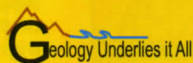


Geology, Landscape, and John Kane's Landscape Paintings



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John Kane, the Artist

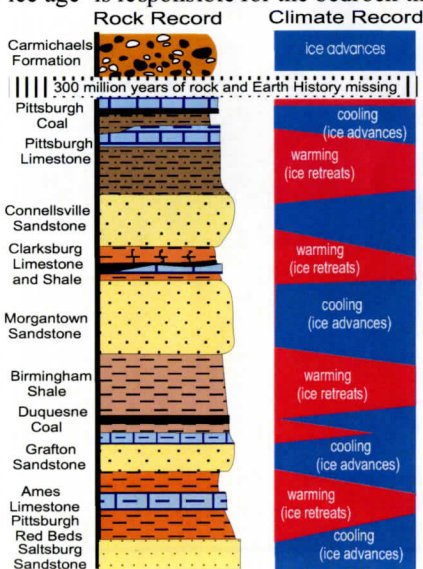
John Kane, the American landscape painter, was born John Cain in Scotland in 1860. He emigrated to the United States in 1879, and settled in Braddock, Pennsylvania. This working man was at various times of his life a gandy dancer, coal miner, tire factory worker, house painter, carpenter, and boxer. In 1897 Kane married Maggie Halloran and they had two daughters and a son. This self-taught painter began painting in his early 60's in 1925. He considered enrolling in formal art classes, but never had sufficient money for the tuition, and settled for borrowing art books from Carnegie Library. When asked why he loved painting Pittsburgh, Kane replied, "*Why shouldn't I?... The city is my own....*" Some referred to Kane as a "Sunday painter", an American version of Henry Rousseau. As a rule, Sunday painters employ many similar traits in common, such as clouds that have bulk and weight as compared to feathery and heavenly characters used by academic artists. Sunday painters also are known for intense greens of trees, grass, or distant hills – as opposed to the more delicate greens of trained artists.

During his painting career Kane painted more than 63 canvasses. He died in 1934 of tuberculosis. Today, his landscapes are displayed at the Carnegie Museum of Art in Pittsburgh (www.cmoa.org), and at the Museum of Modern Art and Whitney Museum of Modern Art, both in New York, as well as in numerous private collections.

Individuals interested in John Kane are referred to: 1) John Kane Painter, compiled by L.A. Arkus, 1971. University of Pittsburgh Press; 2) Sky Hooks: The Autobiography of John Kane, M. McSwigan, 1938. J.B. Lippincott Company.

Pittsburgh's Geology and John Kane's Landscapes

Pittsburgh's current landscape is the result of two of Earth's great ice ages. The first occurred between 320 and 290 million years ago. This ice age is responsible for the bedrock that characterizes western Pennsylvania.



This episode in Earth's history, known as the Pennsylvanian Period, gets its name from rocks exposed in southwestern

Figure 1. Vertical stack of rocks that underlie the Pittsburgh region (left column). Hypothetical variation in climate responsible for the formation of the various rock layers (right column).

Pennsylvania. During the Pennsylvanian Period great glaciers covered Earth's polar regions. As global climate fluctuated through time, the glaciers would grow when it became cold, and shrink when it was warm. At that time western Pennsylvania was located near the equator and its climate was tropical. During times when the polar glaciers grew, abundant rain fell in the tropics. Vegetation growth was prolific and much of this plant material was preserved as coal. When the climate grew warm, the glaciers retreated, and the coal swamps were replaced by short-lived lakes in which thin limestones were deposited (Figure 1).

The second great ice age to affect western Pennsylvania began about 2.5 million years ago and ended about 10,000 years ago. Before that ice age the Monongahela River flowed north to the current Lake Erie area. At the apex of ice development, glaciers advanced southward as close to Pittsburgh as Ellwood City. Ice dammed the river and formed a large lake. The lake ultimately eroded through its banks and cut a new channel to the southwest, forming the modern Ohio River and draining the immense lake. The creation of the Ohio River actually lowered the Monongahela and Allegheny river levels by as much as 200 feet. As a result, tributary streams had to carve deep valleys and ravines down to the new river level. The increased levels of erosion left steep hillsides and valley walls in the Tri-State region. This is the landscape that John Kane grew to love.

John Kane travelled the Pittsburgh region and viewed this geologically recent landscape. Three examples illustrate how geology controlled the landscape in John Kane's paintings. These paintings are: *Panther Hollow, Pittsburgh*, circa 1933-1934; *Nine Mile Run Seen from Calvary*, circa 1928; and *Turtle Creek Valley No. 1*, circa 1930.

Panther Hollow, Pittsburgh (circa 1933-1934)

Modern Panther Hollow is quite similar to that pictured by Kane in the early 1930's (Figure 2). The Junction Hollow Bridge, built in 1899, has been replaced by the newer Anderson Bridge (just above center in Fig. 2B), and I-376 now obscures much of the foreground. Although the railroad tracks have changed ownership from the Baltimore and Ohio to Norfolk Southern Railroad, their course remains identical. The Oakland skyline is also remarkably similar to that observed by Kane over 70 years ago. The prominent, 42-story Cathedral of Learning is the dominant structure on the left in both images, and the spires of St. Paul's Cathedral (Fig. 2B-1), and the cupola of Carnegie Mellon University (Fig. 2B-2) are visible in both views.

Even though the bedrock was formed more than 300 million years ago, Panther Hollow is a geologically new feature to the Pittsburgh landscape. In addition to the bedrock units, most of Oakland is underlain by the Carmichaels Formation, which consists of unconsolidated gravel. This unit is a relatively recent deposit, that is approximately 2.5 million years old. Prior to the Ice Age, the Monongahela River flowed through downtown Oakland (Figure 2B). The gravel deposits of the Carmichaels Formation are actually river gravels formed on the bottom of the prehistoric Monongahela River. The modern Monongahela River is

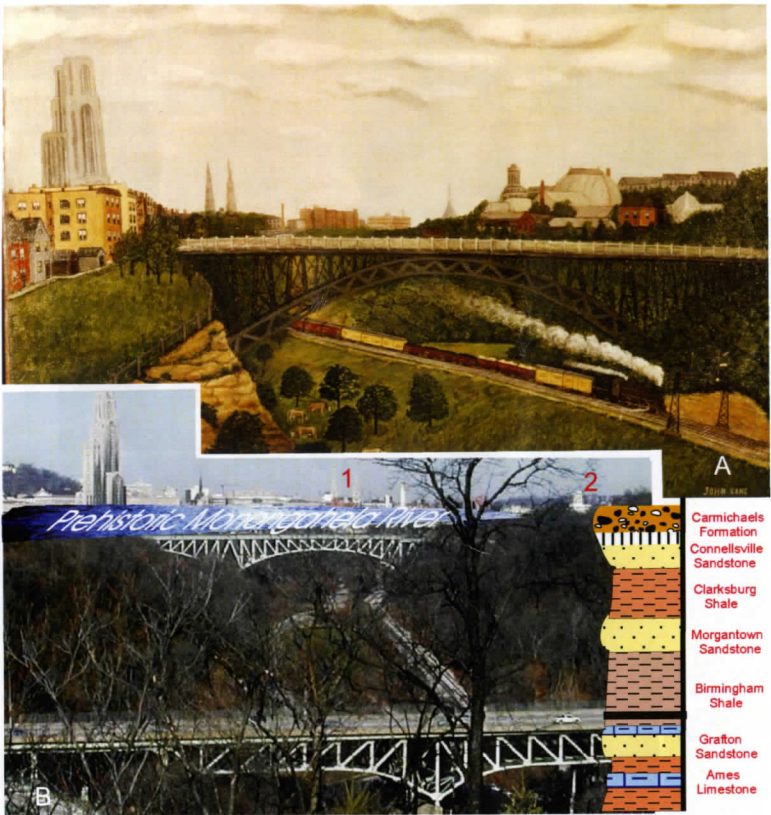


Figure 2. A. Kane's *Panther Hollow, Pittsburgh* (circa 1933-1934), courtesy of the Carnegie Museum of Art and Laurel Mitchell. B. Modern day Panther Hollow showing the succession of bedrock units present in the valley wall, and the location of the pre-Ice Age Monongahela River.

between 150 to 200 feet lower than its pre-Ice Age ancestor. When the current Monongahela River formed, about 20,000 years ago, all of the adjacent tributaries were forced to carve deeper courses to reach the new river level. These steep-sided ravines, like Panther Hollow, characterize much of the Pittsburgh landscape.

Nine Mile Run Seen From Calvary, (circa 1928)

The view of Nine Mile Run from Calvary Cemetery was one of Kane's favorite sights in Pittsburgh. He developed several of his paintings from this location, including the one illustrated in Figure 3. He discovered the view while working nearby on the construction of the Beechwood Boulevard Bridge. At the time, Nine Mile Run was part of Frick Park. The village of Duck Hollow at the mouth of Nine Mile Run is in the lower right foreground, and Swissvale is located on the flat area above the painting's centerline (Figure 3A).

Just as in Panther Hollow, the steep-sided ravines surrounding Nine Mile Run expose bedrock that is about 300 million years old. The oldest



Figure 3. A. *Nine Mile Run Seen from Calvary (circa 1928)*, courtesy of the Carnegie Museum of Art and Laurel Mitchell. B. Modern day Nine Mile Run. Reclamation efforts (foreground) have changed the valley considerably from the day of Kane's painting. Village of Duck Hollow is clearly visible in lower right of both images. C. Headstone of John Kane in Calvary Cemetery near the point of view depicted in illustrations A and B.

rock unit, the Saltsburg Sandstone, is present at the confluence of Nine Mile Run and the Monongahela River, off to the right of these views.

The level areas on which Swissvale and Edgewood are built are capped by gravels of the Carmichaels Formation (Figure 3B). Similar to their occurrence in Oakland, these deposits are evidence of the ancient channel of the Monongahela River that sat much higher, topographically, than the current river bed. The modern river channel is more than 150 feet lower than the level of the ancient channel. This change in river level has forced Nine Mile Run to actively erode its channel and has resulted in the development of the precipitous walls of the Nine Mile Run valley.

When he died, Kane was buried in a poor section of Calvary Cemetery. It seems fitting that this overlook of the Monongahela River where he visited so many times in life would be his final resting place (Figure 3C).

Turtle Creek Valley No. 1 (circa 1930)

The area around the mouth of Turtle Creek had sentimental meaning to John Kane, since this was the location of his first residence in America. The Turtle Creek Valley No. 1 painting illustrates a view to the southeast overlooking the George Westinghouse Bridge under construction (finished in 1931) over Turtle Creek (Figure 4A). Kane felt that the area was reminiscent of the Scottish farms and hills that he left behind as a child some 50 years earlier.

Today the Westinghouse Bridge still dominates views of the Turtle Creek Valley (Figure 4). The bedrock geology in Turtle Creek Valley is similar to that at the locations of the previous two paintings. Three hundred million year-old rocks underlie the hillsides. Much of the steep road cut and hillside at the far end of the bridge is made up of ancient river channel deposits of the Morgantown Sandstone. The Grafton Sandstone is at the level of Turtle Creek.

During the Ice Age, the level of the ancient Monongahela River was nearly equivalent to the level of the Westinghouse Bridge. This river level created the flat area, termed by geologists as a terrace, on which the neighborhoods of East Pittsburgh are built. The deep, steep-sided valley of Turtle Creek was eroded since the modern Monongahela River was formed, about 20,000 years ago. Just as at Panther Hollow and Nine Mile Run, Turtle Creek has scoured its channel down more than 150 feet to meet the new river level.

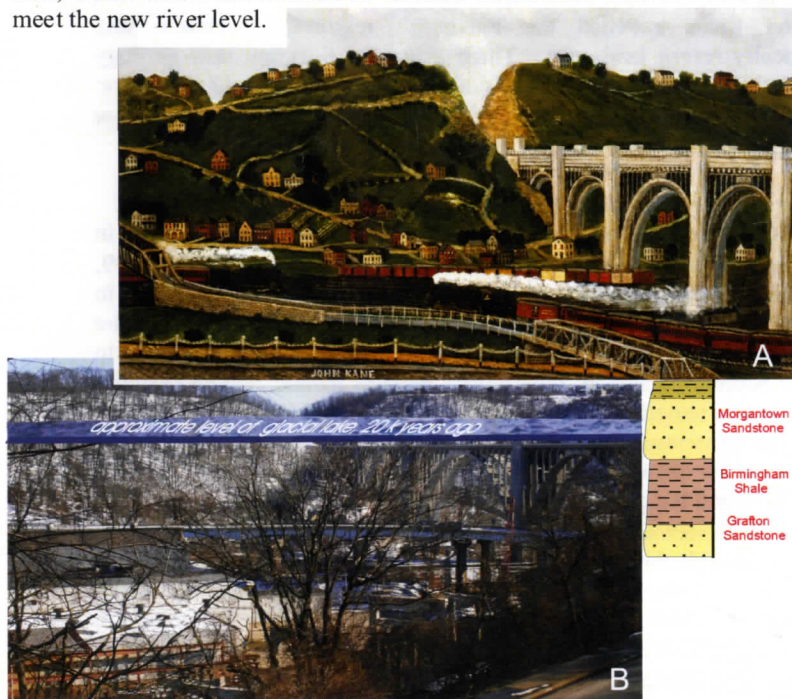


Figure 4. A. Turtle Creek Valley No. 1 (circa 1930), with the permission of Richard M. Scaife. Image provided by Barbara L. Jone, Westmoreland Museum of American Art. B. Turtle Creek Valley today. Bedrock layers portrayed in vertical section to left. Ancient Monongahela River would have been near the level of the George Westinghouse Bridge.