

The Ridge Rocks

Water: the Rondout Valley

by Henry J. Bartosik, h.bartosik@att.net

The power of flowing water gushing over a dam is easily understand and appreciated when viewed from the experiences of our most recent "100-year event" rain storm that washed out sections of roads here in the Town of Wawarsing. **Rte. 209** near Spring Glen was washed out, a resident lost her life when the car in which she was driving was swept away by the overflow of **Sandburg Creek**, a bridge over the **VerNooy Kill** disappeared, and the washout of the clay banks... but these are merely recent events.

Imagine the hilly section of Brooklyn and the same hills in Staten Island connected without the Verrazano Bridge of today. That moraine formed a dam that retained a tremendous volume of melted glacial ice water. Recently, geologists believe that this lake of water extended far north to the St. Lawrence River, and they named it Lake Iroquois. One part that remains today of that large lake is Lake Erie! There are other smaller lakes and swamps or marshes that still remain: Lake Champlain and Lake George are examples of the larger lakes. Water trapped by the receding ice was prevented from flowing out to sea by the route of the present day St. Lawrence.

Eventually the water that was collected behind the moraine "dam" weakened the pile of rocks and earth and broke through to the Atlantic Ocean. There were a variety of obstacles in the way of the water and not all of the water found its way to the ocean by way of the break, which today we call The Narrows.

A very deep valley was formed in the Continental Shelf and still exists today – it's called the Hudson River Canyon.

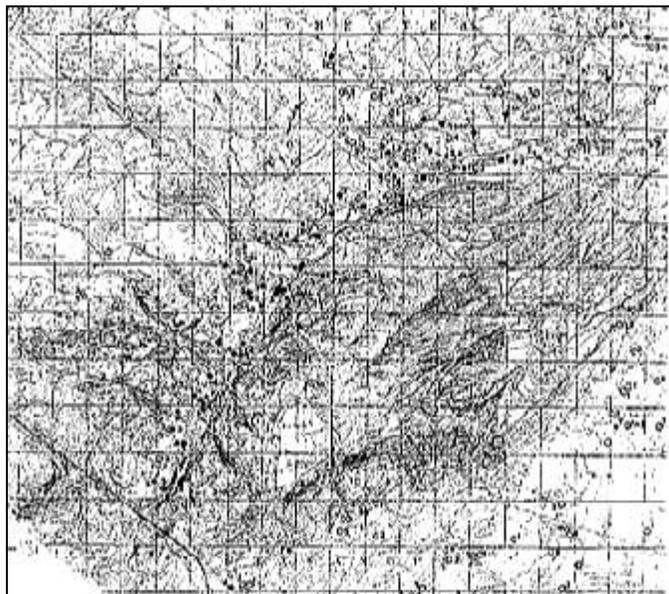
The land upon which the ice and water sat was pushed downward slowly and then slowly rebounded as the weight of the glacial ice and water left. (This is what I referred to earlier as the Isostatic Rebound.) New obstructions changed the direction of the flow of the melted ice water: Lake George and Lake Champlain eventually flowed northward and Lake Erie also emptied into the St. Lawrence.

The present day **Rondout Valley** was filled with water, and the southern part formed glacial Lake Wawarsing. At some points to the south – one place may have been at the high point between Summitville and Phillipsport – an obstruction such as a drumlin or a moraine created a dam. Water that used to flow to the south now was retained in a lake. Some of the places south of this dam continued to drain to the south, as they do today, forming the Basherkill.

Marshes and swamps and ponds that remain today may very well have been the bottom of a large lake there also. We can see them alongside the west slope of the **Gunks**, where **Rte. 17** dips before rising to the west around **Rte. 209**. How deep was the **Rondout Creek** before the glacier, or at some time during the glacial period?

We have only to examine the same type of records as we examined for the Hudson River between Kingston and Rhinebeck. In 1970, statistics of well drillings, called well logs, were examined. Unfortunately not all well drillers kept accurate records of the type of material that was coming up during their drilling. I have examined almost a hundred logs that were submitted to the *Ulster County Health Department* over the years and they have opened for us the secrets of the valley below us. Some of the drillers called the white stone limestone instead of conglomerate, or the hard quartzite granite instead of sandstone, or the thinly-bedded gray shale as either blackstone or black muck since the well drilling practically pulverizes the shale.

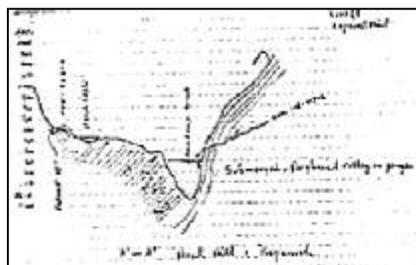
But the outcome for many of the logs is clear: there are layers of clay, silt, sand, pebbles, and larger stones on top of the gray shale bedrock. These layers vary in thickness,



location and depth as well as position to one another. We shall examine places where clay layers alternate with layers of sand and other places there is nothing but clay.

The section of the topographic map of lower Ulster County (*above*) shows wells for which we have reliable well logs. The solid circles indicate places where the well reached the underlying bedrock; the other circles indicate that drilling for the well was stopped before bedrock was reached.

From the data of the wells, a cross section of portions of the **Rondout Valley** can be created. The cross section depicted below shows a possible outline of the bedrock under the **Rondout Valley** below the sand and clay that is visible on the surface. The cross section is east and west, just south of **Honk Lake**. When water, possibly just before the glacier covered our area, or between periods of glaciation, with the help of the moving glacier, tumbled north towards



Kingston to enter the Hudson River, it cut a path down to the foot level. Recall that the Hudson River channel was also deep as the sea level also dropped. So also did other streams

entering into the Hudson. This pattern of the cross sections of the **Rondout Creek** is repeated up and down the valley. 🌿

Singles Hike/Ice Caves

Sunday, September 4th, 9:30 AM – 4:30 PM

Meet at the Hikers' Lot at the Ellenville **Kimble Hose Firehouse**. This is a strenuous, 10-mile hike with rock scrambling. There is no fee for this program. 🌿

Kitchen Garden Program

Saturday, September 10th, 1:00 – 3:00 PM;
Mohonk Preserve

One hundred years ago most people living in the Trapps Mountain Hamlet tended their own small subsistence gardens. Join Pieter Heijnen and Susan Effner, Master Gardeners, Mohonk Mountain House, and learn about the small gardens of yesterday and how they were used. All ages are welcome. This is an easy, ½-mile hike. Sign-up begins 8/28, call **255-0919**. The cost is **\$8** for non-members and **free** to Preserve members. 🌿