MICHIGAN DEPARTMENT OF NATURAL RESOURCES FEATURE

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LANSING---Somewhere on the vast open waters of one of the Great Lakes, a giant ore boat is steaming southward toward America's steel mills loaded heavy with a special cargo rich in Michigan history.

No man knows for sure which laker carries a particular ton of red rock in her full belly, taken by hardy miners the likes of whom have worked Upper Michigan's generous iron country for 130 years.

But this laker, whose name and crew may be forever unknown, will dock this month at Detroit, Cleveland or Chicago and unload its shipment of iron ore pellets and set a mathematical and economic milestone great enough to brighten up scores of history books.

For this freighter carries the one-billionth ton of iron ore shipped from Michigan's iron ranges, perhaps from the same rock formations where men first hauled ore out of the mines on their backs in 1845.

A billion tons- of ore---based on today's formulas for making steel out of iron ore, that equates to 652,741,514 tons of cold steel.

Another way of looking at it: iron ore mined in Michigan would make enough steel to construct 6,044 Mackinac Bridges! (It took 108,000 tons of steel to build Big Mac.)

"It's a significant event in the history of Michigan, its resources and its people," remarked Robert C. Reed, Mining and Economic Geology Section Chief, Department of Natural Resources, Geological Survey Division.

"Strangely, shipment of the one-billionth ton of Michigan iron ore is passing low-key to what it probably should," Reed added. "That may be unfortunate, but it is understandable. How many people have really thought of what Michigan's iron ore has meant to the building of this country---its impact on our economy and national security?"

The answer to Reed's question may be unanswerable. In dollar value, the raw ore itself is roughly calculated at $5 to $6 billion, all things over a 130-year period considered, Reed says. (All together, at today's prices the ore would be worth more than $14 billion, Reed said.)

"Railroads can't operate without steel tracks, homemakers may have felt uneasy frying eggs and bacon without an iron skillet, sewers couldn't have been built without iron and steel casings, our armies wouldn't have won wars without cannons and cannon balls, battleships or tanks," said Irvin V. Kuehner, also a DNR geologist.

"Factories, farms, homes, stores, practically everything connected with our way of life has been associated with the products of iron ore," Kuehner continued.

Michigan, of course, has long contributed in a big way to all of this. The first important deposits of iron discovered in the U.S. were found in Michigan in the early 1840s, and even today the State's mining of the ore ranks next only to Minnesota's famed Mesabi Range in North American production.

For many years, Michigan's iron mines were world leaders in production, and although mining in one of the State's three major ranges has stopped, Michigan iron ore output still ranks in the top 10 areas world-wide.

Iron is one of the most abundant metals found on earth, but it is found in few places where quantities have been concentrated enough to be produced economically, says Reed. The earth's crust contains about five percent iron---the largest amount of any metal except aluminum, he noted.

Its discovery in Michigan was nearly by chance. While Indians had found and made use of copper thousands of years before Europeans settled in Upper Michigan, it was not until 1841 that probabilities of the ore here was noted.

Douglass Houghton, the first State Geologist and after whom the famous Keweenaw Peninsula mining town is named, "suggested" in his 1841 expedition report that iron was present in the hills and mountains of the Marquette area.

But it was Houghton's assistant, William A. Burt, who identified the first chunk of iron ore in 1844 while surveying hear Teal Lake at Negaunee in Marquette County.

Here is an account of the discovery, recorded in Michigan Pioneer and Historical Society papers:

> "On the morning of the 19th of September, 1844, we started to run the line south between ranges 26 and 27. As soon as we reached the hill to the south of the lake, the compassman began to notice the fluctuation in the variation of the magnetic needle…At length the compassman called for us to 'come and see a variation which will beat them all.' As we looked at the instrument, to our astonishment, the north end of the needle was transversing a few degrees to the south of west. Mr. Burt called out, 'Boys, look around and see what you can find!' We all left the line, some going to the east, some going to the west, and all of us returned with specimens of iron ore, mostly gathered from out-crops."

Found was part of the still prosperous Marquette Range, which ran 33 miles long and from 2 to 5 miles in width, and which yielded between 1345 and 1974 some 427,183,498 tons of iron ore, according to records charged with Reed.

The Marquette Range ore was very hard hematite, according to geological descriptions, and was like iron later found in the Menominee (1848) and Gogebic (1883) ranges, geologically of Precambrian Age---in a category of the world's oldest rocks, dating more than 2,000 million years in age.

Michigan's Upper Peninsula first built its civilized life around the early and continuing iron, and copper, mines. The Jackson Mining Company was the first business established in the pursuit of iron, founded in 1845 near the 1844 discovery site. The company's first forge was constructed on the Carp River in 1847, and erected another at Marquette in 1849, the same year it built Michigan's first blast furnace---Pioneer #1---also at Marquette.

Simple picks, hammers and drills were the tools miners used to slowly attack the earth's crust, Michigan Pioneer and Historical Society records indicate.

> "Mining for copper and iron was their sole business; all of their energies were expended thereupon. The progress they made was slow. They encountered many difficulties, met with many discouragements, endured many privations. Vast sums of money were expended; there were successes and failures."

From there the ore was shipped to Sault Ste. Marie where tramways were used until the locks were completed in 1855 to get the ore down the St. Mary's River, into Lake Huron and an open course to ports of the Great Lakes.

In all, there were 217 iron mines in the Upper Peninsula dug into the three ranges. Shipments have come from the Marquette Range every year since 1845 and the Menominee Range every year since 1874 (55 tons was the first shipment while 2,521,880 tons were recorded in 1974).

The Gogebic Range was mined from 1884 until 1967, totaling through 83 years of operation 255,224,103 tons of ore. Through 1974, the Menominee Range yielded 311,232,305 tons.

Reed said two underground iron ore mines are still in operation---the Mather at Negaunee (3,600 feet deep) and the Sherwood at Iron River (1,900 feet deep).

But with the new Tilden Mine and the expansion at the Empire Mine, both open pit operations in Marquette County, Reed forecast Michigan's iron ore production for 1975 at approximately 17 million tons, up from 11.5 million tons in 1974.

Exact shipment figures from the Marquette and Menominee Ranges won't be available until January, however, Reed said.

Note to Editors: Records of annual shipments from all of Michigan's iron mines from 1845 through 1974 is available upon request from the DNR Information-Education Division.