



## ***BICENTENNIAL BULLETIN No. 41*** ***—Sheffield Celebrates 200th Birthday***

The Sheffield Bicentennial Commission will issue a *Bicentennial Bulletin* each Monday throughout 2015 that illustrates the rich heritage of our communities. **View them at — [www.sheffieldbicentennial.org](http://www.sheffieldbicentennial.org) or [sheffieldvillage.com](http://sheffieldvillage.com)**

### ***BLACK RIVER VALLEY—a product of post-glacial erosion***

The East and West Branches of the Black River unite at the City of Elyria and then flow northward through Sheffield, to debouch into Lake Erie at Lorain. The East Branch has its source on the borders of an extensive marsh near Lodi in Medina County. This branch flows northward mainly through a glacial drift-filled valley. The West Branch has its headwaters near the Village of Nova in Ashland County and follows a northerly course, channeling a passage much of the way through shale and sandstone bedrock; its course is not coincident with pre-glacial drainage. At Elyria waterfalls of nearly 40 feet in height occur on both branches as the river flows over the cataract created by the resistant Berea Sandstone Formation. The branches unite a short distance downstream from the falls and flow primarily in a post-glacial valley cut deeply into the Ohio Shale Formation to the mouth at Lake Erie.

The U.S. Geological Survey operates a gauging station on the Black River at Cascade Park in Elyria, 0.8 mile downstream of the confluence of the branches. Here the Black River has an upstream drainage basin of 396 square miles. At the station the river has an average annual flow of 336 cubic feet per second (cfs), with an annual range between 130 and 550 cfs. The highest mean daily flow of 249,000 cfs was recorded on January 22, 1959, while the lowest mean daily flow of less than 1 cfs was measured

on October 5, 1944. An instantaneous peak flow of 517,000 cfs was recorded on July 6, 1969, following the record high rainfall on July 4. The average annual runoff for the Black River drainage equates to a depth of 11.5 inches of water over the entire basin.

Within Sheffield the Black River meanders northward in a deeply entrenched valley for about 3.3 miles to the confluence with French Creek, then turns abruptly westward for another 1.3 miles before passing into the City of Lorain. At the southern (upstream) limit of Sheffield, the valley is about 2,200 feet wide with walls of nearly vertical shale that are some 90 feet in height. As the valley progresses northward, it narrows at several locations to less than 700 feet before again broadening to over 2,000 feet. These narrows proved advantageous for bridge crossings such as the railroad trestle at the base of North Ridge, the highway and former interurban railway bridge at East 31<sup>st</sup> Street, and the steel mill railroad bridges south of French Creek. The final narrowing of the valley takes place at the western limit of Sheffield Village, abreast of Bungart Island.

*Black River Valley along East River Road*



When new outlets for the glacial-lake predecessors of Lake Erie were uncovered as the ice mass melted northward, the water level of the glacial lakes fell precipitously. For example, about 13,000 years ago the level dropped 50 feet from Lake Whittlesey [Center Ridge and Middle Ridge Roads] to Lake Warren [North Ridge and Detroit Roads] and then 70 more feet to Lake Lundy [south of Walker Road], all in the relatively short time period of 600 years. About 12,000 years ago the Niagara River outlet was first uncovered of ice and Early Lake Erie was formed, dropping the elevation over 220 feet [nearly 180 feet below the present level of Modern Lake Erie due to the depression of the outlet by the weight of the glacial ice]. The outlet has since rebounded, but it took some 8,000 years. The consequence to the Black River of this lowering of the base level [lowest level to which erosion can progress] was the dramatic and sudden rejuvenation of the Black River's down-cutting ability. After Lake Whittlesey, the glacial-lake shorelines were all north of the resistant Berea Sandstone [Cascade Falls in Elyria] and the river valley bedrock was the more easily eroded Ohio Shale. Thus, in a sense "the bottom fell out" and the Black River was able to rapidly cut the deep, steep-side valley that now courses through Sheffield.

*Hanging waterfalls near Garfield Bridge*



In addition to French Creek, several small tributaries and ditches flow directly into the Black River along its east bank—Johnson, Garfield, and Ziegman Creeks. These small streams, as well as Day Creek that flows into French Creek near its confluence with the Black River, form waterfalls and rapids as they cross the high bluffs separating the Lake Plain from the Black River floodplain. On the west side of the river, the 36<sup>th</sup> Street Ditch [once the boundary between South Lorain and Sheffield Township—dug in the 1890s to drain land being developed for steel mill employee housing] also falls over the shale bluff in a spectacular fashion during wet periods. The existence of these waterfalls indicates that the main stem of the Black River eroded its bed more rapidly when compared to the small tributaries. The pioneers enhanced most of these smaller tributaries as they attempted to drain the once swampy forests to create farmlands.

The Black River floodplain within Sheffield ranges from less than 200 feet wide at the narrows to over 2,000 feet wide south of Kinney Point [0.6 mile north of the Elyria line] and at the French Creek confluence. Along its course, the Black River channel typically ranges from 50 to 200 feet wide, generally increasing in width downstream. The elevation of the valley's top crest decreases downstream from 675 feet at the southern limit of Sheffield to 620 feet at Bungart Island. Likewise, the valley depth decreases

downstream from 90 feet to 50 feet for the same reach of the river. The gradient of the Black River within the Sheffield is 4.3 feet/mile. The lower 5 to 6 miles of the Black River, including the mouth of French Creek, is considered an estuary of Lake Erie, in that this portion of the river is slack water being controlled by the level of Lake Erie except during times of upstream flooding.