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CHICAGO'S TEMPLE OF STEEL: SOUTH WORKS SINCE 1882

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In my childhood on summer days, when my mother took us to the shore of Lake Michigan at the 57th Street Beach, we could easily see the billowing plumes of smoke bending in the breeze above smokestacks five kilometers to the south-southeast. An incurious lad, except where baseball and fighter planes were concerned, I probably never thought to ask my mother about the fires beneath the smokestacks. I've grown more inquisitive since then, and on a sunny October afternoon I stopped by Steelworkers Park in South Chicago to see what was left of what, half a century ago, I had ignored. It all began about two billion years ago.



South Slip at South Works, 1917. This artificial inlet received ore and coal to be distributed by rail cars within the steel plants. Note the coal mountain within the ore walls just beneath the gantry cranes. Courtesy of the Southeast Chicago Historical Society [Archive ID: 1983-100-d22]. All rights reserved.

In the middle Precambrian, in what is now northeastern Minnesota's Mesabi Range, the oxygenation of Earth's atmosphere brought about the precipitation of iron into banded formations of iron ore. The richness of this ore is the ancient secret behind the iron and steel industry of North America. Miners began intensive exploitation of the high-grade ore in the 1890s, and shortly thereafter the Rockefellers and Carnegies took over, shipping mountains of ore in the form of pellets (marble-sized spheres) to the Great Lakes steel cities, including Chicago. There, the ore met up with coal, the residue of 300-million-year-old swamps, in what is now eastern Ohio and western Pennsylvania, and with limestone from quarries in southern Indiana, a cemetery of calcareous sea creatures from 490 to 360 million years ago.

Before anyone mined the Mesabi Range, Chicagoans had already brought iron ore, coal, limestone, and fire together to make steel. The first big mill opened alongside the North Branch of the Chicago River in 1857, in a part of the city now chic and costly. In 1882, its operations moved southeast to

the lakeshore, near the outlet of the Calumet River, which promised a better anchorage for boats and barges carrying ore and coal.

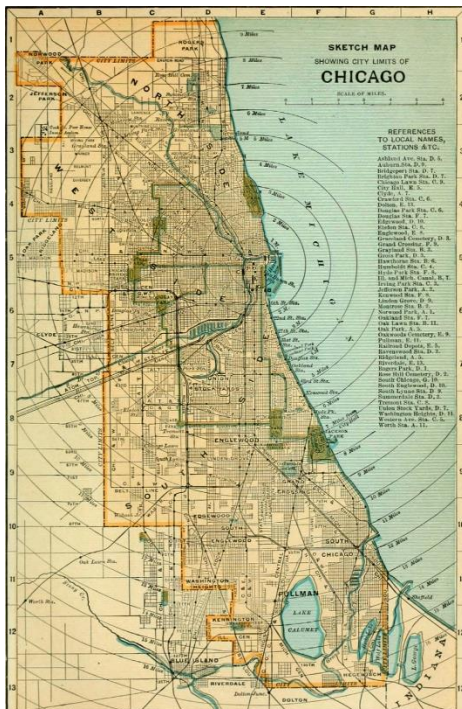


Fig. 1: Sketch map of Chicago, 1905. *The New International Encyclopaedia*.
[Wikimedia Commons](#). [Public domain](#).

Lake Michigan's shoreline retreated northward some five to three thousand years ago, leaving wetlands and little lakes behind, which the Calumet River has—languidly—drained ever since. The area's waterways once teemed with fish and bird life, providing a smorgasbord for the Potawatomi, Native Americans who had long lived in and around the region. They lost their lands in an 1833 treaty, and most were soon forced westward in accordance with US policies of "Indian removal." A few European immigrant families, mainly Dutch, tried draining and farming the wetlands of the Calumet region. The location's potential, however, invited grander plans. Between 1869 and 1882, the US Army Corps of Engineers dredged and straightened the river's channel into what would eventually become the world's largest inland harbor. Over the next century, every manner of acid and oil would leach or splash into the harbor and river, killing almost all of its remaining life forms.¹

The new steel mill at the north edge of the remodeled Calumet River's mouth acquired the name of South Works. From 1889, Illinois Steel, briefly the world's largest steelmaker, operated it. In 1901, through a series of mergers, it became part of US Steel, then the world's largest company of any kind. In short order, South Works was one of three large, integrated steel works in Chicago,² which together turned out about a million

tons of steel each year. It came to specialize in "structural" steel: for rail cars made at the nearby Pullman factory; rails; bridge spans; and girders for the skyscrapers that were then beginning to create the jagged Chicago skyline.

When it opened, South Works covered 30 hectares. By 1898, it extended over 105 hectares. South Works' footprint, you could say, grew of its own accord. Steelmaking always involved slag-making. Slag is a molten mix of impurities, lime, calcium, silicates, oxides, a bit of iron, and a few other ingredients. When it cools, it forms anthropogenic rock, which is sometimes used in roadbuilding but often ends up in landfills. At South Works, it was dumped into Lake Michigan to make land, about five or ten new acres of Chicago each year. By 1922, South Works accounted for about 200 hectares of new land: less Lake Michigan, but more space for blast furnaces, rail lines, and other steelmaking infrastructure. Slag now lies six to ten meters deep atop the sand and glacial till that rest upon the limestone and shale bedrock underneath South Works.

Over the 110-year career of South Works (1882-1992), hundreds of thousands of workers made the steel and slag. In its first decades, a few dozen men died there each year, crushed, burned, gassed, exploded, or pierced and bled to death. Several hundred more were injured seriously, especially those working in the railyards or near the blast furnaces—the mill had its own hospital and surgeon on site.³ But every year, tens of thousands of young men from the Habsburg and Russian empires flocked to Chicago to find jobs, and South Works was almost always hiring.



Fig. 3: Steelworkers in a foundry room at South Works. Molten iron or steel could be as hot as 1,500 degrees Celsius. The photo is undated but the safety gear and bucket suggest it is from the 1950s-1960s. Courtesy of the Southeast Chicago Historical Society [Archive ID: 1981-077-076i]. All rights reserved.

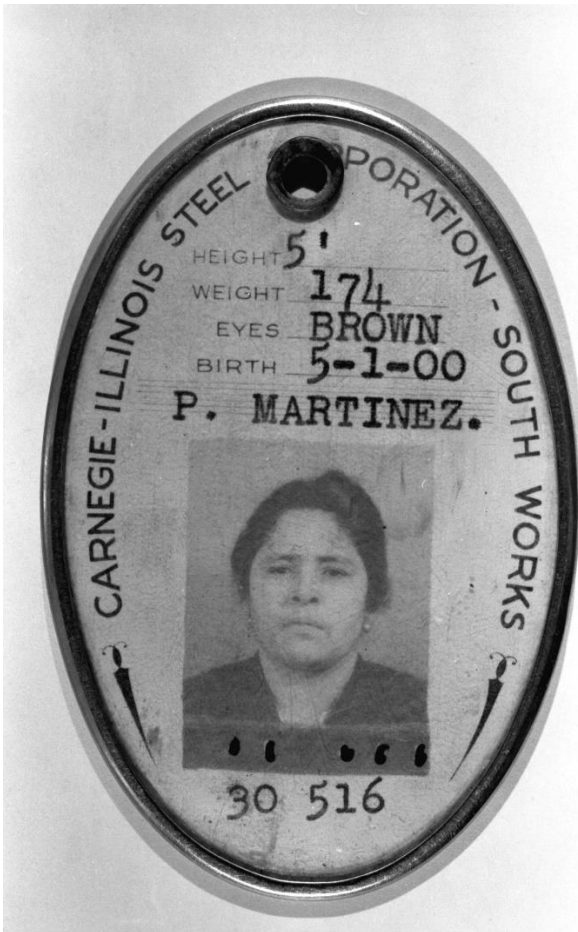
The first steelworkers at South Works came mainly from the British Isles. By 1890, most new recruits were immigrants born in Eastern Europe. By 1915, when the mill employed 10,000 people, Mexicans were flowing into South Chicago looking for work. The violence of the Mexican Revolution (1910-20) sent a million Mexicans north of the border, many of them poor young men avoiding conscription into rival armies. Simultaneously, the need for steel during World War I (1914-18) raised demand for laborers at South Works. In the 1920s, the Windy City was on a path to become the third-largest Mexican city north of the Rio Grande (it was already the second-largest Polish city in the world).⁴



Fig. 4: Workers demonstrating newly introduced safety goggles, undated photo ca. 1915. Before 1930, signs at South Works were often in multiple eastern European languages, in this case in Czech, Hungarian, Croatian, and Polish. Courtesy of the Southeast Chicago Historical Society [Archive ID: 1981-051-5m]. All rights reserved.

World War I, and then immigration restrictions imposed in 1921 and 1924, severed Chicago's links to overflowing eastern and southern European villages whose youth had formerly flocked to the steel mills. Mexicans were not alone in filling the resulting labor gap. Starting in 1915, half a million African Americans from the Deep South made their way north to Chicago, part of what US historians call "The Great Migration." Thousands of former sharecroppers joined the Mexicans, Poles, Croatians, Slovenians, Hungarians, Italians, and Irish in the steel mills of South Chicago. By 1925, one seventh of South Works' employees were African American, and another seventh were Mexicans. Tens of thousands of their descendants still live in the neighborhood.

Despite bitter and bloody strikes in 1919 and again in the late 1930s, South Works continued to attract workers seeking steady jobs. With mass unemployment during the 1930s, a mill job, despite the loud, hot, and dangerous work, was a godsend. Thanks to the first fruits of unionization, by 1940 mill jobs paid well enough to allow a man with no formal education to buy a small house and raise a family. When World War II boosted demand for steel to new heights, South Works employed nearly 20,000 people—some of them women, including, for example, Pasquale Barrios Martínez, who had left Zacatecas and migrated to Chicago as a young woman in 1923 and, when the war came, took a job at South Works when she was in her early forties.



(Left) Fig. 5: South Works ID badge of Pasquale Martinez. Courtesy of the Southeast Chicago Historical Society [Archive ID: 1982-055-6]. All rights reserved. (Right) Fig. 6: Kitty Kalwasinski Markovich welding, 1945. The stars on her helmet are for the five of her nine brothers then serving in the US Army. The solid star represents a brother killed in action in France. Courtesy of the Southeast Chicago Historical Society [Archive ID 1981-049-19]. All rights reserved.

Or Kazmira (Kitty) Kalwasinski Markovich, who arrived in Chicago from Poland in 1913 at age 10 and took a job at South Works in 1944, where many of her nine brothers had worked before the US entry into World War II. Unlike most women at South Works, she stayed on after the war. She married a fellow steelworker and retired only in 1967.

South Works continued to flourish after World War II. During the 1950s, Chicago made a tenth of the world's steel. South Works made the girders for the Sears (now Willis) Tower in Chicago, the tallest building in the world when it was completed in 1974.



Fig. 7: Barges ready to unload cargo for storage with lime and ore between the ore walls. The buildings are a power station on the left and, in the center, behind the gantry cranes, what were the world's two biggest blast furnaces. *South Works Anniversary Book: Steelmaster for 75 Years*, [undated] ca. 1955. Courtesy of the Southeast Chicago Historical Society. All rights reserved.

But the end was nigh. The opening of the St. Lawrence Seaway in 1959 allowed oceangoing vessels access to North America's Great Lakes. Ships brought cheap steel from distant lands without unions. The US federal government's free-trade policies during the Cold War decades left US steel producers vulnerable once other countries' metallurgical sectors had fully recovered from WWII and modernized technologically. By the 1970s, South Works was shrinking, slowly at first, then quickly. The first mass layoffs in 1980 reduced the workforce to 10,000. During the corrosive 1980s, when deindustrialization in Chicago hit its full stride, South Works continued to diminish. In 1992, the mill closed down.

The works were demolished, the land abandoned. In 2004, the Chicago Park District acquired most of the site because no one would buy it—partly out of fear of the toxins embedded in the earth.

Soon the Park District arranged to slather the slag surface of a section of the South Works site with 65 centimeters of mud dredged from Lake Peoria in central Illinois, which had been filling up with sediment for more than a century. Vegetation, both planted and spontaneous, took root. In 2014, the Park District proclaimed that the newly mud-covered area, about 7 hectares, would henceforth be called Steelworkers Park.⁵

On the sunny October afternoon when I ventured to the ruins of South Works, I had no idea what to expect. My visit was spontaneous, just a way to fill an hour between engagements on the South Side. All that remains, beyond the occasional ore pellet among the weeds and dust, are what are called the ore walls: two parallel walls, standing about ten meters tall and stretching nearly 700 meters inland from the lakeshore. For a century, these walls stored iron ore pellets and coking coal, shipped to South Works in the warmer months when Lake Michigan was not frozen over, and fed into the blast furnaces year-round. A portion of one surviving wall looked faintly like the 2,500-year-old Temple of Poseidon at Sounion, south of Athens, albeit with slender columns and skimpy entablature:



Fig. 8: Ore wall segment at South Works, October 2022. © John R. McNeill. All rights reserved.

When the works closed in the 1990s, demolition crews tore down or blew up all of the buildings and tried to destroy the ore walls. But the walls were made of a concrete consisting mainly of slag,

forged at 1,500 degrees Celsius in South Works' blast furnaces. The walls resisted dynamite. The crews gave up after punching a few breaches in them. Perhaps, like Attic marble, the walls made of South Works slag will last for 2,500 years. Volunteer prairie grasses and bushes have grown up around the ore walls, their roots seeking water and nutrients in crevices in the underlying slag.

Walking through a crevasse in the southern ore wall I came upon a twenty-first-century surprise:



Fig. 9: Ore wall converted to climbing wall, October 2022. © John R. McNeill. All rights reserved.

One of the ore walls now serves as a climbing wall. Despite the lovely weather on the afternoon I visited, no climbers appeared. Only a little girl of perhaps two or three, who spoke English with an African American woman who appeared to be her mother; and Spanish with a man whom I took to be her father. I can't be sure, but given that we were in Chicago, I'd guess he was Mexican American. I left them in peace, resisting an urge to ask them if their ancestors had come to South Chicago to work in the steel mills.

On the day I saw her, the toddler was experimenting with walking, jumping, and tumbling, making good use of the soft, rubberized surface provided for climbers who fall. In a few short years, perhaps, she will tackle the climbing wall in Steelworkers Park, the former ore wall at South Works, built out of slag atop yet more slag, made from Minnesota's Precambrian iron ore bands, Ohio's Permian coal, Indiana's Early Carboniferous limestone, and dumped into the inshore waters of Lake Michigan by generations of Chicago's East European, Irish, Italian, Mexican, and African American steelworkers.

I hope she does. From the top of the wall, on a clear day, if she looks to the south-southeast she'll easily see the billowing plumes rising from smokestacks at US Steel's Gary Works, 25 kilometers away in Gary, Indiana. It opened in 1908 and today is the largest steel mill in North America.

Notes

¹ The most comprehensive environmental history of Chicagoland is Kathleen A. Brosnan, Ann Durking Keating, and William C. Barnett eds., *City of Lake and Prairie: Chicago's Environmental History* (Pittsburgh: University of Pittsburgh Press, 2020). On the steel district, see Craig E. Colten, *Industrial Wastes in the Calumet Area, 1869-1970: An Historical Geography* (Champaign, IL: State Water Survey Division, Illinois Department of Energy and Natural Resources, 1985). Also useful is Joel Greenberg, *A Natural History of the Chicago Region* (Chicago: University of Chicago Press, 2002).

² An integrated steel mill makes steel directly from raw materials, converting coal into coke, iron ore into liquid iron, and iron into steel.

³ William Hard, "Making Steel and Killing Men," *Everybody's Magazine*, November 1907, 343-348.

⁴ A history attuned to ethnicity is Dominic Pacyga, *Chicago: A Biography* (Chicago: University of Chicago Press, 2009).

⁵ See *South Works Deep Geological Study: The Human Role in the Formation of Southwork*, an art project by the Chicago artist Stella J. Brown, which frames the story as part of the Anthropocene, <http://www.stellajbrown.com/south-works-deep-geological-study-1>.



J. R. McNeill enjoyed a stay at the RCC in the summer of 2011. He is professor at Georgetown University, has authored or edited more than 20 books, and has served as president of both the American Society for Environmental History and the American Historical Association. He is an elected member of both the American Academy of Arts and Sciences and the Academia Europaea. In 2018, he received the Heineken Award for History from the Royal Netherlands Academy of Arts and Sciences. He was a member of the RCC Advisory Board for six years.



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