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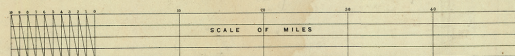
Mapping Isle Royale

MAP
OF THAT PART OF THE
MINERAL LANDS
ADJACENT TO
LAKE SUPERIOR.
CEDED TO THE
UNITED STATES

BY THE TREATY OF 1842 WITH THE CHIPPEWAS.

C. B. Goddard & Co. Washington, D.C.

1849



INDIAN
TERRITORY

CHIPPEWA INDIANS

UPPER
CANADA

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FOND DU LAC SUPERIEUR

ATONILE ISLANDS

627 feet above the level of the sea
785 feet in depth.

Comprising that District lying between
CHOCOLATE RIVER AND FOND DU LAC,
under the superintendency of
GEN: JOHN STOCKTON, U.S. AGENT.

Projected and drawn under the direction

LIEUT COL: GEORGE TALCOTT,
Ordinance Bureau.

A. B. Crook, assisted by John, 1848

Compiled from surveys and explorations made by direction of the War Department
under the superintendency of the U.S. Army at Copper Harbor: from U.S. surveys
made by D. Houghton and W.A. Bart Esq; from Nicollet's map of the Upper Mississippi
River; and from Bayfield's charts of Lake Superior: With accompanying Report of 1842.

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WILLIAM IVES & THE MAPPING OF ISLE ROYALE

Isle Royale, or “Minong,” and the waters and islands surrounding it are part of the ancestral lands of the Grand Portage Band of Lake Superior Chippewa. In 2019, they were listed in the National Register of Historic Places as Minong Traditional Cultural Property.

The island did not become part of the United States until the 1842 Webster-Ashburton Treaty with Great Britain. That same year, the United States and representatives of the Ojibwe Bands of Lake Superior and the Mississippi River signed the Treaty of La Pointe. The treaty ceded extensive tracts of land and Lake Superior to the U.S., including the northwest part of Michigan’s Upper Peninsula. It also included Isle Royale, but unaware of the Webster-Ashburton boundary, the negotiators did not invite the Grand Portage Band to the treaty talks. The error was corrected in 1844 when the U.S. and the Grand Portage Band signed the Isle Royale Agreement, amending the 1842 treaty and giving the band the same ability as the other signatory bands to retain their hunting, fishing, and gathering rights and receive annuities.

As the Isle Royale Compact was being signed, surveyor William Austin Burt

employed William Ives as his compass man to survey the inland Huron Mountains area of Marquette and Baraga Counties. Born in Massachusetts in 1817, Ives, along with his older brother, Holmes, began his Michigan surveying career as a chainman in 1839. At 27, Ives was eager to work with veteran surveyor Burt, who was

1847 map of mineral lands ceded to the United States by the treaty with the Chippewa in 1842. It was compiled in part from surveys made by Douglass Houghton and William Burt and from Henry Wollsey Bayfield’s charts of Lake Superior.

BY LESLIE S. EDWARDS



known for his work with mineral lands in Michigan and Wisconsin and had applied his knowledge of astronomy to the art of surveying, inventing the solar compass in 1835.

Ives's 1844 journal, housed in the Archives of Michigan, provides a daily personal account of the survey. The team left Mackinac on August 5, "about noon in an Old Batteau," and headed west along the north shore of Lake Michigan. A week later, they reached the Escanaba River, landing at "an Old Sawmill of five years standing." They built a small, flat-bottomed boat suitable for traveling the river with their provisions. The team portaged over rapids and falls, "towing and lifting the Boat for five days Steady." In September, Ives wrote that he had "run a thorn in my knee." While it laid him up for several days, he also worked through the pain, traveling an average of five miles per day, even through six inches of September snow. The 1844 survey was significant for Michigan's economic future. Burt is credited with the discovery of iron ore at Teal Lake on the Marquette Range. Ives, by his side, wrote: "... the last 3 miles the needle could not be used on account of the attraction of the Magnetic Ore."

After Douglass Houghton drowned in Lake Superior in 1845, veteran surveyor Bela Hubbard agreed to complete his work and chose Ives to return to the Huron Mountains and meander the Lake Superior shoreline. Ives left Detroit with a party of five men on May 12, 1846. When they arrived in Sault Ste. Marie, Ives "engaged Passage for all of my party & shipment of all the provisions." During the survey the team camped throughout the Huron Mountains, usually along the rivers. They surveyed the tiny Granite Island in Lake Superior. Ives corrected previous section line errors. Although the survey ended on October 26, Ives continued to work for Hubbard until January 12, 1847, packing the geological specimens he collected and writing and copying his notes.

The 1846 survey gained Ives a reputation as a meticulous and accurate surveyor. He applied to Lucius Lyon, Surveyor General for the State of Ohio, Indiana & Michigan, for his

own contract. Lyon "said he could give me work provided the U S government made the amount of appropriations which he estimates." On March 1, 1847, Congress approved the continuance of the geological survey of the Lake Superior Land District, which included Isle Royale. In mid-March, Lyon, who readily acknowledged Ives's well-executed work with Hubbard, offered him a contract to subdivide Isle Royale. Ives became the deputy surveyor on April 23, 1847. Lyon's scope of work included "minute and thorough exploration" of the geological formations on the island, particularly the rich mineral veins, as well as "the American islands adjacent to Isle Royale as

An early survey map with an overlay of Ives's work

will probably sell for at least twice as much as will pay for the scope of your work." An experienced surveyor could make upwards of \$3,000 a season, from which he had to pay his axe men, chainmen, compass men and packers, as well as provide their provisions and passage.

On May 14, the six-man survey party took passage on the steamboat *Samuel Ward* bound for Sault St. Marie. They arrived at Isle Royale six days later, where Ives observed "skirts of ice" along the shoreline. They set up camp near the mining grounds of the Ohio and Isle Royale Mining Company at Rock Harbor. On May 22, Ives's survey party

began its work at Chippewa Harbor. Though buds were forming on the tree branches, springtime on Isle Royale meant cold rains and icy, snowy conditions.

Being a surveyor on Isle Royale in 1847 was not an easy job. Elevations on the island range from 600 feet at Lake Superior to almost 1,400 feet along Greenstone Ridge. The team traversed rugged, steep, craggy volcanic rock ridges on foot, without the benefit of pack mules or horses. They encountered numerous small lakes and waterways and had, at times, to build rafts to cross them. Surveying during summer months also meant incessant sand and black flies. The packers traveled regularly to obtain provisions from their stores at Rock Harbor, and the men fished or hunted for



Wedding portrait of William Ives, 1853.

Isle Royale

LAKE SUPERIOR

Camped
July 6

Log houses

Camped
June 17Camped
June 14.
"The flies
were thick."Camped on a
path, June 16Camped June 11. The
needle could not be
used so they surveyed
six miles by the sun.Ohio & Isle
Royale Mining
CompanyCamped
June 12Union & Isle Royale
Mining Company. There
was a dock there, four
dwellings and a garden.Camped on
the small
island

Raft crossing

Camped June
15. "The flies
were very thick."Camped at Indian camp
ground on May 23Camped in
Rock Harbor
SE side section
33 on June 20Camped south
side of a bay, north
side of section 35
on June 19LAKE
SUPERIOR

Trace

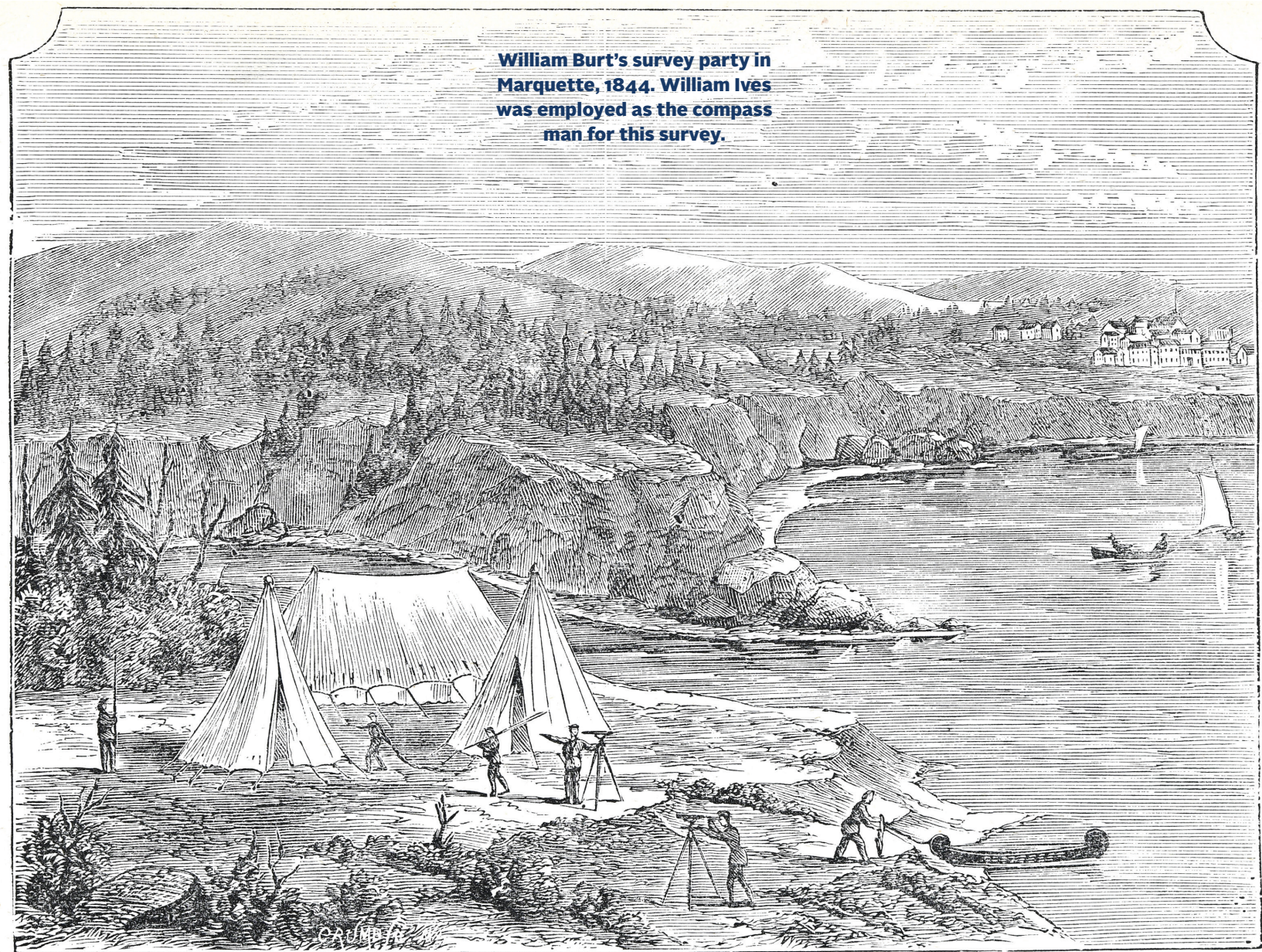
food. On one occasion, they “lost their trolling hooks after catching 22 trouts [sic] with it.”

On July 4, the team began its survey of the northern Amygdaloid Island. They celebrated Independence Day with “lemonade without any spirits except natures spirits which we all enjoyed.” By the end of July, they had camped for several days at “an old fishing establishment (probably of the Indian and French)” where Ives wrote up his notes and made maps. The northeastern portion of the island was complete.

On September 30, the party moved its provisions to the Ohio & Isle Royale Mining Company at Rock Harbor for storage through the winter months. Ives wrote, “I left my boat in charge of the Company to be taken care of. There was with it a centre board, rudder, one good Oare [sic] & two old ones, one of which was broken.”

When Ives returned to Isle Royale in the summer of 1848, he found his boat, crucial for navigating around the perimeter

Continued on page 16



BURT'S SURVEYING COMPANY (with Marquette in the distance).

1847

Outfit for a Surveying party to go to Isle Royale Lake Superior Mich

Things	Price	Remarks
1 Solar Compass	\$115.00	Bot in 1842
1 Solar Compass	100.00	Bot of J L Wright
2 Chains	5.00	Made by Davis
14 Tally pins	3.00	8 old ones
2 Tally belts	75	Bot of Hubbard
3 Marking iron	1.25	1 6/2 of Hubbard
2 Axes	2.25	1 old one of Hubbard
2 Geo hammers	1.00	
1 Kit small tools	1.00	
1 Boat & outfit	50.00	
Cooking utensils	6.00	50 worth of Hubbard
1 Tent	3.00	Homemade
7 Blankets	15.50	50 old ones of Hubbard
20 Yds Spare cloth	2.75	
2 Pocket compasses	1.25	1.50 & 1.60
2 sets Pack straps	83	Bot of Hubbard
Standard chain	2.00	Agreed upon & brought for one made
Field Books	9.00	
Extra Paper	25	

Things	Price	Remarks
2 Bottles ink	2.5	
Protractor & dividers	3.00	on hand
7 Bbls Pork	91.00	Bot of J L Wright
14 Bbls flour	62.30	\$4.45 in Eastern funds
1 Bbl Apples	3.00	3 1/4 per Bush
6 Bush Beans	6.00	Sold 1/2 Bush
120 lbs Sugar	12.25	
10 lbs Tea	7.20	Bot of A. Ineson & Co
24 lbs Coffee	2.40	Bot of A. Ineson & Co
2 lbs Pepper	.40	Bot of A. Ineson & Co
20 lbs Saleratus	1.33	
Specimen -		
Wrapping paper	.75	Bot of A. Ineson & Co
4 Pork bags	1.25	Self made
Flour bags	.50	Self made
Small bags	.50	
Wood Pencils	.50	1/2 Dozen
India rubber	.06	
2 Bone Ribs	.50	
Alum	.03	1/4 lb
5 lbs Soap	5 lbs 30	Bot of A. Ineson & Co
Thread	63	1/2 lb best linen

TOOLS OF THE TRADE

An outfit—or supply list—for a surveying party to go to Isle Royale, 1847.

A surveyor had to be at home in the woods and swamps, as well as willing and able to travel up to seven miles per day in inclement weather. Measurements were made with a chain and compass. Each township and section boundary was blazed or

marked on trees or sometimes rocks. This enabled eventual settlers to locate clear landmarks to their property. Survey equipment consisted of chains, marking pins, axes, compasses (both solar and magnetic) and various other tools. They were carried by

“packmen,” who also had to carry food and supplies for shelter—blankets, tents, barrels of salt pork, flour and beans, and cooking utensils. The surveyor’s field notebooks, paper, and writing utensils were usually carried in a waterproof box.

of the island, “strip[p]ed of everything but the body. Mr Talbot had charge of the Isle Royale and Ohio Mining Company’s works. He had irons and rudder made for my Boat” and helped ready it for use at no charge. In late July, the team completed the survey of Isle Royale and set out for

La Pointe, Wisconsin.

Traversing Lake Superior could be treacherous. Ives wrote that after traveling

about 15 miles, “It blew so strong that the oars could not make much headway. Hoisted sail & run with the wind ... the seas were as large as the Boat could bear with any degree of safety. We landed at noon [on an island] glad to escape & wishing never to try the same over.” In mid-afternoon, they set out again into heavy seas but after traveling only three miles, were forced ashore at a steep bank, 25 feet high with “large blocks of rocks in the edge of the water.” They struck one of the rocks and “all jumped into the water and saved Boat & all

The “Three Sisters” at Rock Harbor on Isle Royale, 1868

William B. Holmes, photographer

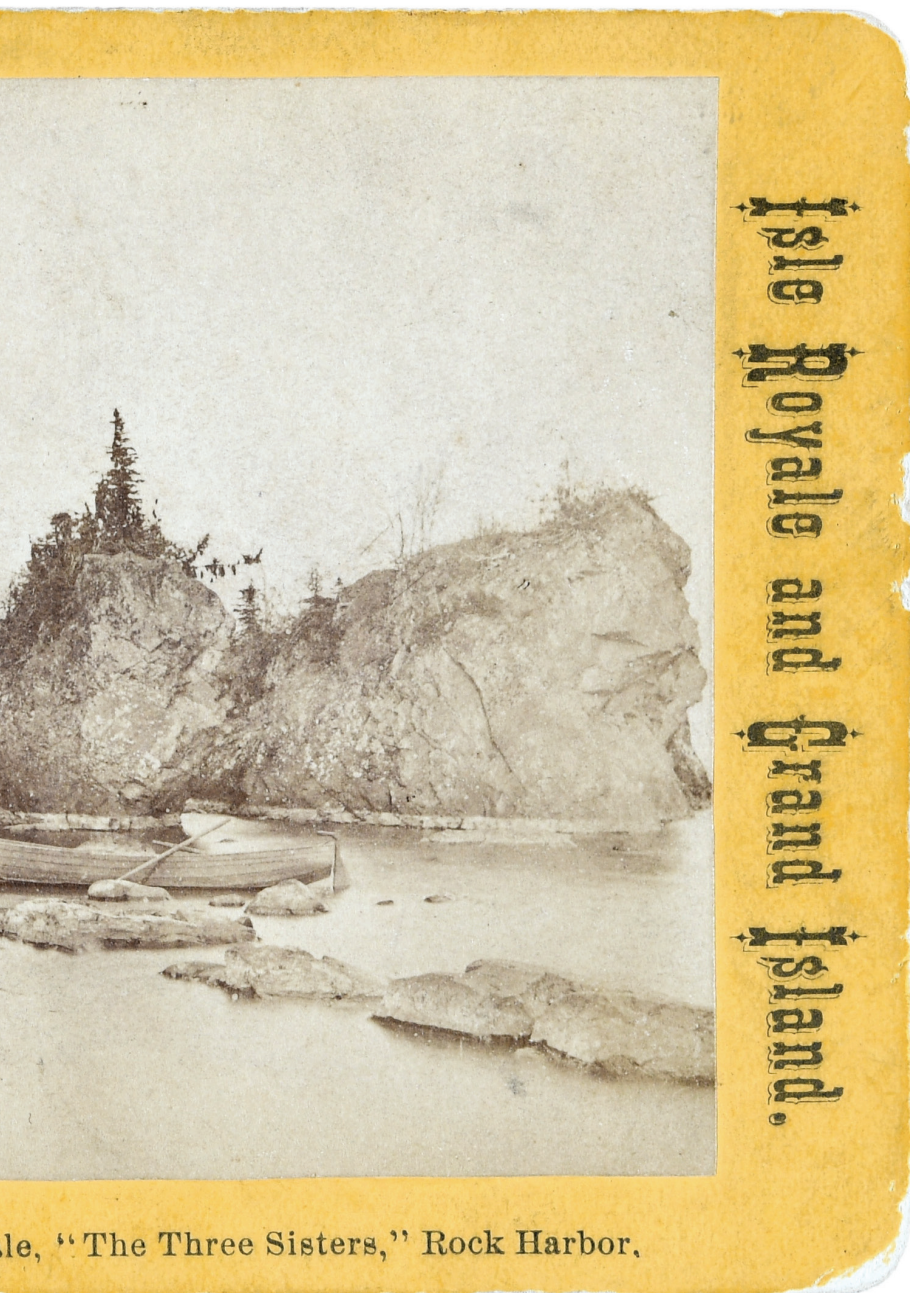
Curiosities of Lake Superior Scenery.



No. 4329—Isle Royale

things But the boat got two or three hard thumps. Camped and talked of passed dangers.”

Ives stayed in La Pointe for several weeks. La Pointe was larger than he expected, with “one or two hundred houses in two or three village clusters. The American Fur Company have the most buildings of any one Company. There is a Catholic Church and Indians in Wigwams all around. There is more Indians in & around La Pointe than at any other place on Lake Superior. Some four thousand collect here for pay-



le, “The Three Sisters,” Rock Harbor,

ment”—of the annuities due from the Isle Royale Compact.

Ives received \$3,331 for his work in 1848. His five field notebooks and the survey maps were sent to the Surveyor General at Detroit where the office made duplicate copies and sent them to the Bureau of Land Management in Washington, D.C. In 1850, officials asked Ives to take a leading role in the new General Land Office surveys in Oregon. Ives’s younger brother Butler and former survey assistants Joseph Hunt, Robert Hunt, Loren Williams, and Robert Breboort accompanied him. The party traveled to Oregon in 1851 where they surveyed the northern leg of the Willamette Meridian to Puget Sound and the Coast Range to the Cascades.

Ives received subsequent contractual offers in the Willamette Valley. However, not wanting to spend a second winter in Oregon, he returned to Michigan in late 1852. He married Sarah Hyde the following spring. They settled on Grosse Isle where Ives farmed and sold produce until 1874. He also served as postmaster (1859–1861), Montaugon Township Supervisor (1860–1864, 1867), and Wayne County Surveyor (1863–1865). After Sarah died of cholera in 1864, Ives married her younger sister, Lydia. Ives died on Grosse Isle of pneumonia at the age of 57, leaving property valued at \$27,000 to his five daughters.

Ives’s Isle Royale survey maps and field notes are important research materials, especially when coupled with his personal journals. They record Indigenous camps and fishing grounds, trails, and 19th century mining companies. Visitors to the largest island in Lake Superior, a National Park (1931) and a UNESCO International Biosphere Reserve (1980), can still find evidence of the features Ives mapped nearly 200 years ago. Although William Ives has been largely overshadowed in Michigan by more prominent surveyors, a small lake in Marquette County is named after him. He is also honored by a stone bench at Willamette Stone Park in Portland, Oregon. William Ives took on some of the toughest survey work in Michigan and excelled at it. His field notebooks and one copy of his survey maps have been digitized and are available at Michiganology.org. His personal journals can be accessed in the reading room of the Archives of Michigan.