

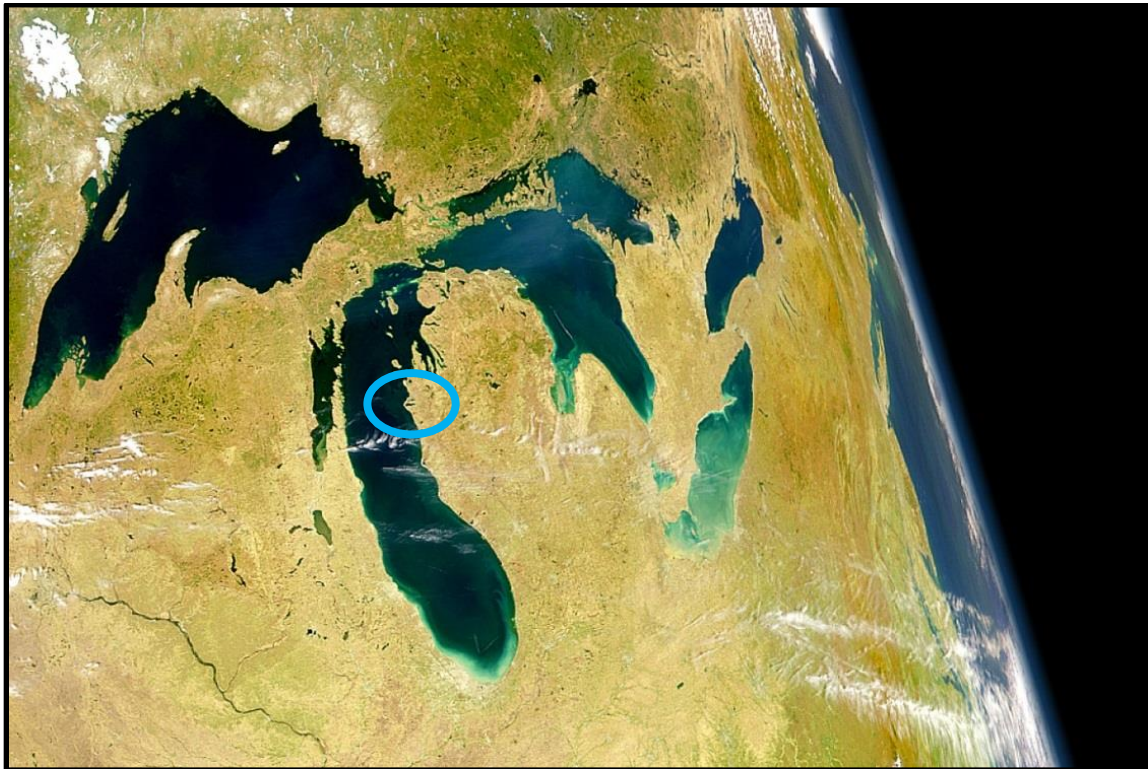
CRYSTALANA

A JOURNAL OF

Historical Reflections and Current Perspectives of Crystal Lake, Its Watershed, & Benzie County, MI.

As compiled by Dr. Stacy Leroy Daniels, a humble saunterer, and
"President *pro tem*, Benzie Co. River Improvement Co., Est. 1873".

Vol. 1, No. 3, 2018.



Crystal Lake and the Great Lakes: So Near and Yet So Far!

"Crystal Lake is visible as a small brilliantly blue ellipse. It rests like a sapphire ring upon the first knuckle of the little finger on the left-hand mitten (palm down) depicting the Lower Peninsula of Michigan. While Crystal Lake is dwarfed by the wide expanses of the Great Lakes, it is still the ninth largest inland lake in Michigan (in surface area) and of sufficient size to be easily discerned. In an orbital photograph, it adds its 'tiny' bit of blue to the 'blue marble' that is our earthly abode. In space there is no concept of 'up' or 'down', but 'over there'."

-- Dr. Stacy Leroy Daniels, "*The Comedy of Crystal Lake*", p6.

[Image: SeaWiFS Project, NASA/Goddard Space Flight Center, and ORBIMAGE, Great Lakes, 24 Apr 1999. visibleearth.nasa.gov/view.php?id=52939]

Issue Theme: The Creation of “Crystalana”

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Prologue

The sun awaits its birth o'er quiet Lake
A glow behind the night, yet to dispense the dark.
The lightening hills, still ghostly, anticipate the dawn
But peace still reigns; no discontent lies within my heart.

And as I stroll along the rippled sands
Peace walks with me – I wait and sigh
For that beckoning voice beneath the ripple of the waves
To tell me, "Be ye still, for God is neigh".

And so, yet lovely Lake, I pour out forth to you
This message from my soul. No longer ache
Forever after me as I depart this life.
Remember calm and stormy inspiration, Crystal Lake.

-- Dr. Stacy Leroy Daniels, 29 Aug 1937 - (), *“The Comedy of Crystal Lake”*, 2015.

“K’gah baugwaushkaugameetchigaemim beenish mukwaenimikohing.”

[We will stir the waters until one remembers.]

-- Basil Johnson, *Call of the Maemaegwishuk, Ojibway Ceremonies*, 1990.

“I was born to dig the land and to stir the waters. -- “A.J.”

“One naturally asks, what was the use of this great engine set at work ages ago to grind, furrow, and knead over, as it were, the surface of the earth? We have our answer in the fertile soil which spreads over the temperate regions of the globe. The glacier was God's great plough.”

-- Louis Agassiz, Swiss glaciologist.

“God had his turn to plough, now it’s mine.” -- “A.J.”

Historical Reflection: The Creation of “Crystalana”

[“*The Comedy*”, pp 5-8.]

To begin the story of “*The Comedy of Crystal Lake*”, we relate the cosmogonic story of creation. We must contemplate how our story fits into the grand scheme of the astrophysical studies of the origin and evolution of the universe and Planet Earth. Then we must place our story within the context of our present minuscule slice in time and small insignificant place. In the cosmogonic story of the Anishinaabe, before the formation of the world, a large raft with all the animals of the earth of which Wenabozho, the Great Hare, was the chief, floated upon a vast expanse of water.

Margaret Noori, Director of Comprehensive Studies at the University of Michigan, described Wenabozho as “a trickster, jester, and prophet, half-man, half myth” - “somewhere between the good and bad in Anishinaabe mythology.” Some Anishinaabe regard him as a Manitou and others as an archetypal human, a caricatured understanding of human nature, whose is not as he appears to be as his real character is hidden. In some stories he is foolish and in others he is wise - a villain in one tale and a hero in the next. (Not unlike how Archibald Jones is personified in the “*Tragedy*” and the “*Comedy*”.)

In Anishinaabe mythology, Wenabozho is a prominent character in the telling of the story of creation. He is anthropomorphized as a great hare (aka Mishaabooz) and characterized as a cultural hero who breaks the normal rules or conventional behaviors of the gods or nature. He changes the rules by performing tricks or thievery with cunning or foolishness, which appear comical even when undertaking tragic or important cultural tasks. This openness to life's multiplicity and paradoxes is largely missing in other cultural traditions. He is the impersonation of life embodied in myriad sentient physical manifestations.

One prevailing story of creation begins with all the animals floating on a large raft upon a vast expanse of water while looking for solid land to live upon. They encourage several of their number dive to the bottom of the water and bring up a single particle of earth. The beaver and the otter are unsuccessful, but the muskrat finally brings up a small grain of sand. The Great Hare, being the leader of the animals, takes this grain of sand and lets it fall on the raft, where it grows larger. He then takes a part and scatters it, causing it to grow to the size of a mountain, and to such an extent to be large enough to contain and nourish all the animals. It is said that the Great Hare became dissatisfied and distrustful of the other animals, and even to this day ceaselessly travels around the earth continually enlarging its size.

“The Song of Hiawatha” by Henry Wadsworth Longfellow is influenced by The Kalevala, the epic poem of Finland, but based on Anishinaabe legends. A legend of the Crystal Lake region involved a maiden who accidentally drowned at the foot of the steep hill now known as Lookout or Lover’s Leap to be followed by her sweetheart who threw himself from the hill into the water to join her in death. In other accounts bodies lost in Crystal Lake mysteriously reappeared in Lake Michigan suggesting some sort of mysterious underwater connection. There is a poem describes the courtship, marriage, and ultimate drowning of an Indian maiden, Arequipah, in the quicksands near the Outlet of Herring Lake ca. 1865.

Current Perspective: The Lay of the Land; the Lap of the Water

[“*The Comedy*”, pp 5-8.]

Let us first gain perspective of the relative importance of the expanses of lands and waters surrounding Crystal Lake and consider the relative geography of northwest Lower Michigan. As viewed from space “Crystal Lake is visible as a small brilliantly blue ellipse. It rests like a sapphire ring upon the first knuckle of the little finger on the left-hand mitten (palm down) depicting the Lower

Peninsula of Michigan. While Crystal Lake is dwarfed by the wide expanses of the Great Lakes, it is still the ninth largest inland lake in Michigan (in surface area) and of sufficient size to be easily discerned. In an orbital photograph, it adds its 'tiny' bit of blue to the 'blue marble' that is our earthly abode. In space there is no concept of 'up' or 'down', but 'over there'.

In August 1839, Henry David Thoreau and brother, John, travelled up the Concord and Merrimack Rivers by Lowell, MA on the Middlesex Canal, one of the first canals in the U.S. (1801) touted as an engineering marvel. Thoreau observed that the canal had acquired an "antique look" beside the more modern railroads. Thoreau later described Walden Pond in terms of blue, green, and yellow, and transparent.

"Depending on the point of view and the time of day, the water of the pond may appear blue, green, or totally transparent." ... "Walden is blue at one time and green at another, even from the same point of view. Lying between the earth and the heavens it partakes of the color of both. Viewed from a hilltop it reflects the color of the sky; but near at hand it is of a yellowish tint next the shore where you can see the sand, then a light green, which gradually deepens to a uniform dark green in the body of the pond."
– Henry David Thoreau, Walden, The Ponds, Chapter IX.

Like Walden Pond, the colors of Crystal Lake are visible as a combination of blue, green, and yellow (and esp. "transparent" and "crystalline" !). The blue hue of its water is an intrinsic physical property caused by selective absorption and scattering of white light, which becomes a deeper blue as its depth increases. Other colors of various shades and hues can be created by trace impurities dissolved or suspended in its water. Visual perceptions of the Lake also can be altered by the intensity of light emanating from sun or moon, and by reflections upward through its transparent waters upward from its sandy bottom or downward from the overhanging clouds.

Crystal Lake is separated by a narrow isthmus at Point Betsie which projects majestically out into Lake Michigan, just "over the hill" to the west. An isthmus is a narrow strip of land connecting two larger land areas with water on either side. Canals, like the Panama Canal and the Suez Canal, are built through isthmuses as shortcuts for marine transport.)

Geographical features around Crystal Lake include: Lake Michigan, Platte Bay, and Pt. Betsie (W); Sleeping Bear Dunes National Lakeshore, Round Lake, Long Lake, Rush Lake, Platte Lake, and Platte River (N); and Betsie Bay and Betsie River, and Lower and Upper Herring Lakes (S); with the Villages of Beulah and Benzonia (E) and the City of Frankfort (S). It is no wonder that sailors, settlers, topographical engineers, ... and Archibald Jones, all thought that Crystal Lake would make a magnificent harbor!]

People: The Geologists

In the early to mid-1800s, as settlers entered the Northwest Territory, natural scientists began to explore Michigan to better understand the relationships between the earth beneath their feet - the rocks of which it is composed, and the processes by which they change. Like curious puppies, they paddled in the waters, walked in the woods, scratched at the rocks, dug in the sand, and sat upon the shoreline. They chased after flora and fauna in the woods, fish and minnows of the lake, and butterflies of fancy in their thoughts, while contemplating the immensities of Michigan's dunes, lakes, and forests. Among them, the geologists proposed theories for the progressive development of Michigan over millennia, and accrued a body of knowledge of how the lakes and shorelines of Michigan were formed and transformed.

Helen Martin (*) wrote a classic tale, “Ne-Saw-Je-Won, A Tale of the Waters that Run Down from Lake Superior to the Sea”, much of which was derived from publications of her long-time associates, Frank Leverett and Frank Taylor, one of the most readable texts on the history of the Great Lakes.

[(*) Helen Mandeville Martin, (1889-1973) was a geologist with the Michigan Geological Survey, and famous for developed the Centennial Geological Map of the Southern Peninsula of Michigan, and the Map of the Surface Formations of the Southern Peninsula of Michigan, Mich. Geol. Survey (1936, 1955). Martin, Helen M., "Ne-saw-je-won" as the Ottawas Say, A Tale of the Waters that Run Down from Lake Superior to the Sea, William Feather Co., Cleveland, 1939, 82pp.]

“The Story of the Great Lakes, familiar to geologists the world over, is so romantic that it should be known to all who find pleasure in understanding natural environment and the manner of its development. The story should have a strong appeal to all who know and love the broad waters of the Great Lakes and the picturesque beauty of their shores.” (Page 5)

“Through nearly half a century Dr. Leverett and Mr. Taylor explored and deciphered the records made by the continental glaciers during the Ice Age. From their studies was revealed the fascinating history of the Great Lakes. They travelled, mainly on foot, thousands of miles along the glacial moraines and over the beaches, shores and beds of the ancient lakes, measuring, recording and mapping as they went. They embodied their observations and conclusions in many scientific publications. Their work and their lives have been an inspiration to other geologists who have followed their footsteps and to many students who absorbed, in their lecture halls, the interesting story of glaciation.” (Page 4)

“The great inland lakes of Michigan—Torchlight, Charlevoix, Walloon, Mullet, Douglas, Burt and others (and Crystal !) —with their high-cliffed terraces, are remnants of Lake Algonquin.” (Page 63)

Several eminent scientists have contributed to the understanding of the Crystal Lake region. Descriptions of their contributions will be featured in future issues of “**Crystalana**”.

Douglass Houghton, the first State Geologist of Michigan, traversed the coastline of Lake Michigan, inc. Sleeping Bear Point, Platte River, Riviere Au Betsie, Frankfort, and Manistee River (July 1838).

Alexander Winchell, the Director of the Geological Survey of Michigan (1869-1871), popularized the field of geology. He described the string of “lakelets” along the east shore of Lake Michigan.

Frank Leverett (with Frank Bursley Taylor) wrote the classic monograph, “The Pleistocene of Indiana and Michigan and the History of the Great Lakes” (1915), and described water supplies of Benzie Co.

Henry Chandler Cowles, Chair of the Botany Dept., Univ. Chicago, the “father of ecology”, did his PhD on “The Ecological Relations of the Vegetation on the Sand Dunes of Lake Michigan” (1899). His botany classes made field trips to the sand dunes along the west coast of Michigan, inc. Crystal Lake.

Warren Gookin Waterman, Head of the Botany Dept., Northwestern Univ., studied the ecology of northern Michigan. His PhD thesis, “Development of Root Systems under Dune Conditions” (1919), inc. a seminal paper, “Ecology of Northern Michigan Dunes: Crystal Lake Bar Region”, (1917).

Irving Day Scott, Geology Professor, Univ. Michigan, conducted extensive field research of shorelines dunes. He devoted a full chapter to Crystal Lake in his book, "Inland Lakes of Michigan" (1921).

James Lewis Calver, who became the State Geologist of Virginia, wrote his PhD thesis on “The Glacial and Post-Glacial History of the Platte and Crystal Lake Depressions” (1947).

Oren Frank Evans, Geology Professor, Univ. Oklahoma, made many summer visits to Crystal Lake, and wrote papers describing shoreline movement of water and particulates (1937-1942).

Lawrence D. Taylor, Founder, Geological Sciences, Albion College, wrote a paper on “Evidence for High Glacial-Lake Levels in the Northeastern Lake Michigan Basin” (1990), inc. Crystal Lake.

Places: The Embayment of Crystal Lake

[*"The Comedy"*, pp 9-24.]

We now step back in time to determine how the present confines of Crystal Lake came to be. Crystal Lake wasn't always as it appears now. Back in glacial times, long before Crystal Lake became a gleam in the eyes of Archibald Jones, the forces of Nature were at work. The area where Crystal Lake was first created experienced many repeated, and often violent, geomorphic upheavals. The surrounding topographic (land) and bathymetric (water) features underwent extensive sculpturing by the movements of earth, ice, wind, and wave. The prehistoric Great Lakes formed and reformed, and the landscape was molded, successions of massive glaciers advanced and retreated, and their melt waters flowed across the land to the lakes to the sea.

As the last glaciers receded from east-central North America 11,000 years before present (YBP), immense quantities of meltwater formed the future Great Lakes which drained to the Atlantic Ocean as outlets having progressively lower elevations were freed from the glacial overburden. Lake Algonquin filled future Lakes Michigan-Huron at several different stages. At the highest stage many present-day features were submerged and the shoreline along NW Lower Michigan was indented with numerous islands, drowned river mouths, and embayment lakes, including Crystal Lake.

Phenomena: The Configuration of Crystal Lake

Crystal Lake was carved as a "deep trench" near the western margin of the Laurentide ice sheet when the area was covered by glacial Lake Algonquin. "Tunnel valleys" created by subglacial erosion served as pathways for large volumes of meltwater to flow under the ice to the west, north, and south toward the great lake. Their cross-sections are characteristically U-shaped with steep-sided flanks similar to fjord walls with flat bottoms typical of subglacial erosion. They are manifested in northern Michigan and elsewhere by the formation of chains of lakes. The Betsie River valley is an example of an ancient river; the Platte River is an example of an outwash plain; and both are interconnected by smaller tunnel valleys.

Several highlands surrounding Crystal Lake were once islands. As the series of prehistoric lakes ebbed and flowed, Crystal Lake was closed off from the "big lake" by a progression of sand dunes, or moraines, formed from sand transported across its western end by prevailing westerly winds and waves. A broad harbor bar, two miles long and three-quarters of a mile wide, was built by natural forces across the valley between the western ends of the glacial ridges between what are now Crystal Lake and Lake Michigan. Such bars were built across mouths of many former river valleys, closing them off and turning the flooded basins into permanent lakes. Examples include: Crystal Lake, Frankfort Harbor (Betsie Lake), Empire Harbor, Glen Lake, the Herring Lakes, Portage Lake, and others of similar origin further south and north.

For a few millennia, proto-Crystal Lake alternated between periods of tempestuous upheaval and complacent rest within the changing confines of Lake Algonquin. Following the receding of the glaciers, it transformed from an embayment to an isolated body of water resembling a partially filled "bathtub" sitting on a rather large knoll overlooking present Lake Michigan. It was confined within its historical perimeter, subject only to the vagaries of the seasons and the buffeting of its shoreline by its famous "whitecaps" against its high bluffs. Excess precipitation, in the form of rain and melted snow from its relatively small watershed, either evaporated, or drained out as surface water or as groundwater. The outlet was relegated to being a small natural stream which flowed southeast into the Betsie River and then west into Lake Michigan. Thus it was for centuries until Crystal Lake was discovered and forever altered by man.

Potpourri: A Geologist's Viewpoint

Irving Day Scott, an eminent geologist, described the unique geology of Crystal Lake:

“Crystal Lake existed as a fjord-like bay of early Lake Algonquin. This depression was crossed by a much smaller one which connected the bay with the depressions to the north and south, which in turn were open to the main lake (!). The development of bars isolated all three of these basins but left the inside passages free. Wave and current action were excessive in the Crystal Lake depression, after its separation from the main lake, and resulted in the carving of prominent cliffs in the morainic borders, the formation of a broad terrace, and the development of strong bars in front of the depressions and at the west end. At this time the passage to the north was closed and that to the south partially so. The formation of triple barrier ridges at the east end caused a great reduction in size by cutting off a large lagoon when the level was lowered. In fact, it may be stated that virtually all of the adjustments took place and the outline of the lake was fixed at this time. The waters receded from the Algonquin level to the Upper, a drop of twelve to fifteen feet, and, left a broad exposed terrace, the sands of which have been heaped into low dunes. This level persisted until about forty-five years (sic forty-nine) ago when the lake was lowered artificially. At present the shore action consists mainly in removing portions of sand dunes and the formation of low ice ramparts of sand which are remodeled and obliterated by waves.”

Natural forces following the laws of Nature shaped Crystal Lake, a miracle perhaps of divine intervention. What events would now unfold with the advance of civilization and the powers of mankind?

In Reality: Crystal Lake is about "halfway" between "here" and "there". It is "halfway" between the Equator and the North Pole

In Reality: Crystal Lake is indeed "halfway" between the Northwest corner of the Upper Peninsula and the Southeast corner of the Lower Peninsula of Michigan.

Epilogue

**The sun has set, and o'er the quiet lake
His light still lingers, reluctant to depart.
The darkening hills draw close, and over all
Peace reigns, but discontent still fills my heart.**

**But as I stand alone upon the shore
Peace also comes to me - I seem to hear
A voice amongst the murmur of the waves
Saying. "Be still and know that God is near."**

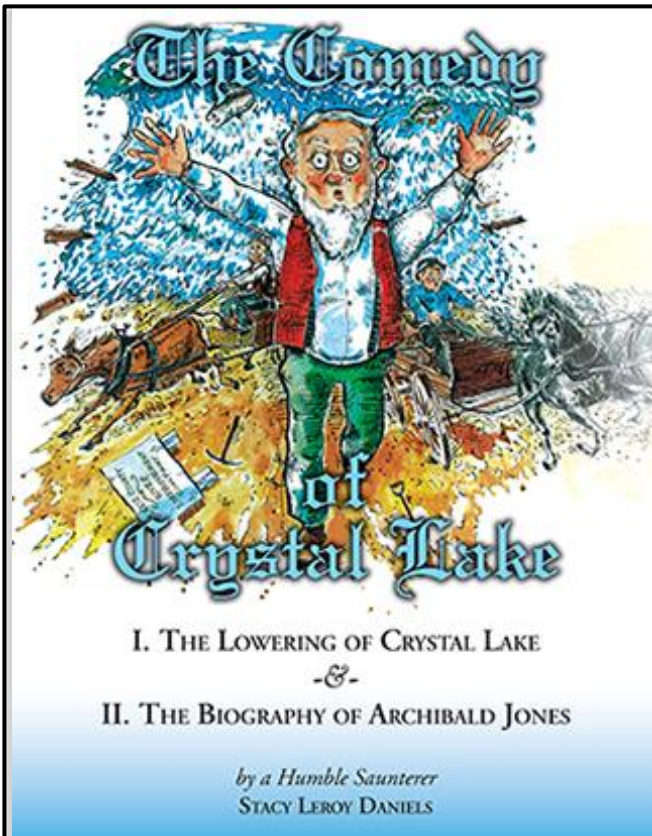
**And so, O lovely lake, you gave to me
A message straight from God. And I still take
That message with me as I wander far.
And hope once more to see you, Crystal Lake.**

-- Walter F. Case, 04 Feb 1895 – 06 Mar 1923, *“The Tragedy of Crystal Lake”*, 1922.

References:

Daniels, Stacy Leroy, **“The Comedy of Crystal Lake”** , I. The Lowering of Crystal Lake; II. The Biography of Archibald Jones, Being a Summary Chronicle with Many More sidelights, written in Two Parts, of a seemingly Ill-Fated Historical Event, so epochal in its nature as to have had a permanent bearing upon the development and future of Benzie Co., Northwest Lower Michigan, together with myriad viewpoints of its diverse characters and sundry locales, &c, &c., Flushed With Pride Press, ©2015, 496pp. ISBN 978-0-692-21715-3 www.CrystalLakeComedy.com

Case, William L., **“The Tragedy of Crystal Lake”** , “with Some Sidelights, By a Survivor”, 1st Ed., J.W. Saunders, Beulah, MI, 1922, 17pp. (A copy of the 2007 reprint is included in **“The Comedy”**.)



“THE COMEDY OF CRYSTAL LAKE”
[Sequel to the classic “Tragedy” (1922)]

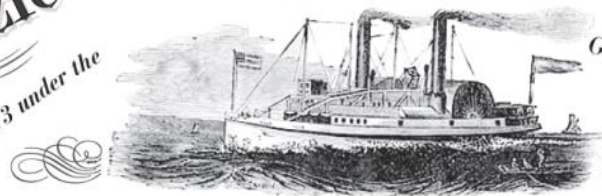
The story of Archibald Jones and the attempt to build a canal from Crystal Lake to Lake Michigan in 1873. The dramatic lowering of a very large inland lake and the creation of its sandy beach.

The epochal event that led to the development of Crystal Lake and Benzie Co.

Dr. Stacy Leroy Daniels, “President, *pro temp* Benzie Co. River Improvement Co., Est 1873”
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