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## **The Upper Peninsula as It Was: What the Europeans Encountered**

**Robert Archibald, Ph.D.**

U.S 41 crosses the Middle Branch of the Escanaba River west of Ishpeming, just west of what locals call the Clarksburg Location. On the rise a few hundred yards west of the river there is a sheer twenty-foot high rock cut that exposes evidence of the Upper Peninsula's most ancient past. If you pull off by the side of the road and examine the blasted rock face you see layers of dark rock interspersed with a diagonal rock line that is almost white. These dark rocks were once thin lava flows overlaid with layers of white volcanic ash now metamorphosed over billions of years by enormous pressure into the rocks exposed here. The layers are not horizontal as they most certainly were when first spewed from a volcano. Instead they are inclined at almost forty-five degrees reflecting the ongoing deformations of the earth's crust over eons of time.<sup>1</sup>

This rock and similar outcroppings over the western Upper Peninsula are among the oldest rocks on the planet, some of the first land to appear on the earth's surface as long ago as 3.5 billion years. Volcanic eruptions characterize much of this regions' geologic history. At other times warm shallow seas inundated the land and deposited sediments containing minerals including iron. Volcanic eruptions and lava flows continued under the ancient seas. West of Marquette in rock cuts along U.S. 41 there are "pillow top" looking slate colored rocks.<sup>2</sup> These rocks are evidence of ancient seas for these are solidified underwater lava flows. Copper too, was deposited by hydrothermal processes in fissures and vesicles in the Precambrian rock.<sup>3</sup>

Buildings made of Jacobsville sandstone are ubiquitous in the Upper Peninsula. There are many of these buildings in Marquette including the stunning courthouse and the old Savings Bank Building from which the New Year ball drops each year. The sandstone is named for the

Jacobsville quarry on the Keweenaw Peninsula but variations of the formation exist along much of the Lake Superior shore from the Keweenaw Peninsula all the way to Sugar Island off the eastern tip of the peninsula. The splendid Pictured Rocks are a part of this formation. Buildings across the region and the eastern United States were constructed with this beautiful stone.<sup>4</sup>

About 1.8 million years ago what geologists call the Penokean Orogeny uplifted huge mountains in what is now the Upper Peninsula. Water eroded these mountains over the next billion years carrying sediment northward, which solidified into the sandstone on the southern Superior shoreline. The Porcupine and Huron Mountains are remnants of the ancient mountains that once included high peaks that were probably comparable in height to the Rocky Mountains.<sup>5</sup> What we see now are just the roots or stubs of the ancient range.

While the western Upper Peninsula sits on exposed bedrock outcroppings of volcanic and metamorphic rock, the eastern portion is comprised of layers of shale, limestone and sandstone rocks, which are sedimentary, that is they are the sediments deposited on the bottom of ancient seas that submerged the area intermittently for millions of years.<sup>6</sup>

I live a few miles west of Gwinn, Michigan. The terrain is hilly, there are dozens of small lakes, several gravel pits, big boulders back in the woods that look to have been rolled there by giants. But no, this disheveled landscape was not created by super humans but by glaciers. The landscape of the entire Upper Peninsula and the shape of the modern great lakes were determined by glaciers. Glaciers form when the rates of ice melt in the summer season is less than the rate of accumulation of snow in the winter.<sup>7</sup> But glaciers only form when the land is close to one of the poles. About fifty-five million years ago the ancient super continent fragmented and North American drifted from near the equator toward the North Pole.<sup>8</sup>

Glaciers scoured the Upper Peninsula multiple times but because each succeeding glacier eliminated evidence of previous advances there is only evidence for the last glacier, the Wisconsin Glacier, which covered the entire Upper Peninsula. Glaciers did not just advance and then melt, but they advanced and retreated multiple times. The final advance in the Upper Peninsula began about 11,850 years ago and by 10,000 years ago the area was free of ice. Measured against a human time scale this seems a very long time ago but in earth time it is infinitesimal. Glaciers move and flow propelled by weight and gravity and as they do they carry suspended sand, gravel, rock and ice across the landscape reshaping and obliterating everything in front of them.<sup>9</sup> No trees, plants or animals remained.

The thickest part of this final glacier was to the north of the Upper Peninsula and measured three miles deep. While the thickness was considerably less here, it was still thousands of feet. Ice weighs fifty-seven pounds per cubic foot so six thousand feet of ice exerts 171 tons of pressure per square foot.<sup>10</sup> This weight depressed the earth's surface by hundreds of feet, and when the glaciers retreated, the earth rebounded, radically rearranging watersheds. Drive M-95 toward Republic. Stop and climb on some of the roadside bedrock. On the more horizontal surface there are deep striations that are generally oriented north to south. These deep cuts in the bedrock were made as tons of ice, stone and sand moved over these rocks. Stand here and imagine the scene from ten thousand years ago and the force required to cut this rock.<sup>11</sup> Glaciers scoured the land but they also scoured and gouged the depths of the Great Lakes we now see and filled the canyons they created with melt-water.

The area around Gwinn where I live is delightfully pockmarked with small lakes that are now havens for those seeking a quiet little cabin in the woods with frontage on water. Sometimes glaciers left huge blocks of ice buried in the deposited debris left behind. These

blocks melted and left kettles behind, each a lake or a swamp. Imagine this as you admire the many beautiful lakes in the nooks and crannies of the peninsula. Look at United States Geographical Survey maps and get an idea of how many of these glacial gifts remain. Except where bedrock is exposed nearly all the land's surface here was deposited by glaciers and most of it came from somewhere to the north, carried here in great rivers of ice.<sup>12</sup> Glacial till is the mix of gravel, boulders and sand left in place when the ice melted depositing material at its edge in a formation called a moraine. Outwash is the sand and gravel carried by the streams of water produced as the glacier melted.<sup>13</sup>

While microbes, viruses and algae live in glaciers plants and animals do not.<sup>14</sup> Plants and animals followed the edges of glacial movement as the ice advanced and receded. When the glaciers finally receded 10,000 years ago they left rocks, sand, gravel and water behind. Immediately plants and then animals began to recolonize the land. Spruce and tamarack were first, followed by balsam fir, jack pine, red pine and then white pine. Oak and maple were slower to move. Hemlock arrived last.<sup>15</sup> The Gribben Lake Forest in Marquette County was flooded and buried with outwash water and sand by rapidly melting glaciers just about ten thousand years ago. It was rediscovered as workers were digging a tailings basin for the Tilden Mine. It was a forest of Spruce trees with remnants of trunks, needles and cones preserved in glacial outwash after water drowned the trees.<sup>16</sup> This forest was likely only a few miles from the glaciers southern edge and it resembled the kind of forest found today in proximity to Hudson Bay. While early explorers in the region often described what they saw as they traveled through, any descriptions of the forests were only incidental, not systematic. The surveyors who worked for the General Land Office and surveyed the entire Upper Peninsula beginning in the 1840's made the first methodical descriptions of the forests. Notes they kept as they ran the survey lines

are the basis for an in-depth knowledge of forestation prior to large scale logging of timber resources. On survey corners they located and marked “witness trees” and they located and identified by species a dozen or so trees along each section line. They also recorded soil type, windthrows, which are trees felled by wind, recent burn areas and beaver floodings.

Windthrows and burns were common. Wildfire was especially important in jack pine, red pine and white pine forests. There was no untouched forest primeval. Forests were destroyed by glaciers, evolved through the process of succession, blown flat by wind throws, charred by fire and choked by changing climate, and weakened or killed by insects and disease.<sup>17</sup> Forest destruction was critical both for the ecological life cycle and in the regeneration of the forest.

Through the eyes and words of surveyors we see the forests before the big cut began in the decades after the Civil War. These forests were different from today’s forest, but not so very different. The species of trees remain the same but age and distribution are different. When first described the forests were dominated by conifer species, primarily upland conifer. Now the upland forests are dominated by deciduous species and generally forests are younger now than they were at the time of survey. Lowland forests too, are now dominated by deciduous species. This is a result of logging but also the pressure from hunters to maintain habitat for deer, grouse and woodcock.<sup>18</sup>

Creatures of all kinds repopulated the new forests and the rivers and lakes left behind as the glaciers disappeared. Near our home outside of Gwinn we see bear, raccoon, otter, fisher, deer, coyote, weasels, beaver, moose, wolf, coyote, dozens of migratory and resident birds, a variety of reptiles and amphibians and, of course, hoards of insects. All of these species and more moved north after the ice melted but their distribution has changed and some species such as caribou are no longer here while others such as moose became extinct in the area and were

reintroduced by humans. Woodland caribou and moose disappeared by 1900. Cougars and wolverines were gone after about 1850.<sup>19</sup> There were few deer, grouse or woodcock in the mature forests where preferred food sources were scarce. Deer also carried a benign lungworm fatal to moose.<sup>20</sup> As glaciers disappeared species that were separated by glacial ice blended and competed. Fascinating linguistic evidence exists. The word “muskellunge” in Ojibwa means “peculiar pike.” Cougar are called “big lynx.” Turkey are “big ruffed grouse.” Brook trout outcompeted arctic grayling in the now inter connected watersheds. Land rose as the weight of glaciers lifted, and with elevation changes the watersheds were re-routed and re-connected. Glacial lobes that once separated landmasses disappeared and new species were introduced.

Pierre-Esprit Radisson provides tantalizing descriptions of wildlife in his account of his Third Voyage to the upper lakes probably between 1658 and 1660. “The summer passed away with admiration by the diversity of nations that we saw,” he exclaims, “as for the beauty of the shore of that sweet sea. Heere we saw fishes of divers, some like the sturgeons and have a kind of slice at the end of their nose some 3 fingers broad in the end and only two neere the nose, and some 8 thumbs long, all marbled of a blakish color. There are birds whose bills are two and 20 thumbs long. That bird swallows a whole salmon, keeps in a long time in his bill. We also saw shee-goats very bigg. There is an animal somewhat less than a cow whose meat is exceedingly good. There is no want of Staggs nor Buffes. There are so many Tourkeys that the boys throw stoanes at them for their recreation.”<sup>21</sup> Radisson claimed there were buffalo in the Upper Peninsula although he says they end up here by chance. “As for the Buff, it is a furious animal,” he says. “He comes for the most part in the plaines and meadows; he feeds like an ox, and the Oriniack so but seldom he gallops. ... “The biggest are bigger than any ox whatsoever. Those are to be found about the lake of the Stinkings and towards the north of the same. They come

not to the upper lake but by chance. It is a pleasure to find the place of their abode, for they tourne round about compassing 2 or 3 acres of land, beating the snow with their feet, and coming to the center they lye down and rise again to eat the bows of trees that they can reach.”<sup>22</sup>

Plants and animals followed the advance and retreat of the glacial edges and so did people. Humans have lived in the Upper Peninsula for at least ten thousand years according to archeologists working at sites in Marquette County.<sup>23</sup> These people, called Paleo-Indians by anthropologists, necessarily lived in small roving groups because they depended entirely upon hunting and gathering for subsistence. They had few possessions and left little behind.<sup>24</sup> When the first European, Étienne Brûlé, arrived at Sault Ste. Marie on a voyage between 1620 and 1622, the entire native population of what is now Michigan is estimated at fifteen thousand people with twelve thousand of the total living in southern Lower Michigan. So between the north Lower Peninsula and the Upper Peninsula there were three thousand individuals. This very low population reflects the difficulty of surviving in the northern climate where residents relied out of necessity on fishing, hunting and gathering rather than agriculture.<sup>25</sup>

The Anishnaabeg people made the Upper Peninsula their home and sometimes shared it with refugee tribes fleeing the Iroquois or Sioux. They were here when the first French arrived. These people broke into smaller family groups in the late fall and wintered in the interior where there was more shelter from the big lakes and where hunting was better. Family groups gathered near maple forests in spring and made maple sugar. In summer people gathered in larger bands near the big lakes to fish, gather plants. Written records kept by the French document the richness of the fisheries. Father Claude Allouez traveled the southern shore of Lake Superior in 1665-1667 and described shape and clarity. “The form of this lake is nearly that of a bow,” he wrote, “the southern shore being much curved, and the northern nearly straight. Fish are

abundant here and are of excellent quality; while the water is so clear and pure that objects at the bottom can be seen to the depth of six brasses.”<sup>26</sup> Father Claude Dablon traveled from the Sault to Chequamegon Bay in 1669 and wrote that, “It is almost everywhere so abundant in Sturgeon, Whitefish, Trout Carp and Herring. In one night fisherman catch twenty large sturgeon, or one hundred a fifty whitefish or eight hundred herring in one net.”<sup>27</sup> Louis Nicolas was a renegade Jesuit priest who eventually left the order but he was also a talented artist who left us some of the first European depictions of Anishnaabeg people. He passed through the Upper Peninsula first in late 1667 on his way to Mission du Saint Esprit in Chequamegon. Later he made remarkable drawings of native flora, fauna and people. He depicted native people fishing using long handled dip nets and spears.<sup>28</sup> Another drawing shows snowshoes and a large sturgeon on a toboggan pulled by a dog.<sup>29</sup> During this summer gathering season the Anishnaabeg picked and dried blueberries, huckleberries and whortleberries. In fall people gathered wild rice where it was available. Father Jacques Marquette wrote an extraordinarily detailed description of how native people gathered and processed wild rice. “In the month of September,” he wrote, “which is the suitable time for the harvest, they go in canoes through these fields of wild oats; they shake its ears into the canoe, on both sides as they pass through. The grain falls out easily if it be ripe, and they obtain their supply in a short time.” He continues to explain how it is dried over a slow fire, then put in a bag and stomped on so as to separate the grain from the straw. The rice may be boiled as is or pounded into flour. Marquette finishes by exclaiming that, “cooked in this fashion, the wild oats have almost as delicate a taste as rice has when no better seasoning is added.”<sup>30</sup>

Despite limited numbers of people, the Anishnaabeg did modify the environment around them to their advantage. They used fire to eliminate the undergrowth in red pine forests along

the shores of the big lakes thus increasing the harvests of the sought after berries. These were controlled burns and did not threaten the over story pines.<sup>31</sup>

While the climate circumscribed most crop growing, the Anishnaabeg planted corn where possible. Rev. Father Claude Allouez noted in his journal of 1665-1667 that Chequamegon "...is a beautiful bay, at the head of which is situated the great village of savages, who there cultivate fields of corn and lead a settled life."<sup>32</sup> Rev. Father Claude Dablon wrote of the native people of St Ignace in his relation of 1671-1672 that "in short, the abundance of fish, and the excellence of soil for raising Indian corn has ever proved a very powerful attraction for the tribes of these regions, the greater number of whom live only on fish and some of them on Indian corn."<sup>33</sup> Nicolas Perrot noted in his memoire of 1680, "The savages called Saulteurs are at the south of Lake Superior, and hunt the beaver and the moose. They also go fishing and catch excellent fish; and they harvest some Indian corn, although not in so great quantities as do the tribes on the shore of Lake Huron who live in open prairie country."<sup>34</sup> Saulteur was the French name for Anishnaabeg people living in the vicinity of Sault Ste. Marie

Native people also modified the environment by resource use. They hunted, fished, gathered, created trails, used copper and stone for blades and tools, constructed lodges of plant materials, and made clay ceramics. They lived in a local economy. What they harvested was for local consumption although they did barter with neighbors. They did not produce for distant markets and had little incentive to exploit resources beyond what was necessary to supply their own needs.

When the first Europeans arrived in the Upper Peninsula in the early seventeenth century they described a landscape that was inhabited by native people who hunted, gathered, fished, fashioned tools, and constructed dwellings sufficient to insure their subsistence. But their needs

and their numbers were so limited that people were not the primary agents of ecological change. Ecological change was a consequence of natural processes that provoked radical change over the eons, but which from a human point of view was infinitesimally slow. With the arrival of the European, that was all to change suddenly, profoundly, and rapidly, remaking this place and impoverishing those people who were here first.

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<sup>1</sup> John A. Dorr, Jr., and Donald F. Eschman, *Geology of Michigan* (Ann Arbor: The University of Michigan, 1970), 42. Although dated this remains the best overview on the geology of Michigan.

<sup>2</sup> Dorr and Eschman, *Geology of Michigan*, 43

<sup>3</sup> An excellent source of information on the geology of the Keweenaw copper deposits is in Theodore J. Bornhorst and Robert J. Barron, *Copper Deposits of the Western Upper Peninsula* (Field Guide 24: Geological Society of America, 2011). A description of the process can also be found in Dorr and Eschman, *Geology of Michigan*, 72.

<sup>4</sup> "Rock types and Rock Structure of the UP," accessed May 19, 2016. [Geo.msu.edu/extra/geomich/rock-type.html](http://Geo.msu.edu/extra/geomich/rock-type.html).

<sup>5</sup> "Geology of the Great Lakes Region," accessed May 20, 2016. [Geo.msu.edu/extra/geogmich/geology.html](http://Geo.msu.edu/extra/geogmich/geology.html). For estimates of mountain size see Peter L. Stock, *Journey to the Ice Age: Discovering an Ancient World* (Vancouver: The University of British Columbia, 2004), 332.

<sup>6</sup> Ibid.

<sup>7</sup> John Imbrie and Katherine Palmer Imbrie, *Ice Ages: Solving the Mystery* (Cambridge: Harvard University Press, 1979). This work is an excellent overview of the evolution and understanding of glaciers.

<sup>8</sup> Ibid., 191.

<sup>9</sup> Dorr and Eschman, *Geology of Michigan*, 142-147.

<sup>10</sup> Robert P. Sharp, *Living Ice: Understanding Glaciers and Glaciation* (Cambridge: Cambridge University Press, 1988), 174.

<sup>11</sup> Dorr and Eschman, *Geology of Michigan*, 144.

<sup>12</sup> R. W. Kelley and W.R. Farrand, *The Glacial Lakes around Michigan*. Rev. Ed. (Lansing: Bulletin 4 Michigan Department of Natural Resources, 1987). This pamphlet is an excellent summary of glacial advance and retreat with fine illustrations.

<sup>13</sup> Dorr and Eschman, *Geology of Michigan*, 151.

<sup>14</sup> Arwyn Edwards, *Glacier Ecosystems*. Accessed May 24, 2016. [Antarcticglaciers.org/modern-glaciers/glacier-ecosystems/](http://Antarcticglaciers.org/modern-glaciers/glacier-ecosystems/).

<sup>15</sup> Scott Jones, ed., *Western Upper Peninsula Regional State Forest Management Plan*. Accessed May 25, 2016. <http://www.midnr.com/Publications/pdfs/ForestsLandWater/RSFMP/WUP/WUPMgmtPlanExecSummary.pdf>

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<sup>16</sup> Thomas V. Lowell, Graham J. Larson, John Hughes, George H. Denton. "Age Verification of the Lake Gribben Forest Bed and the Younger Dryas Advance of the Laurentide Ice Sheet." *Canadian Journal of Earth Science*, vol. 36 (1999): 383-393.

<sup>17</sup> Eric A. Bourdo, Jr., "The Forest the Settlers Saw," in Susan Flader, ed., *The Great Lakes Forest: An Environmental and Social History* (Minneapolis: University of Minnesota Press, 1983), 3-16.

<sup>18</sup> Scott Jones, ed., *Western Upper Peninsula Regional State Forest Management Plan* and Scott Jones, ed., *Eastern Upper Peninsula Regional State Forest Management Plan*. Accessed May 25, 2016.

<http://www.midnr.com/Publications/pdfs/ForestsLandWater/RSFMP/EUP/EUPExecSummary.pdf>

<sup>19</sup> David M. Gates, C.H.D. Clarke and James T. Harris, *Wildlife in a Changing Environment* in Susan Flader, ed., *The Great Lakes Forest: An Environmental and Social History* (Minneapolis: University of Minnesota Press, 1983), 67-68.

<sup>20</sup> *Ibid.*, 57-58.

<sup>21</sup> Pierre-Esprit Radisson, "Radisson's Account of His Third Journey, 1658-1660 [1654-1656?], Louise Kellogg, ed., *Early Narratives of the Northwest, 1634-1699* (New York: Charles Scribner's Sons, 1917) 49.

<sup>22</sup> *Ibid.*, 52.

<sup>23</sup> Dillon H. Carr, "Silver Lake to Deer Lake: Variability in the Early Holocene Human Occupation of Michigan's Upper Peninsula," *The Wisconsin Archeologist*, Vol. 90 (2009), 31-46.

<sup>24</sup> Marla Buckmaster, "The First Yoopers: The Archaeological Evidence," in Russell M. Magnaghi and Michael T. Marsden, eds., *A Sense of Place, Michigan's Upper Peninsula: Essays in Honor of William and Margery Vandeventer* (Marquette, Northern Michigan University Press: 1997), 1-13.

<sup>25</sup> *Native Americans and the Great Lakes*. Accessed June 1, 2016.  
<http://geo.msu.edu/extra/geogmich/paleo-indian.html>

<sup>26</sup> Rev. Father Jean Claude Allouez, "Father Allouez's Journal to Lake Superior, 1665-1667, Chapter II. Journal of Father Claude Allouez's Voyage into the Outaouac County." Louise Kellogg, ed., *Early Narratives of the Northwest, 1634-1699* (New York: Charles Scribner's Sons, 1917) 104.

<sup>27</sup> Claude Dablon, "Relation of 1669-1670," Chap. XI in *The Jesuit relations and allied documents...* ed. by Reuben Gold Thwaites (Cleveland: Burrows Bros. Co., 1896-1901); Online facsimile at: <http://puffin.creighton.edu/jesuit/relations/:Visited> on 6/3/2016. 148-49.

<sup>28</sup> François-Mare Gagnon, Nancy Senior, Réal Ouellet, *The Codex Canadensis and the Writings of Louis Nicolas* (Montreal: McGill-Queens University Press, 2011), 126.

<sup>29</sup> *Ibid.*, 134.

<sup>30</sup> Jacques Marquette, "Voyages of Jacques Marquette," vol. 59, chap. 86-88 in *The Jesuit relations and allied documents...* ed. by Reuben Gold Thwaites (Cleveland: Burrows Bros. Co., 1896-1901); Online facsimile at: <http://puffin.creighton.edu/jesuit/relations/:Visited> June 6, 2016, 92-93

<sup>31</sup> John B. Anderton, 'Native American, Fire-Maintained Blueberry Patches in the Coastal Pine Forests of the Northern Great Lakes,' *Great Lakes Geographer*, Vol. 6, Nos. 1 and 2 (1999) 36-40.

<sup>32</sup> Rev. Father Jean Claude Allouez, "Father Allouez's Journal to Lake Superior, 1665-1667, Chapter II. Journal of Father Claude Allouez's Voyage into the Outaouac County." Louise Kellogg, ed., *Early Narratives of the Northwest, 1634-1699*(New York: Charles Scribner's Sons, 1917) 107.

<sup>33</sup> Rev. Father Claude Dablon, "Relation of 1671-1672," ' Chap. III in *The Jesuit relations and allied documents...* ed. by Reuben Gold Thwaites (Cleveland: Burrows Bros. Co., 1896-1901); Online facsimile at: <http://puffin.creighton.edu/jesuit/relations/;Visited> on 6/3/2016. 159.

<sup>34</sup> Emma Helen Blair, trans. and ed., *The Indian Tribes of the Upper Mississippi Valley and Region of the Great Lakes as Described by Nicolas Perrot, French Commandant in the Northwest...*, (Cleveland: The Arthur Clark Company, 1911),109.