Town consisted of 130 square miles (Appendix A). Over the years, parts of Gilmanton became the Town of Belmont and were added to the City of Laconia and Town of Gilford. Today Gilmanton encompasses only 57 square miles.

In 1956 the following Minerals were identified as being found within the Town (Meyers & Stewart, 1956):

Epidote - a silicate yellowish, green or black crystal, a minor rock forming mineral.

Tremolite - a silicate mineral occurring in long bladed crystals which are often twinned. In its fibrous form it was used in the manufacture of asbestos.

Quartz - being one of the most abundant minerals is present in igneous rocks such as granite, rhyolite and granite pegmatite. There are a number of distinct varieties of quartz. A variety associated with opaque red and yellow quartz crystals called Jasper is found in Gilmanton. Jasper is used in limited amounts as a gemstone or as ornamental material.

Tourmaline - slender black crystals of black Tourmaline called Schorl, a silicate of boron and aluminum, usually with quartz deposits. Tourmaline is used as a gemstone when clear and also in the manufacture of pressure gauges (Pellant, 1992).

Melanterite - is a natural green vitriol present in the iron ore beds of Gilmanton. It also occurs at the Palermo mine in North Groton.

Bog Manganese - an impure variety of psilomelane has been found in a number

of deposits associated with bog iron ore. It is also found occasionally in gravel pits as a soft black coating on pebbles.

The term *ore* can be used to describe any naturally occurring material from which a mineral can be extracted *at a profit*. However, the term is usually restricted to metalliferous deposits. Uneconomical deposits are referred to as tailings. In most deposits, the ore is mixed with the enclosing rock matrix, commonly referred to as gangue. After the gangue is removed from the ore and discarded, the ore is usually smelted to extract the metal. Whether a metalliferous deposit is considered economical or not depends on the market value of the metal per unit mass. Market value is a function of supply and demand (Renton, 1994). As you can well image, an emerging town in the 1700's had many uses for iron and small outside sources to draw from.

Magma is the ultimate source of most metals. Metalliferous deposits are usually found within the larger igneous rock bodies or within country rocks. As the magma cools, metals begin to concentrate in the remaining melt. Due to their higher density, the metals separate from the surrounding mush by a process known as Magmatic segregation and settle to the bottom of the magma chamber (Renton, 1994).

About 430 million years ago chemical weathering of the silicate minerals removed iron from the surrounding highlands as soluble bicarbonates and carried it to shallow portions of the sea. Subsequently buried and lithified, the layer was incorporated into the sedimentary rock. One example is the Clinton Iron Ore which extends from New York to Alabama and supplied much of the ore for the early days of settlement of the eastern United States. Throughout the 1800's small furnaces were utilized by the early inhabitants of Appalachia to produce the iron needed.

Minor iron-rich rocks (ironstones) also formed in lakes or bogs (bog iron ore)

(Cvancara, 1995). Bog Iron was produced from the late 1600's in some communities. Gilmanton's iron mining and processing began in 1778 with the smelting of iron from rocks (Frost & Ellingson, 1978).

Iron ore was discovered here and there and was dredged up from small shallow round ponds, part of Crystal Lake (then called Lougee's Pond). It was also taken from the Suncook River bed. Crystal Lake is located northwest of the village and covers 441 acres. It is part of the Suncook River system of the Merrimack Watershed (Appendix B).

The mine shafts were near Sandy Point Beach an area which was a marsh or bog before the dam was built. The ore was "lifted" from its bed 20 feet under water (Hurd, 1885).

On June 5, 1778, the Proprietors of the Town of Gilmanton voted permission to Moses Morrill to mine iron ore on all of the Town's common land and from Lougee Pond for a period of 8 years provided his works be erected and fitted to go into operation in 12 months from that day. They sold him the entirety of Lot 18 of the 2nd Range of the lower 100 acres along with privilege of the stream thereon for £180 lawful money (Lancaster, 1845).

The ore was hauled one and a half miles by oxen to the iron works which were erected at Middle Falls the same year.

Gilmanton ore was smelted into chains, tools and the plows which Mr. John Hussy invented. These plows were an invention that revolutionized farming with a reversible mold board which allowed easy turning at the end of each row. They were found on most farms. Some years later, the Hussey Manufacturing Company moved to Maine and is still in business today. Three blacksmith shops were located nearby having easy access to the iron needed for horseshoes. Ore was also made into iron cooking utensils in fireplaces, door hinges and latches (Shurbert, 1920). Ore from

Gilmanton was also utilized in constructing the anchor on the ship "Old Iron Sides" along with the chain that was strung across the river at West Point to keep the ships from travelling upriver (Hurd, 1885). The existing stove at the main Shaker meeting house in Canterbury was also made in the Gilmanton Iron Works.

From the commencement of these operations, this name of this part of the town was changed from Avery Town to the Iron Works Village.

In 1830 the ore mining operations were discontinued due to the scarcity of the ore, the difficulty in mining it from under water and because it was becoming increasingly easy to obtain materials and supplies from other locations. Slag from the operation can still be found in piles 20' under water in the vicinity of Sandy Point Beach.

Like other towns, Gilmanton also had several small granite quarry sites. Granite was quarried for fence posts, foundation stone, curbing and steps. One of the largest sites was located on Peaked Hill in Gilmanton Corners. Stone was drilled and cut with hand tools, pulled out of its bed and dragged off the hill by oxen. For many years a tale was told that during the 1800's a set of granite steps chosen and cut especially for the entrance to the Gilmanton Academy had been left in the quarry when funds for the project ran out. When the Town voted funds in 1985 for the full restoration of this historic building, the tale was retold by an old timer and plans were begun to include these steps in the restoration plans. However, a thorough search of the quarry site on Peaked failed to turn up any sign of the legendary steps. Truth or fiction? Sometimes it's difficult to tell the difference.

REFERENCES

- Cvancara, Alan M. (1985). A Field Manual for the Amateur Geologist. New York. John Wiley & Sons, Inc.
- Frost, Karl M. and Ellingson, Evelyn M. (1978). Back Porch Tales.
- Hurd, D. Hamilton. (1885). History of Merrimack & Belknap Counties, New Hampshire. Philadelphia. J.W. Lewis & Co.
- Lancaster, Daniel. (August, 1845). The History of Gilmanton. Gilmanton
- Meyers, T.R. & Stewart, Glenn W. (1956) The Geology of New Hampshire Part III - Minerals and Mines. Concord, NH. State Planning and Development Commission
- Pellant, Chris. (1992). Eyewitness Handbooks Rocks and Minerals. New York. Dorling Kindersley, Inc.
- Renton, John J. (1994). Physical Geology. St. Paul, Minnesota. West Publishing Company
- Shurbert, Louise (Place) Dimond. (1920). Recollections of Gilmanton Iron Works