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ISLE ROYALE

A SPECIAL ISSUE

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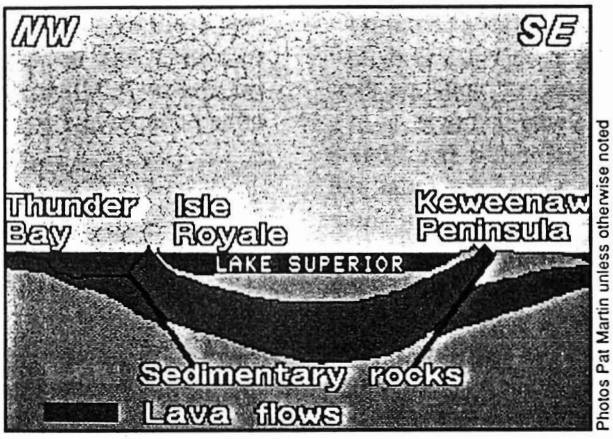
MINING on MINONG

COPPER MINING ON ISLE ROYALE

The copper-bearing geological deposits of Isle Royale mirror those of the Keweenaw Peninsula. The backbones of both the Island and the Keweenaw are made up of several hundred volcanic flows, interspersed with layers of sedimentary rock that dip beneath the lake, forming a characteristic linear ridge and valley topography. Though there is still some question among geologists about the precise mechanisms of copper deposition, these Keweenawan Series volcanics, which date from approximately 1.5 to 0.8 billion years ago, are the source of the metallic copper that has been mined in this region for centuries. Native copper, as it is called, occurs in other places around the world, but it does not appear in quantities or deposits anywhere else in the world as large as in the Keweenaw region.

Lake Superior copper attracted the attention of Native North Americans for thousands of years before Europeans reached this continent. It also provided the base for an important mining industry during the nineteenth and twentieth centuries. Recent research efforts in Isle Royale National Park have concentrated on the physical evidence left behind by both prehistoric- and historic-period users of Isle Royale, providing a fresh view into the lives of the people who extracted red metal from the hard rock of the Lake Superior region.

Since 1986 the Isle Royale Archaeological Project, a cooperative effort of the National Park Service's Midwest Archeological Center and Michigan Technological University's Archaeology Laboratory, has sought to broaden the understanding of past human occupation on Isle Royale. Building on decades of research amassed by several institutions and individuals, this project has revisited sites reported by others, located dozens of previously unknown sites and carried out test excavations at several selected places where people lived and worked.



Photos Pat Martin unless otherwise noted

Isle Royale is composed of volcanic rock interspersed with layers of sedimentary rock.

The archaeological remains range in size and complexity from large, stable prehistoric settlements, like Indian Point in McCargoe's Cove, to small campsites that probably represent a single episode of occupation by a traveling family or a small group. Some nineteenth-century mining complexes, such as the Minong and Windigo mines, spread over hundreds of acres, while others are scattered exploratory pits left by parties searching for promising mineral veins. There are remains of commercial fishing operations, some with a dozen buildings and others that consisted of only a single cabin. There are remains of hotels, resort cabins and even a golf course left by recreational users of the Island during the past century.

The artifacts range in size from a steam engine still sitting in place at the Island Mine, to a flake of jasper taconite—a stone chip left by a prehistoric hunter sharpening a stone tool.

Rather than attempt a comprehensive review of this large body of information, this article focuses on the Siskowit Mine site, which is a good exemple of Isle Royale archaeology. The archaeological record shows that the Siskowit site was a favored campsite for prehistoric people, and that the bedrock outcrop of copper-bearing rock was extensively mined during prehistory. Early commercial fishermen also chose this locality as a base of operations during the nineteenth century, and it was the focus of one of the first relatively successful Euro-American mining operations in the region. Furthermore, its location along the shore of Rock Harbor between the Three Mile and Daisy Farm campgrounds makes it one of the most accessible sites within the park for modern visitors seeking to visit a place with significant ties to the past.

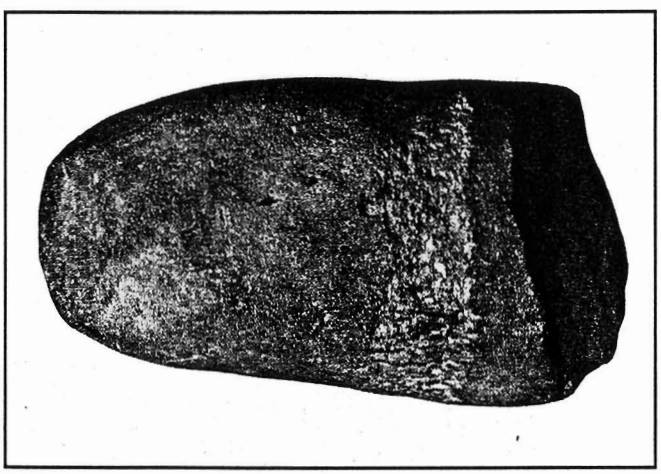
By Patrick E. Martin

Prehistoric Life at the Siskowit Mine

An archaeological team from the University of Michigan visited the Siskowit Mine in 1962 as part of a broad-area survey for the National Park Service (NPS). They located several depressions that they identified as aboriginal mining pits. Next, they excavated a trench across one of them, revealing a six-foot-deep mine on a fissure of copper-bearing rock. In the rotted forest litter that filled the pit, they found sixteen stone hammers used to break the copper free from its rocky matrix. They also collected charred wood samples from the bottom that yielded a radiocarbon date of approximately 1400 B.C. This age estimate corresponds with evidence from other sites that suggest that copper was mined in the Lake Superior region at least 3,000 years ago, and probably earlier.

Exactly when and where Native Americans first recognized the attractive properties and natural distribution of copper remains obscure. Archaeologists agree that, based on the presence of copper tools in habitation sites of that age, copper was widely used in North America by at least 3000 B.C. But no sites of that great antiquity have been encountered on Isle Royale. The 1400 B.C. date for mining at Siskowit is consistent with radiocarbon dates from both mining and habitation sites elsewhere on the Island. The fact that older sites are unknown does not preclude their existence; we may simply have not found them yet.

In the summer of 1985, the year before the Isle Royale Archaeological Project began, a team of divers found the wreckage of a small airplane that had crashed offshore from the Siskowit Mine fifty years earlier. During the survey diver Scott McWilliam noticed a ceramic vessel lying on its side. McWilliam knew it was a prehistoric pot. It was removed and research confirmed it was manufactured and decorated in Juntunen-style, which was first recognized on Bois Blanc Island in the Straits of Mackinac.

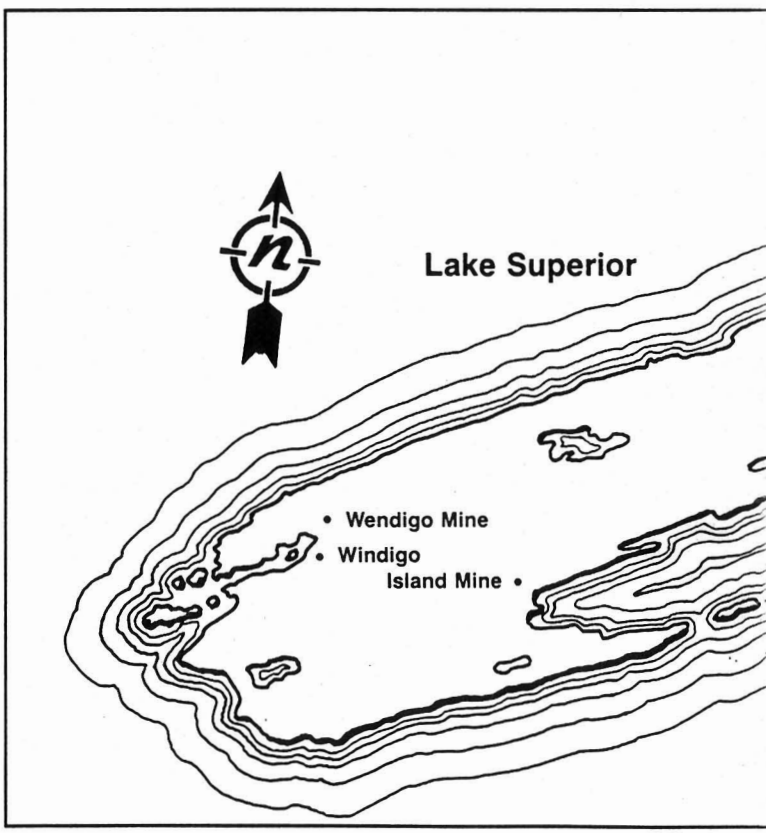


Prehistoric Indians on the Island used stone hammers, like this one, to break copper from its rocky matrix.

Small samples of food residue charred on the inner rim of the vessel were dated using a sophisticated radiocarbon technique. The analysis indicates that this pot was last used in the early thirteenth century, about 1210 A.D. Precisely how it found its way to the bottom of Rock Harbor is a matter of speculation. However, its presence focused attention on the Siskowit Mine site as a place where prehistoric people lived and mined.

Excavation in 1986 and 1987 in the grassy, level areas near the shore confirmed this speculation. Cultural material datable to the Late Woodland Period, including more Juntunen pottery, verified that the site was occupied on more than a casual basis. Copper was present in its natural form, as were finished artifacts and waste fragments left from manufacturing activites on the site. In addition to copper, domestic refuse such as the bones of fish and mammals, remains of several pottery vessels, flakes and stone tools and the charred soils of fire hearths suggest a stable, if not permanent, occupation.

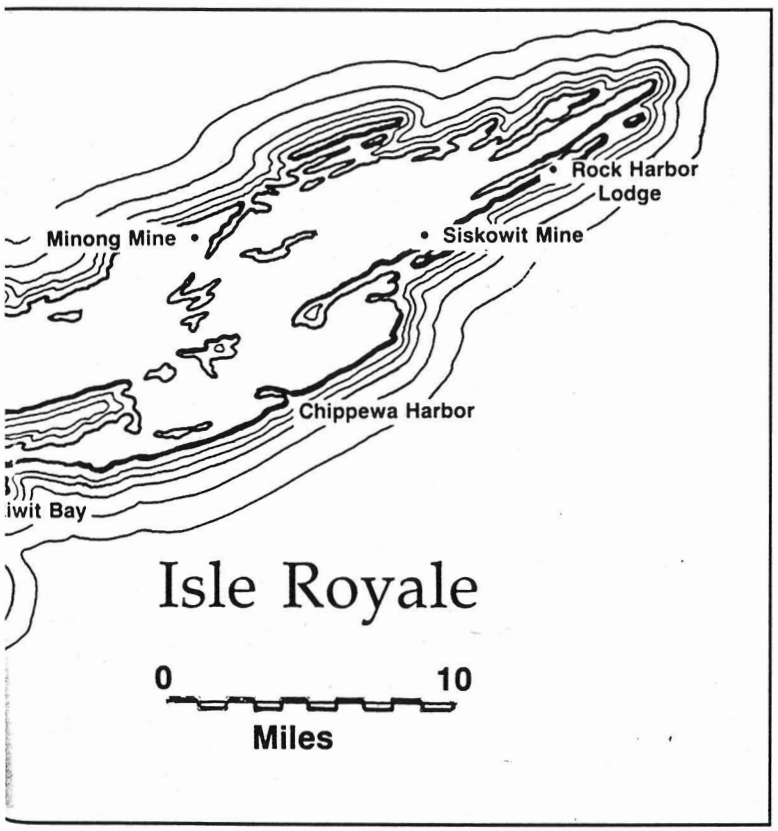
Radiocarbon evidence shows that the occupation extended over several centuries. It remains unclear whether copper was the primary stimulus that drew people to this place or if mining was simply one aspect of the lifestyle practiced by people who chose to live here for other reasons. It is clear, however, that the groups who lived at the Siskowit Mine site and other Island locations who mined copper and fished in the harbors, were people with



strong ties to other social groups around the region. The types of pottery, stone and copper tools, food remains and other material left behind identifies the inhabitants with cultural traditions that are well-known throughout the upper Great Lakes. The observation is important since it runs directly counter to the speculative conclusions often put forward by popular writers treating prehistoric copper mining. These miners were assuredly not mysterious nomads, members of lost races, Vikings or Aztecs; they were Native Americans.

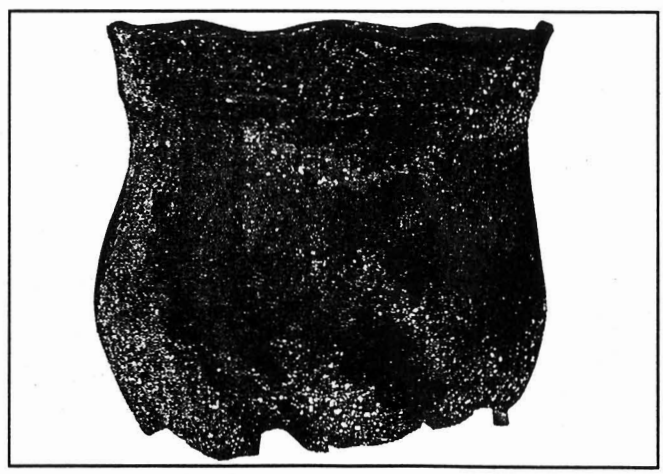
Historic-Period Fishing in Rock Harbor

While the earlier inhabitants and visitors to Siskowit left artifacts and physical traces of their presence, the later users of this place generated a documentary record in addition to archaeological evidence. Among the earliest Euro-American users of the Island's resources were commercial fishermen. Undoubtedly guided by native people, the fur-trading companies that operated on the Great Lakes in the eighteenth century established fishing outposts on Isle Royale. There are unconfirmed clues that agents of the Northwest Fur Company fished on the Island before 1800. There is unequivocal documentation that the American Fur Company did so by 1837. Company records, correspondence and the journal of an employee, Gabriel Franchere, describe the seven stations established before 1839.



Because of its proximity to the excellent fishing found in nearby waters, the main post for Island operations was at Checker Point, in Siskiwit Bay. Smaller outposts were built at Belle Isle, Merritt Island, Grace Point, Duncan Bay and Hay Bay. A substantial storage and shipping facility was sited at the Siskowit Mine site. The documents suggest that the protected, deep harbor and its central position among the scattered fisheries made this location attractive. It also seems likely that the company's Indian employees had prior experience fishing from this place. All of the American Fur Company's stations show evidence of previous occupation by native peoples. At any rate, the company constructed a dock, a warehouse and a log house for the four men who lived and worked there.

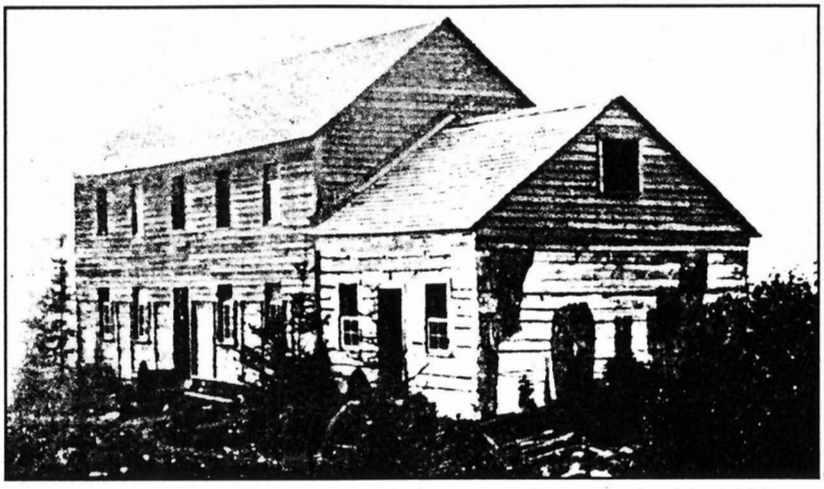
The American Fur Company's fishing efforts at Isle Royale and their other stations on western Lake Superior were successful for a time. In fact, they were somewhat too successful for efficient management. In the early years, they often caught more fish than they could pack. In addition to a shortage of salt and barrels for packing the fish, the company had a single schooner on Lake Superior, the *John Jacob Astor*, which was often incapable of transporting the entire catch during the short shipping season. As a result, hundreds of barrels of fish were left on the Island for the winter, many of them ultimately lost to spoilage. Additional vessels were built, and the annual production eventually exceeded 5000 barrels, with most of this catch sold in the southern Lower Peninsula and Ohio. However, the economic depression that gripped the Midwest during the late 1830s effectively dried up the market for fish, and the American Fur Company ceased commercial operations in 1841. The Lake Superior posts supplied fish for the company until the late 1840s, but the initial period of commercial fishing on Isle Royale had ended.



This prehistoric Juntunen-style pot was discovered offshore from the Siskowit Mine site in 1985.

Euro-American Mining Begins

The earliest French visitors to Lake Superior learned of the region's copper deposits from native people in the seventeenth century. Throughout the succeeding two hundred years, each national government with interest in the area and virtually all of the individual visitors to the region sought evidence that commercial-scale mineral exploitation would be possible. The unique physical characteristics of the copper deposits and the isolated, wilderness character of the region combined to prevent effective understanding or exploitation until the mid-nineteenth century. Despite several earlier attempts, the active development of the copper district began only after State Geologist Douglass Houghton reported on his extensive geological explorations of the Keweenaw Peninsula in 1841.



Bentley Historical Library, Ann Arbor

This Siskowit Mine Company building was photographed in 1868.

The area was formally opened for mineral exploration after the Chippewa ceded the lands south of Lake Superior to the United States in the 1842 Treaty of LaPointe. Hundreds of prospectors and speculators soon joined the few who had already entered the region. Most converged on the nascent settlement of Copper Harbor at the tip of the Keweenaw. The government established a Mineral Agency there in 1843, and it constructed Fort Wilkins in 1844 to maintain order and affirm the government presence. Dozens of speculative companies received exploration permits and a number filed for leases of the government-owned land. This permit/lease system for mining lands—a system where the government allowed exploration of specified lands and collected rent in the form of a percentage of the mine's product—had worked successfully for two decades in Wisconsin's lead district. The U.S. Army's Ordinance Department administered the Mineral Agency for three years. But after the government realized that the system was inefficient in the Copper Country, the lands were offered for sale through the General Land Office.

The first permits for Isle Royale exploration were issued in July 1843, when Mineral Agent General Walter Cunningham and "nine persons of character and property" visited Isle Royale and subdivided the entire Island into forty-three claims in the names of these men and their associates. The original claimants included Cyrus Mendenhall, a man who played an important role in the subsequent development of the Siskowit Mine. Surveying, housebuilding and exploration began at once. But significant work was forestalled by the Grand Portage Chippewa, who protested that they had been misrepresented at LaPointe and refused to relinquish their claims to Isle Royale. It took two years to resolve this protest, which effectively blocked establishing mines on Isle Royale.

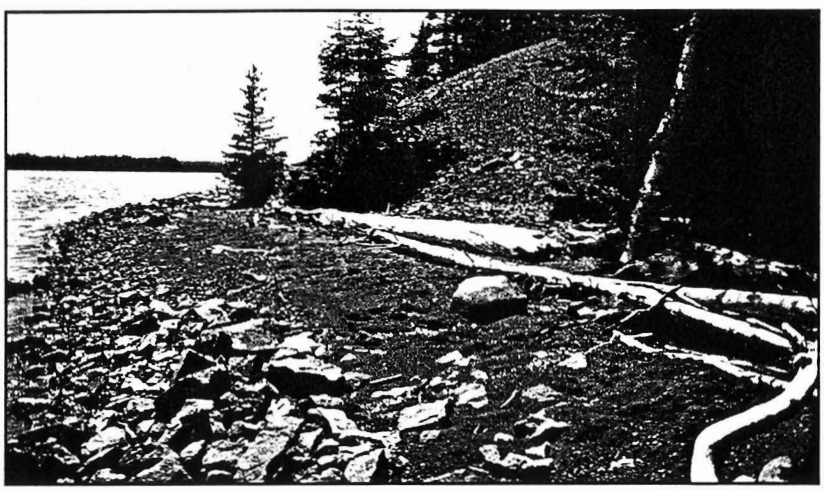
Further difficulties arose when interested parties questioned the procedures followed by Cunningham in the initial issuance of permits. The questions were serious enough for the U.S. secretary of war to order that no permits or leases be granted. Mendenhall and others maintained a presence on the Island despite the lack of official sanction. In fact, Lt. Colonel G. Talcott, Cunningham's replacement as Mineral Agent, reported that Mendenhall's party was in unauthorized occupation in the summer of 1845 and recommended their removal, by troops, if necessary.

Mendenhall's group was called the Isle Royale Union Mining Company. They "located" on six three-mile square parcels of the Island selected during the 1843 visit. In 1846 they sold their interest in the Isle Royale holdings to a group named the Siskowit Mining Association. During the summer of 1847, the Association began serious development of their property on Rock Harbor under the direction of Charles Whittlesey. Two years later the company reorganized under the name of the Siskowit Mining Company and operated until the mine closed in 1855. Since it was often necessary to generate operating capital and to convince skeptical stockholders that their investments were in capable hands, this pattern of sale, organization and reorganization of companies is a common feature of development in mineral regions.

Whittlesey and his crew of laborers, a carpenter and a blacksmith, made immediate use of "a good log-cabin, which fishermen had erected there," presumably one of the buildings abandoned by the American Fur Company.

They quickly built a blacksmith shop and began exploration of the mineral-bearing veins within their lands, especially those near the cabin. While other deposits near McCargoe's Cove on the north shore of the Island, in Washington Harbor on the southwest end and on Mott Island just across Rock Harbor seemed initially promising, the company ultimately concentrated all of its efforts on the Siskowit Mine site.

Whittlesey and his successors sunk several shafts on two parallel veins. The work force, which included as many as fifty-two men, erected a steam engine to pump water from the underground workings and power a stamp mill to process the copper-bearing rock. The crushed rock was washed over a series of screens and a metal-rich concentrate was collected for smelting. The Isle Royale and Ohio Mining Company constructed a smelting furnace about two miles down the harbor in 1848, which is where the Siskowit sent its concentrate for final processing. The smelter was unfortunately a failure, and subsequent smelting was accomplished in Detroit, Cleveland or one of several east coast cities where more sophisticated facilities were established.



The stamp sand remains at the Siskowit Mine are still evident today.

Between 35 and 40 feet below the surface, the copper veins passed into a different rock stratum and "pinched out" or disappeared. They did not reappear with any substance within the seventy-foot depth that the main shaft attained. Miners extended drifts or horizontal connections between the shafts on at least two different levels and removed the metal-bearing rock within the veins. Some copper was disseminated through the veinstone in small pieces and had to be separated by the stamping and washing process. Other larger pieces, the so-called barrel works, were simply broken out by hand and placed in barrels for shipping to the smelter. Single masses of copper found at the Siskowit were as large as six-hundred pounds.

During nearly a decade of operation, the Siskowit Mine sold over 190,000 pounds of refined copper. However, it never paid its stockholders a dividend on their investments. Despite its initial promise, the excitement about its potential and the considerable production of copper, this company failed to make a profit. This was true with many, if not most, of the mines in the district, especially during the early years of production. The high capital costs of operating a hard rock mine, the uncertainty of the extent of the ore below ground, the volatility of the market and the expenses of doing business far from centers of population combined to prevent these operations from thriving. Some authors have contended that Isle Royale was a particularly hard place to succeed at mining, because the Island was "too tough to tame." The several failed mining ventures on the Island have parallels on the Keweenaw Peninsula. But even though it paid no dividends, the Siskowit Mine operated for almost ten years, employed a number of men and produced nearly 100 tons of copper for an eager industrial market. The Siskowit should be considered a success, rather than a failure.

The Physical Evidence

Finding the Siskowit Mine site, even though it has been abandoned since 1855, is an easy task. Several writers noted its location both during and after its operating years. William Ives, the General Land Office surveyor assigned to make the first official map of the Island, recorded its precise location and described four buildings in 1847. Fifty years later, Michigan State Geologist A. C. Lane described the abandoned workings. While Ives' and Lane's written accounts offer clear directions to the site, the remains of the mining operations provide the most striking clues. The rocks and stamp sands piled high along the shore and the grassy open area distinguish this segment of shoreline as a manmade environment when approaching the site by boat. Hikers entering the site on foot can also readily recognize that this is a setting different from the trailside in most of the park.

The visitor who questions the cause of these differences can learn from an NPS sign that this is the site of the

Siskowit Mine, 1847-1855. A casual walk around the area will reveal a number of square vertical shafts cut into the basalt bedrock. Most of these shafts hold either water or ice depending on the time of the visit. There are mounds of broken rock near these holes, much like the rock pile along the shore. In the grassy open area, regular rectangular outlines of building ruins are visible. The sandy shoreline is littered with broken pottery, glass, clay pipe fragments and unidentifiable pieces of rusty iron.

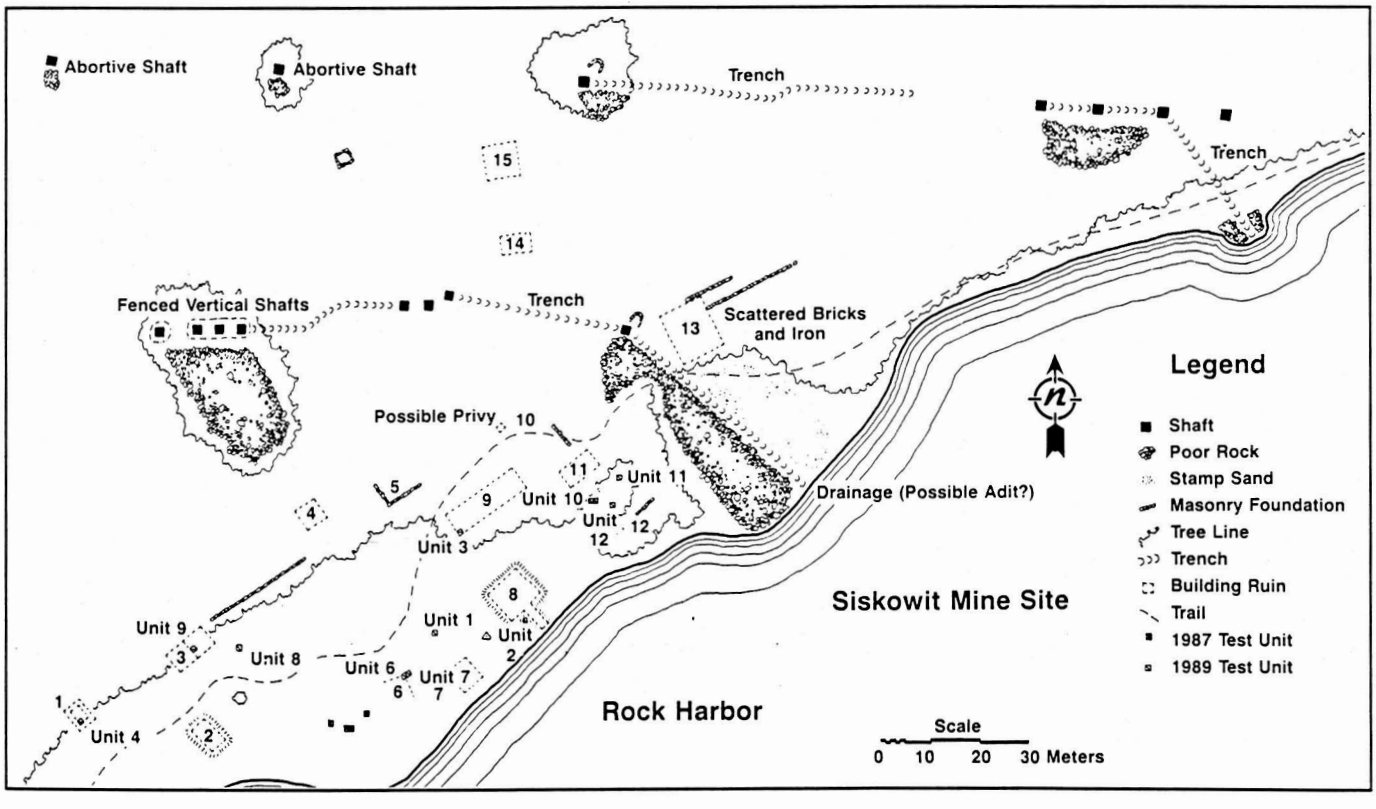
The surface survey done by members of the Isle Royale Archaeological Project recorded fifteen shaft openings arranged along two parallel lines, apparently representing the two veins mentioned in company reports. The piles of broken rock are waste stone that had to be removed to gain access to copper, but they contained too little mineral to justify crushing. The largest pile, near the shore, also includes rock that was discarded after it was burned, broken by hand and picked over for any recoverable copper.

The ruins adjacent to this largest pile (structure 13 on the map below) are the foundations of the engine house, the stamp mill and the pump house built in 1850. A single steam engine alternately provided power for both crushing rock and pumping water. The heavy stone foundations visible to the north of the hiking trail testify to the mass of the structure that housed the crushing apparatus. A battery of twelve large iron-stamping heads were raised by steam cylinders within a wooden framework and dropped with gravity onto the rock fed continually into iron mortars below. The crushed rock was washed from the mortars down a series of inclined tables where the denser copper was separated from the "sands."

The heavy weight and reciprocating action of the machinery dictated the massive foundations. Furthermore, placing the machinery somewhat upslope from the shore allowed the effective use of gravity to move the material downhill through the processing stages. This left the waste material at the lower end of the building. Near the stamp mill foundations, a scattering of bricks mark the location of the chimney for the steam engine.

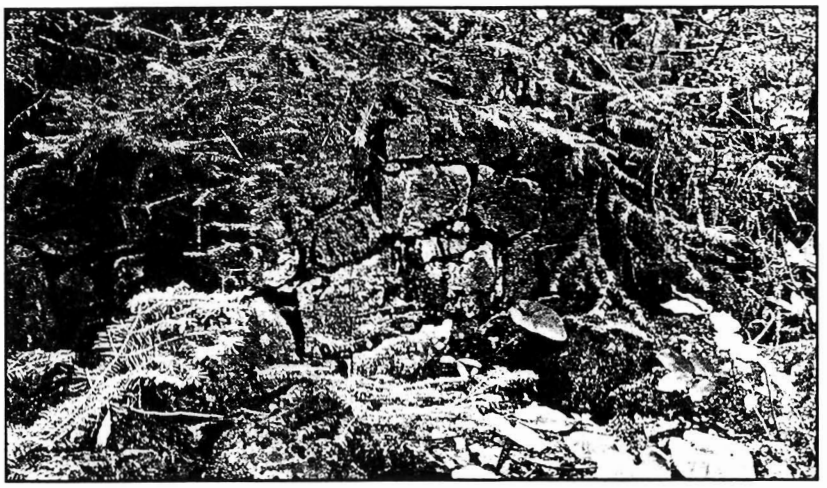
The exact ages and functions of the other buildings on the site are more difficult to ascertain. Ives' 1847 field notes suggest that the ruin we have labelled structure 6 was a "log dwelling house," structure 7 was a "log storehouse" with a "bark roof," structure 8 was a "nice log house . . . with a shingle roof;" and structure 9 was a "hewed log house which is being built." One-meter-square test excavations among these structural ruins confirm that this was an area of domestic activity. Fragments of pottery vessels, clay pipes and domestic trash are the dominant types of artifacts recovered here.

The richest deposits were located just downslope from structure 11, in test units 5 and 10. Along with the butchered bones of cattle and pigs, we found parts of several nineteenth century ceramic tablewares. Their



presence here was hardly surprising, but the types represented were somewhat unexpected. The majority of the tablewares were decorated, not plain. These fine earthenwares carried colorful decorations that were painted as bands around the edges of plates, or floral designs in several colors or as blue printed versions of lithographs transferred to the pottery surface before glazing.

All of these design styles are well-known from the period of the mine's operation. Because they were much more expensive to purchase than the plain wares typically used by lower-status workers, they are usually found where high-status people lived. Their presence can be interpreted in several different ways. Perhaps we have only found the trash of the mine's managers. Maybe the mine workers enjoyed a higher standard of living than we have assumed. Or it may be that the lower-status miners did not use ceramics at all, but rather ate from wooden trenchers or tin plates. In any case, additional excavation will help to settle this question.



The stamp mill foundations of the Siskowit Mine as they now appear.

The Siskowit Mine is but one example of the record of mining on Minong. Several other companies operated at the same time and numerous other localities were mined by native people. After a short period where no mining was done in the 1850s and 1860s, a second flurry of activity occurred.

The Island and Minong mines were Isle Royale's biggest producers. Both left a copious documentary record and impressive physical sites from their operations during the 1870s and 1880s. A final chapter of mining centered on the Washington Harbor area when the Wendigo Mining Company made a serious attempt to develop veins on the southwest end of the Island in the 1890s.

Summary

The combination of archaeology and history in the study of the human use of Isle Royale adds a dimension that either discipline alone lacks. The documents offer significant quantities of information, but the focus on physical remains bring the information to life. It extends the written record, fills gaps in the historical data and adds texture to our understanding of the past.

Often a visitor is overwhelmed by the Island's wilderness character, by its isolation and the surrounding natural beauty. These qualities of Isle Royale National Park are central to its appeal and its message. However, Isle Royale's story of human history can be just as appealing, just as powerful and is completely intertwined with the wilderness quality. The archaeological perspective—with its emphasis on the physical remains and locations of human history—has a significant role to play in presenting a balanced view of the Island's past. While Isle Royale maintains its natural character, we must remember that it has been used by human beings for thousands of years. Even the dirty industrial extraction of copper has played a role in making it what it is today. □

Bibliographic Note

Sources used in preparing this article include "Archaeological Survey of Isle Royale National Park" (unpublished, 1963), by Tyler J. Bastian; "An Archaeological Reconnaisance of Isle Royale," by Fred Dustin, *Michigan History*, v. 41; *Lake Superior Copper and the Indians* (1961), edited by James B. Griffin; "Miskwabik-Red Metal," by John Halsey, *Michigan History*, v. 67; *Geological Report of Isle Royale* (1898), by Alfred C. Lane; "The American Fur Company's Fishing Enterprise on Lake Superior," by Grace Lee Nute, *Mississippi Valley Historical Review*, v. 12; *Historic Mining on Isle Royale* (1968), by Lawrence Rakestraw; and the *Charter and By Laws of the Siskowit Mining Company of Michigan* (1850).

Pat Martin teaches archaeology and anthropology at Michigan Technological University. He continues to pursue research on historic and prehistoric copper mining on Isle Royale and the Keweenaw. He also edits the *SAS Bulletin* for the Society of Archaeologcal Sciences. His article on Fort Wilkins appeared in the January/February 1990 *Michigan History*.