

## Glacier Carves Two Channels

There has always been a geological and a geographical location for Neenah and Menasha. Geology deals with the history of the earth and its life. Geography is the science of the earth and its life, generally the land, sea, and air - specifically, plant and animal life. If one looks at the world, locates the North American continent, finds the Great Lakes, then Lake Michigan - along its western shoreline lies Wisconsin. About 45 miles southwest from the southern end of the bay, bordering on the large peninsula protruding into Lake Michigan, there are two geological and geographical sites - Neenah and Menasha.

There have been drastic physical changes on the surface of the earth during the various geologic time periods. Ancient mountains were first covered by seas and later by glaciers which altered Wisconsin's face. Thousands of years ago, when Wisconsin was undergoing an ice age, the Continental Glacier was receding northward toward Appleton, past Menasha and Neenah. A glacier is nothing more than a huge accumulation of snow, and this particular one advanced in the form of large 'tongues' called lobes. Giles Clark in his Lake Winnebago describes the result of the glacial movement:

*One of the lobes, known as the Green Bay lobe, sculptured out Green Bay, and Fox River Valley, Lake Winnebago, Horicon Marsh, and other lakes in this area. A geological formation called the Niagara Escarpment caused the advancing ice to split at the tip of Door County. An escarpment is described as a wall or cliff, and this one runs along the east side of Lake Winnebago, up through Door County, then continues under Lake Michigan and appears again where Lake Erie flows into Lake Ontario, causing the well known Niagara Falls.*

When the last Wisconsin ice sheet began its steady melting, it receded slowly northward. Much of the glacial melting was caused by a general warming of the

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earth, but much was also due to the friction caused by the sheer weight of the glacier itself. Run-off water was dammed by the glacier on one side and the water became caught up into lakes until the overflow reached some kind of outlet.

There were many glacial lakes in Wisconsin, large and small. Two of the largest (in addition to the Great Lakes which are also the result of glacial action) were Glacial Lake Wisconsin and Glacial Lake Oshkosh. The former once covered much of the central part of the state. Glacial Lake Oshkosh was formed, drained, and re-formed several times, and at its peak it covered the area from Green Bay to Lake Winnebago and to the Fox and Wolf rivers. While drainage to the northeast was blocked by the Niagara Escarpment and by glacial debris, Glacial Lake Wisconsin made its first appearance. It was about 65 feet higher than the present level of Lake Winnebago, which is a remnant of that glacial lake.

As the ice continued to melt, the outlets to the old lake changed often. As the lake lowered, it sought new levels to drain it. One outlet drained into Lake Michigan and formed the Manitowoc River. Another flowed toward Portage and eventually into the Mississippi River. Many other rivers were formed by glacial run-off. Among these was the Fox River which could have flowed on a short course and gone directly into Lake Michigan. Instead, it cut through glacial drift or deposits until it reached bedrock at the Niagara Escarpment in the northeast corner of Lake Winnebago. As the Fox moved west from Lake Winnebago to Little Lake Butte des Morts, glacial deposits caused it to divide and form the two channels which brought about the problems that arose during the development of Menasha and Neenah. Falling over the hard rock accounts for the steep drop of the Fox River from Lake Winnebago to Lake Michigan. In 1915, Ray Hughes Whitehead, a professor at the University of Wisconsin, said:

*Among American rivers it is true that the Fox ranks only as a small river and its valley as a small valley, yet for more than 200 years the river and valley occupied one of the commanding positions of the Northwest. The Fox will always hold a place in history far out of proportion to its size.*

The Fox and Wolf rivers, coupled with the formation of Lake Winnebago, provided the Neenah-Menasha area with a great economic resource - water power and a waterway. The relatively flat land, although with gentle, rolling hills, provided a tillable surface for crop development, and for forest lands - both

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hardwood and coniferous trees. An immense amount of clay was deposited in the Neenah-Menasha area after the recession of the glaciers. This was the time when forests and shrubs developed, wild flowers and fruits flourished, grasslands appeared, waterways - including lakes, rivers, and streams - emerged and were used as transportation with rafts, canoes, and keel boats. The four seasons, as we know them, cycled the year, although calendars were unknown.

When the settlers had their first glimpses of the Fox River Valley, it was with happy astonishment that they viewed a sea of solid foliage. That green "sea" represented one of the finest collections of hardwood trees in the world - oak, elm, beech, maple, ash, hickory, birch, sycamore, walnut, cherry, and butternut. In the warm months of the year sunlight barely reached the forest floor an hour a day.

The availability of wood for shelters, heat, and other necessities was not the only amazing thing these new people saw. There were also grasslands and prairies which might have appeared after sections of the forests had been burned to the ground after having been ignited by lightning.

Among the wonderful plants were wild plums, crab apples, and many kinds of luscious berries which could be preserved to last through the winter. Meat was also plentiful and easy to bring home - rabbits, buffalo, deer, bear, and elk. Skins of these animals, plus those of the beaver, wolf, and badger, were important to be used for clothing, boots, and warm coverings. Countless kinds of fish were in the lakes and rivers, and birds such as pigeons, ducks, and geese filled the skies.

Several kinds of rock and stone were found which were valuable for building and for roads, streets, and sidewalks. The red clay, which has been more recently considered a curse by many builders and gardeners, was at one time used for brick and pottery making. All of these things, together with the fact that the soil was rich and ready for tilling and planting, made many of the potential settlers decide immediately that this area was the place to stay. It seemed to have everything necessary for a good life if one was not afraid to work and take advantage of the natural resources available.

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In Wisconsin, and particularly in Neenah and Menasha, the impact of the Indians was strongly felt. They were generally protective of the environment and resources. They consumed chiefly to survive, and they did not reap any resource to sell. The women planted corn and used irrigation and good farming practices. Here again, everything grown was used. The white settlers began to change the environment. Removing trees for home building, plank roads, and manufacturing, they opened the land for farming. Grain was grown for selling, and agriculture became a business. Wisconsin itself took steps toward becoming an agrarian state.

After the Revolutionary War the challenge to settlers here was to maintain peace with the Indians, organize the remaining settlers into communities, and detach the hostile Menominees and Winnebago from their British fur trade connections. The United States Army was not an impressive force to help control disruptive forces in the territory. Their total number in 1835 was 6,000 men. There were frontier garrisons built in Green Bay and Prairie du Chien which dispatched companies to aid troubled settlers in Menasha and Neenah on several occasions.

The opening of the Erie Canal in 1825 opened up the eastern shore of Wisconsin, and then to Neenah and Menasha via the Great Lakes and the Fox River systems. It put Wisconsin in touch with world markets for lumber, furs, minerals (lead), and agricultural products. Property was a priceless commodity, but sales were slow and delayed until official surveyors from Green Bay and Mineral Point could work up property lines and plat landmarks.

Earlier changed by the forces of nature, earth movement, erosion, flooding, and glaciers, the face of the land now became changed by the presence of man.

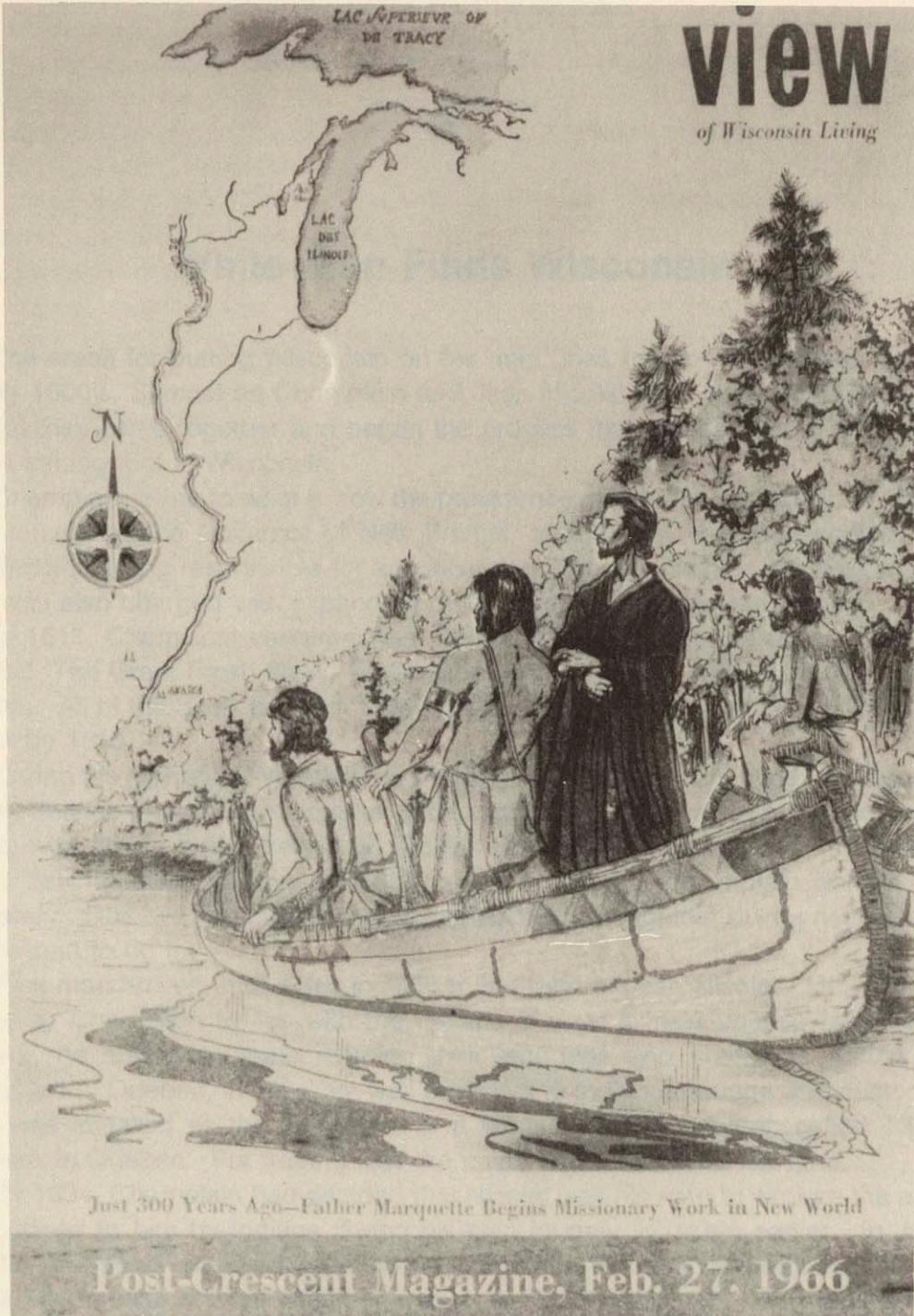
Man's construction of the locks and dams where the Fox River exited Lake Winnebago, backed the water, making it overflow the banks and expanding the size of the lake. Wild rice beds, once covering much of the lowlands along the banks, disappeared as they became swamped. Land owners saw their property inundated. Residents of Fond du Lac and Oshkosh threatened to march on Neenah-Menasha. A resolution by the Board of Public Works in Oshkosh ordered their secretary to "gather information about the overflowing of land around Lake Winnebago. Eventually, the lake level was established and through the years it has been regulated by the local dams.

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Clifford B. Burton

# view

of Wisconsin Living



Just 300 Years Ago—Father Marquette Begins Missionary Work in New World

Post-Crescent Magazine, Feb. 27, 1966

*Birch bark canoe was the common method of water travel by fur traders and missionaries who learned its use from the Indians.*

