The Flour-Milling Revolution in America, 1820–1920:

The Indiana Experience

DAVID PAUL NORD

ABSTRACT: In this article, David Paul Nord investigates the multi-faceted revolution of the flour-milling industry during the nineteenth and early twentieth centuries in America, centering general trends in Indiana and across the Midwest. His approach highlights what he identifies as the six key elements to understanding the flour milling revolution more fully—these include power, transport, agriculture, process, machinery, and marketing. Focusing on the success and expansion of small-to-medium-sized mills, Nord underscores the role of manufacturers of flour milling equipment during this innovative era; he also explores the dramatic growth in the production of high-tech milling machinery and the development of machine manufacturers into the role of full-service mill furnishers. The article concludes by considering how the transformational changes of the flour-milling revolution during the nineteenth and twentieth centuries have had lasting, even permanent effects on the industry, and hints that another revolution may yet be on the horizon.

David Paul Nord is professor emeritus of Journalism and adjunct professor emeritus of History at Indiana University–Bloomington. He is author of *Faith in Reading: Religious Publishing and the Birth of Mass Media in America* (2004) and *Communities of Journalism: A History of American Newspapers and Their Readers* (2001). In retirement Nord has ventured into local history. He is author of *Mapping Lawrence County, Indiana: An Annotated Bibliography, 1818–1941* (2018). He would like to thank the libraries of Indiana, especially Indiana University–Bloomington, the Indiana State Library, and the Indiana Historical Society, for their splendid collections on state business history.

INDIANA MAGAZINE OF HISTORY, 116 (December 2020). © 2020, Trustees of Indiana University.
doi: 10.2979/indimagahist.116.4.01

KEYWORDS: Agricultural history; history of agriculture; industrial history; history of industry; industrialization; Second Industrial Revolution in America; steam power; water power; coal power; railroads; grist milling; flour milling; history of flour milling; Lawrence County, Indiana; Washington County, Indiana; Jackson County, Indiana; Hamilton County, Indiana; Marion County, Indiana; Mitchell, Indiana; Bedford, Indiana; Evansville, Indiana; Seymour, Indiana; Indianapolis, Indiana; Noblesville, Indiana; Salt Creek; White River; Spring Mill; Beck's Mill; Atlas Engine Works; Chandler & Taylor Company; Stilwell & Bierce Manufacturing Company; James Leffel & Company; Richmond City Milling Company; Acme-Evans Company; Blish Milling Company; Noblesville Milling Company; Nordyke & Marmon Company; Akin-Erskine Milling Co.; Igleheart Brothers; Lawrenceburg Roller Mills Company; Archer-Daniels-Midland Company; Stone City Mill; Kelly & Company Mill; Rawlins Mill; winter wheat; E-Z Bake flour; Swans Down flour; New Process milling; "Victor" turbine; Jonathan Turley; Levi Igleheart; Asa Igleheart; William Igleheart; Wilbur Erskine; John Matthew; Washington C. DePauw; Charles Lemon; David Kelly; J. L. Evans; Hugh Hamer

In 1881, Charles Pillsbury built the largest flour mill in the world at the Falls of St. Anthony in Minneapolis on the Mississippi River. Driven by the latest technology in waterpower—two 55-inch turbines, each generating 1,200 horsepower—the new Pillsbury mill could produce 4,000 barrels of flour a day.[1] At the same time, Jonathan Turley, owner of Spring Mill, located on a small cave-spring creek in Lawrence County, Indiana, was desperately trying to save his failing business by upgrading his waterpower. In 1882, Turley installed an 8-inch water turbine, generating about 9 horsepower.[2] Pillsbury's mill was a spectacular success; Turley's mill failed completely within a decade.

---

[1] Charles Byron Kuhlmann, *The Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis* (Boston, Mass., 1929), 131–32; Stilwell & Bierce Mfg. Co., *The Victor Turbine* (Dayton, Ohio, 1882), 52; Registration Form for Pillsbury "A" Mill, written and prepared by Stephen Lissandrello (1975), p. 2, National Register of Historic Places, https://npgallery.nps.gov/pdfhost/docs/NHLS/Text/66000402.pdf.

[2] Stilwell & Bierce to Jonathan Turley, May 23, 1882, promissory note, June 13, 1882, Folder 5, Box 2, Jonathan Turley Papers, Manuscripts Division, Indiana State Library, Indianapolis.

This comparison captures the standard version of the history of flour milling in late nineteenth-century America: a concentration of production in increasingly large mills, with economies of scale in power, manufacturing, transportation, and marketing.[3] Indeed, the business of flour milling does seem to fit very well into the traditional narrative of the Second Industrial Revolution in the half century from 1870 to 1920: giant firms, mass production, and worldwide markets.[4] But that is not the whole story, or even the most interesting part. In fact, the industrialization of flour milling in this period was highly decentralized. In 1912, a leading milling magazine counted 7,831 commercial flour mills in the United States.[5] A crucial element of this part of the story was the dramatic growth in the manufacture of high-tech milling machinery as well as the movement of machine manufacturers into the role of full-service mill furnishers. In the late nineteenth century, a prospective flour miller could order up a completely furnished flour mill—any size, large or small—as easily as he could have purchased a millstone fifty years before. This was indeed an industrial revolution, but it was a revolution of the sort described by historian Philip Scranton: a revolution in the manufacture and marketing of producer goods (milling machinery) as much as a revolution in the production of consumer goods (flour and flour products).[6]

As a consequence of this industrial revolution, the community grist mill, with its iconic handmade, overshot wooden waterwheel, disappeared. But small-to-medium-sized flour mills, furnished with modern machinery, spread rapidly to cities and towns across America. New metalworking industries in the rising industrial cities of the Midwest served these

---

[3] Herman Steen, *Flour Milling in America* (Minneapolis, Minn.,1963), 47–48, 159–60; John Storck and Walter Dorwin Teague, *Flour for Man's Bread: A History of Milling* (Minneapolis, Minn., 1952), 239–40.

[4] For example, in 1918 a single firm, the Washburn-Crosby Company, operated a dozen mills in Minneapolis and four other American cities that produced over 60,000 barrels of flour a day, nearly 12,000 barrels more than *all* of the flour mills in Indiana. See *The Miller's Almanack and Year-Book of the Trade: A Compilation of Statistical and General Information of the Milling Industry and the Grain Trade, 1918–1919* (Minneapolis, Minn., 1918), 153. The classic account of this Second Industrial Revolution is Alfred D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, Mass., 1990). See also Thomas K. McCraw, ed., *Creating Modern Capitalism: How Entrepreneurs, Companies, and Countries Triumphed in Three Industrial Revolutions* (Cambridge, Mass., 1997).

[5] The Northwestern Miller, *Advertisers' Hand Book No. 37 Containing a List of Flour Mills in the United States and Canada* (Minneapolis, Minn., 1912), 5–6.

[6] Philip Scranton, *Endless Novelty: Specialty Production and American Industrialization, 1865–1925* (Princeton, N.J., 1997).

When Indiana Department of Conservation workers restored the mill at Spring Mill State Park in 1930, they built a new vertical wooden waterwheel. The mill's original wooden wheel had been abandoned decades earlier in favor of a metal water turbine.
Courtesy, Indiana Historical Society, Indianapolis, Indiana.

small companies along with the milling giants. For example, when Charles Pillsbury of Minneapolis and Jonathan Turley of Spring Mill shopped for precision metal water turbines to power their mills, they both turned to the same manufacturer: Stilwell & Bierce Manufacturing Company of Dayton, Ohio. Stilwell & Bierce's "Victor" turbines came in every size for every application, from Turley's modest 8-inch brass wheel to Pillsbury's 55-inch iron behemoths. Stilwell & Bierce was proud of the range of its products, and, in its 1900 catalog, listed both Pillsbury and Turley as customers.[7] Alas, by 1900, Turley was dead and his mill abandoned, replaced not only by big firms in big cities, but by a small, fully modernized flour mill just two miles away in the small town of Mitchell.

This article investigates the multi-level industrial revolution of flour milling in the American Midwest. It explores the proliferation of mostly small-to-medium-sized mills, paying particular attention to the role of manufacturers of flour-milling equipment. This story focuses on Indiana, which illustrates general trends across the region, but is also significant in its own right. As wheat culture moved west and north onto the central and northern plains, Indiana lost some stature as a grower of wheat and a miller of flour. But in the twentieth century, the state remained near the center of the winter wheat belt, and Indianapolis and Evansville emerged as major flour-milling centers.[8] Indiana boasted more than 500 commercial flour mills in 1912—ten with capacities between 500 and 1,000 barrels of flour a day, and six with daily capacities of 1,000 barrels or more.[9] By the late nineteenth century, Indiana also was home to several major milling

---

[7] Stilwell-Bierce & Smith-Vaile Co., *Descriptive Catalogue of the "Victor" Turbine*, Catalogue No. 23 (Dayton, Ohio, 1900), 167, 169. See also Victor turbine advertisements, in *Milling*, January 1894, p. vii; and *Weekly Northwestern Miller*, July 13, 1888, p. 48.

[8] U.S. Bureau of the Census, *Fourteenth Census of the United States Taken in the Year 1920*, vol. 5: *Agriculture* (Washington, D.C., 1922), 741–48; U.S. Bureau of the Census, *Fourteenth Census of the United States Taken in the Year 1920*, vol. 8: *Manufactures* (Washington, D.C., 1923), 192–93; U.S. Bureau of the Census, *Fourteenth Census of the United States, Manufactures: 1919, Indiana* (Washington, D.C., 1922), 19. See also John D. Barnhart and Donald F. Carmony, *Indiana: From Frontier to Industrial Commonwealth*, 2 vols. (New York, N.Y., 1954), 2:220, 414; and Jane R. Nolan, "Grain Milling in Indiana: The Evolution of Milling Technology and the Impact on the Industry in Indiana from 1800–1910," (M.A. thesis, Indiana University-Indianapolis, 1991).

[9] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 32–41; Thomas Publishing Co., *Thomas' Register of American Manufacturers and First Hands in All Lines: The Buyers' Guide, 1905–1906* (New York, N.Y., 1905), 414–19. A barrel of wheat flour weighed 196 pounds in traditional measurement and in most states' regulatory laws. See House Committee on Coinage, Weights, and Measures, *Weights and Measures for Flour-Mill and Corn-Mill Products, Etc.: Hearing before the Committee on Coinage, Weights, and Measures*, 67th Cong., 1st sess., May 6, 1921, p. 3.

machinery manufacturers and mill furnishers, including the leading firm in the country in this field: Nordyke & Marmon. By 1900, flour mills of all sizes around the world were planned, built, and equipped by Nordyke & Marmon of Indianapolis.[10]

A Milling Revolution

Before 1840, American flour mills were built on technology that had changed little over the centuries. Thanks to the ingenuity of the late eighteenth-century Philadelphia engineer Oliver Evans, mills had become more automated, with grain and flour typically moving through the building via mechanical elevators and conveyors.[11] Yet fundamental milling principles endured. Wheat was still ground between two horizontal millstones, and the flour separated from bits of bran (the shell of the wheat berry) in simple bolting (sifting) chests. Power was supplied by wooden waterwheels, connected to the stones and bolting chests by wooden shafts and wooden gearing. American roads, especially in the newly settled states of the trans-Appalachian West, were primitive as well. Thus, markets for wheat and flour, except for mills on navigable waterways, were strictly local. After 1840, everything changed. The flour-milling industry was revolutionized, and like most revolutions, this one was multi-faceted. Power, transport, agriculture, process, machinery, and marketing: these were the key elements of the flour-milling revolution.

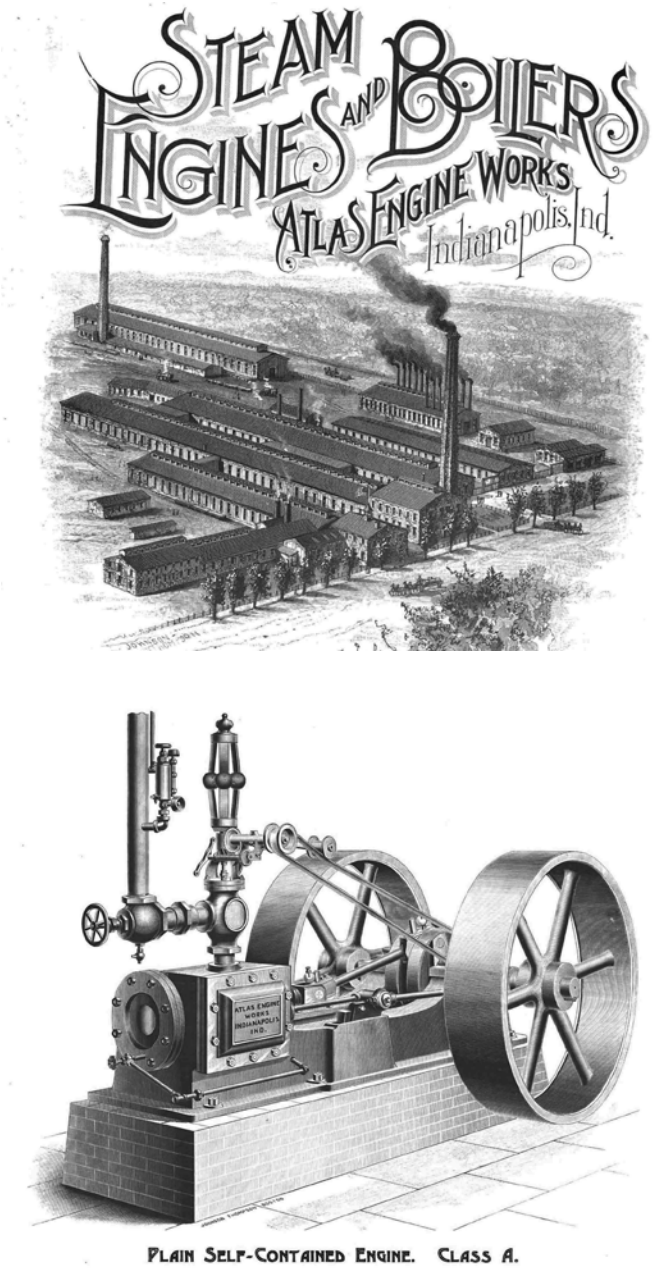
Power

Wooden waterwheels, especially overshot wheels, could be efficient if they were working properly, but this was rarely the case: they soaked up water and ran out of balance; they iced up in winter; they performed poorly in floods and droughts; they rotted; they needed constant maintenance and replacement; and their slow revolution necessitated substantial, inefficient gearing to step up the speed to run the stones and equipment in the mill. In the mid-to-late 1800s, after centuries of service, the wooden waterwheel completely disappeared everywhere in America, except as a

---

[10] Nordyke & Marmon Co., *Nordyke & Marmon Company: An Institution; A History of the Development of a Leading Indianapolis Industry* (n.p., 1920); Nordyke & Marmon Co., *Book on Mills and Milling, 1893* (Indianapolis, Ind., 1893); Nordyke & Marmon Co., *Catalogue of Portable Grinding Mills Made by Nordyke & Marmon Company* (Indianapolis, Ind., 1886).

[11] Storck and Teague, *Flour for Man's Bread*, chap. 12. See also Eugene S. Ferguson, *Oliver Evans, Inventive Genius of the American Industrial Revolution* (Greenville, Del., 1980).



Atlas Engine Works, *Catalogue*, 1896. Based in Indianapolis, Atlas supplied stationary engines to factories and shops, including flour mills, throughout the Midwest. In the late nineteenth century, steam power eclipsed waterpower for manufacturing in Indiana and throughout the United States.

nostalgic curiosity, and was replaced by high-tech brass and iron water turbines. These turbines were often manufactured in the new metalworking factories of the industrializing Midwest, such as the prominent Ohio firms Stilwell & Bierce of Dayton, and James Leffel & Company of Springfield.[12]

Another vital component of the power revolution in milling was also a metallurgical breakthrough: the perfection and proliferation of the steam engine. In the late nineteenth century, dependable and reasonably priced steam engines became available in all sizes, ready to install anywhere in any mill, regardless of production size.[13] Steam engines powered the industrialization of cities that had no waterpower, including Chicago and St. Louis, and small towns such as Mitchell and Bedford in Lawrence County, Indiana. Waterpower remained important where it could be efficiently tapped, but steam power allowed factories, including flour mills, to be located almost anywhere. By 1880, steam supplied twice the power of falling water in American industry; in Indiana the ratio was 83 percent steam power compared to 17 percent waterpower.[14] Two leading manufacturers of stationary steam engines emerged in Indiana: Atlas Engine Works and Chandler & Taylor Company, both of Indianapolis.[15]

Transport

By the mid-nineteenth century, transportation was also driven by steam. Improved wagon roads and canals carried their share of grain and flour, hauled by mules and horses, but the truly revolutionary improvements in transport were steamboats on the Ohio and Mississippi Rivers, steam

---

[12] Terry S. Reynolds, *Stronger Than a Hundred Men: A History of the Vertical Water Wheel* (Baltimore, Md., 1983), 338–49; Louis C. Hunter, *A History of Industrial Power in the United States, 1780–1930*, vol. 1, *Waterpower in the Century of the Steam Engine* (Charlottesville, Va., 1979), 346–47. See also Stilwell & Bierce Mfg. Co., *Victor Turbine (1882)*; and James Leffel & Co., *Illustrated Catalogue and Price List of Leffel's American Double Turbine Water Wheel* (Springfield, Ohio, 1868).

[13] Hunter, *History of Industrial Power in the United States, 1780–1930*, vol. 2, *Steam Power* (Charlottesville, Va., 1985), chaps. 7–8. Even James Leffel, the leader in water turbines, got into the manufacture and sale of steam engines. See James Leffel & Co., *Illustrated Hand Book of James Leffel's Improved Double Turbine Water Wheel for 1885 and 1886* (Springfield, Ohio, 1885), 124–25.

[14] Fletcher W. Hewes and Henry Gannett, *Scribner's Statistical Atlas of the United States, Showing by Graphic Methods Their Present Condition and Their Political, Social and Industrial Development* (New York, N.Y., 1883), plates 137–138.

[15] Hunter, *History of Industrial Power in the United States, 1780–1930*, vol. 2, *Steam Power*, 488, 492; The Seeger and Guernsey Company, *Seeger and Guernsey's Cyclopedia of the Manufactures and Products of the United States* (New York, N.Y., 1890), part 2, 134–37. See also ads for Atlas and for Chandler & Taylor in *Milling*, May 1894, pp. xxv, xxxiii.

freighters on the Great Lakes, ocean steamers, and—most important—steam railroads. During the railroad boom of the 1850s, thousands of miles of track were laid in the American wheat belt from Pennsylvania through Ohio and Indiana and onto the prairies of Illinois. In 1850, Indiana had about 220 miles of track; by 1860, more than 2,100 miles had been laid in the state.[16] The construction boom continued west and north after the Civil War. Railroads contributed both to concentration and differentiation in the flour-milling industry. Dramatically lower freight rates created national (and international) markets for flour and grain, which promoted the development of large milling centers such as St. Louis and Minneapolis. The same market forces, including lower costs for shipping coal and manufactured machinery, encouraged a remarkable degree of local diversity in flour milling as well.[17] As a result, a mill in a small midwestern rail town such as Seymour, Indiana, could successfully find a market niche alongside St. Louis, Kansas City, and Toledo.

Agriculture

Prior to 1850, American farmers from Delaware to Missouri grew a couple varieties of soft winter wheat—that is, wheat planted in the fall and harvested the next summer. The winter weather of Wisconsin, Minnesota, and the northern plains, however, proved to be too harsh for winter wheat, so millers turned to hard spring wheat varieties instead. Traditionally, hard spring wheat was more difficult to mill efficiently and was therefore considered inferior to winter wheat. Gradually, new milling processes were developed for hard spring wheat, and the northern plains became a highly productive wheat region. Meanwhile, winter wheat varieties were adapted to the central and southern plains and continued to thrive in the older wheat regions as well.[18] Indiana, for example, remained a major winter

---

[16] John F. Stover, *Iron Road to the West: American Railroads in the 1850s* (New York, N.Y., 1978), 116; Richard S. Simons and Francis H. Parker, *Railroads of Indiana* (Bloomington, Ind., 1997), 11–13; Barnhart and Carmony, *Indiana from Frontier to Industrial Commonwealth*, vol. 2, chaps. 2 and 13. See also Victor M. Bogle, "Railroad Building in Indiana, 1850–1855," *Indiana Magazine of History* 58 (September 1962), 211–32.

[17] Steen, *Flour Milling in America*, 41, 55–59; Kuhlmann, *Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis*, 159–63, 184–87.

[18] Kuhlmann, *Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis*, chaps. 4 and 6; Steen, *Flour Milling in America*, chap. 5. For overviews of U.S. agriculture in the late nineteenth century, see R. Douglas Hurt, *American Agriculture: A Brief History* (Ames, Iowa, 1994); Willard W. Cochrane, *The Development of American Agriculture*:

wheat producing state well into the twentieth century. Because different wheats produced different flours suited to different purposes, millers could specialize or create new flour blends. Indiana millers routinely advertised themselves as specialists in soft winter wheat flours, which were especially good for crackers, pastries, cakes, and general home baking. "Indiana leads all soft winter wheat growing states both in the quality of its wheat and the amount raised," the Acme-Evans Company declared in a 1911 ad. "Indiana produces 30% more wheat than any other soft winter wheat producing state, and the quality of Indiana flour is unexcelled."[19]

Process

Spring wheat had the potential to produce excellent flour, especially for bread, but it was difficult to mill in the traditional way. The hard bran shell was thin, brittle, and easily pulverized, which made sifting the flour from flecks of bran nearly impossible. The hardness also caused the millstones to run too hot, which damaged the flour. To solve these problems, millers in Minnesota, borrowing techniques from Central Europe, developed what came to be known as "New Process" milling. New Process employed "high grinding" and "gradual reduction." The wheat passed through the stones several times at slow speed, with the stones set a little closer together on each run. Between runs, flour was sifted from the bran and the middlings (pieces of endosperm—flour—with bran still attached), were then reground. New Process was primarily a new way to use traditional millstones, but one new machine was essential for extracting as much flour as possible from hard spring wheat: the middlings purifier. The middlings purifier used a blast of air to separate the bran from the middlings so that the middlings could be reground in the gradual-reduction process.[20]

A Historical Analysis, 2nd ed. (Minneapolis, Minn., 1993); and Dave O. Thompson Sr., and William L. Madigan, *One Hundred and Fifty Years of Indiana Agriculture* (Indianapolis, Ind., 1966).

[19] Steen, *Flour Milling in America*, 68; "Leading Mills of Indiana," advertising page in *Weekly Northwestern Miller*, January 11, 1911, p. 78. See also sources listed in note 8 and "Wheat Sector at a Glance," Economic Research Service, U.S. Department of Agriculture, last modified June 26, 2020, https://www.ers.usda.gov/topics/crops/wheat/wheat-sector-at-a-glance/.

[20] On New Process milling and the middlings purifier, see Storck and Teague, *Flour for Man's Bread*, chaps. 14–16; Kuhlmann, *Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis*, chap. 4; and Steen, *Flour Milling in America*, chap. 5. See also "The Famous Purifier War," *American Miller*, May 1, 1922, pp. 487–89.

Machinery

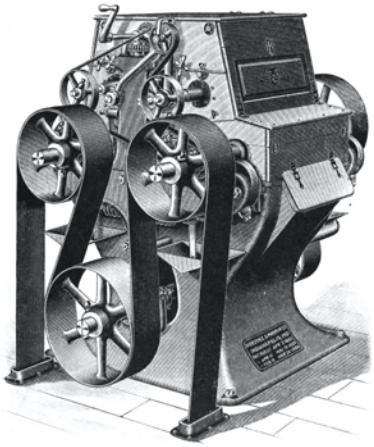
The middlings purifier was just one of many machines that revolutionized flour manufacturing in the second half of the nineteenth century. Milling had already been largely automated by Oliver Evans's conveyor-and-elevator system introduced in the early 1800s, but a flood of new machines appeared after 1860. In the new milling industry trade magazines, manufacturers advertised purifiers, separators, scalpers, scourers, steamers and temperers, dressers, dusters, cleaners, polishers, packers, feeders, and dust collectors—not to mention the usual gears, shafts, belts, and pulleys. The milling machines themselves changed, too. By the 1860s, millers could order pre-fabricated mills, with the millstones mounted and pre-balanced in sturdy frames with pulleys or iron gears in place, ready to install. Then in the 1880s an entirely novel machine for milling flour came on the market: the roller mill. These machines ground grain between two chilled iron rollers instead of millstones. Roller mills used less power and worked especially well with the New Process of milling spring wheat, but they quickly caught on everywhere. By 1900, the traditional millstone was as obsolete as the wooden waterwheel, and dozens of machine shops, especially in the Midwest, turned to the manufacture of roller mills and other milling equipment.[21] Two of the most important manufacturing companies of this era began life in the 1850s in Richmond, Indiana: Nordyke & Marmon Company and the Richmond City Mill Works. Richmond City remained in Richmond, while Nordyke & Marmon moved to Indianapolis in 1876, and would soon become the leading mill machinery manufacturer and mill furnisher in the world.[22]

---

[21] Storck and Teague, *Flour for Man's Bread*, chaps. 14–16, is a good source for descriptions and diagrams of these new milling machines. See also the flood of ads in the new milling trade magazines, such as the *American Miller*, the *Weekly Northwestern Miller*, *Milling*, the *Operative Miller*, and the *Roller Mill*. For an overview of technological change in milling in Indiana, see Nolan, "Grain Milling in Indiana."

[22] Nordyke & Marmon Co., *Nordyke & Marmon Company: An Institution*, chaps. 2–5; Nordyke & Marmon Co., *Catalogue No. 48: Nordyke & Marmon Company, Flouring Mill Engineers, Iron Founders and Machinists, Indianapolis, Indiana, U.S.A.* (Indianapolis, Ind., 1900); *Richmond City Mill Works Advertiser*, company newspaper, 1878. The J. B. Allfree Manufacturing Company was another Indianapolis milling machinery manufacturer. All three of these Indiana companies advertised regularly in the milling trade magazines and are prominently listed in *Seeger and Guernsey's Cyclopedia*.

Acme of Perfection.



"The Rolls furnished by you for our entire reduction are the Acme of Perfection in work, appearance and cleanliness."

REICHERT MILLING CO.,
FREEBURG, ILLS.

The Nordyke & Marmon Co. Roller Mill...

Is known everywhere as the

BEST MILL ON EARTH,

and it justly deserves the reputation.

Better Results and Better Service, with...
Less Care and Expense, Obtained by Using it.

Write us for Prices and Estimates.

NORDYKE & MARMON CO.,

FLOURING-MILL ENGINEERS,
IRON FOUNDERS AND MACHINISTS.

INDIANAPOLIS, IND.

Nordyke & Marmon Co., advertisement, *Roller Mill* magazine, July 1898. In the 1880s roller mills replaced traditional millstones in flour mills, both large and small. One of the most successful manufacturers of roller mills and other flour-milling machinery was Nordyke & Marmon of Indianapolis.

Marketing

The standard histories of the milling revolution associate the emergence of the new machinery, especially roller mills, with the concentration of flour milling in ever-larger enterprises.[23] In some ways, this is correct. But the advent of the modern machine age in milling was also the savior of medium and small milling operations. None of the new machines, including roller mills, were especially large; rather, the big mills simply had more of them. The key to both the growth of large mills and the persistence of smaller ones lay more in the realm of markets and marketing. Large-scale millers were able to influence domestic grain markets and the export trade more effectively than smaller operations. They also could cut better deals with railroads, commercial bakeries, and foreign buyers. However, regional diversity in wheat crops, grades and uses of flour, and consumer preference left room for smaller mills as well. Railroad regulation also aided the small shipper along the line. Moreover, as heirs to the tradition of the pioneer neighborhood mill, smaller millers tended to be diversified. While concentrating on wheat flour, they also milled corn, oats, and animal feed, and engaged in the local grain trade. Yet perhaps most significantly, smaller milling companies were often masters of product branding. By the early twentieth century, small-to-medium-sized midwestern mills had trademarked hundreds of brand names for their various flours. Several of those brands—such as E-Z Bake and Swans Down, both from Indiana mills—live on today, long after their mills of origin have closed.[24]

Eventually, in the decades after World War I and through the Great Depression, consolidation in the flour milling industry prevailed. A great deal of wheat is still milled in Indiana today, but much of that capacity is concentrated in a single Archer-Daniels-Midland Company facility in suburban Indianapolis, which in 2018 was the fourth largest flour mill in the country.[25] The Indiana flour mills described in this article are now

---

[23] Storck and Teague, *Flour for Man's Bread*, 239–40, 267; Steen, *Flour Milling in America*, 47–48.

[24] Kuhlmann, *Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis*, 187–90; Steen, *Flour Milling in America*, 54–58; Clifton J. Phillips, *Indiana in Transition: The Emergence of an Industrial Commonwealth, 1880–1920* (Indianapolis, Ind., 1968), 282–83. See also "Flour Brands, List of Brands Registered and Otherwise" and "Wheat Flour Trade-Marks Registered in the U.S. Patent Office" in the Northwestern Miller, *Advertisers' Hand Book No. 37*, pp. 263–86, 359–443.

[25] "Top 10 Largest U.S. Mills, by Capacity," in Sosland Publishing Company, *North American Grain & Milling Annual: Statistics and Listings for North America's Grain Handling and Processing Industries* (Kansas City, Mo., 2019).

gone, but from the mid-nineteenth century to well into the twentieth, many of them survived and even prospered—not in spite of the milling revolution but because of it.

Pioneer Transformations

In the 1810s and '20s, as white settlers moved north into Indiana from the Ohio River, the first task of savvy business entrepreneurs was to locate promising sites for water-powered gristmills. Two of the earliest and most important mills north of the river were Beck's Mill (1808) and Spring Mill (1814). Both survive today as restored historic sites, Beck's in Washington County and Spring Mill in Lawrence.[26] Like many pioneer mills in southern Indiana, Beck's Mill and Spring Mill were located at hillside cave springs, which were excellent sites for easily developed, small-scale waterpower. For several decades, the early mills flourished in the highly localized agricultural economy of pioneer Indiana. They performed custom grinding of cornmeal for local farmers, often then distilling their share of the grist (taken as in-kind tolls) into whiskey. Quite early, they began to grind local wheat as well. Besides the whiskey, the products of pioneer mills could rarely be sold profitably in distant markets due to the difficulty and high cost of transportation. The agricultural trade conducted in the pioneer era consisted largely of corn and salt pork, carried by flatboat down the Ohio and Mississippi Rivers to the slave-labor plantations of the Mississippi Delta and to the oceanic markets of New Orleans.[27] Gradually, as settlement boomed, agriculture diversified, and as transportation improved, the early Indiana mills had to confront the milling revolution. For mills

---

[26] Goodspeed Bros. & Co., *History of Lawrence, Orange and Washington Counties, Indiana: From the Earliest Time to the Present; Together with Interesting Biographical Sketches, Reminiscences, Notes, etc.* (Chicago, Ill., 1884), 39–40, 694–95; Warder Stevens, *Centennial History of Washington County, Indiana: Its People, Industries and Institutions: With Biographical Sketches of Representative Citizens and Genealogical Records of Many of the Old Families* (Indianapolis, Ind., 1916), 75, 153, 576–77. The best overview of the history of Beck's Mill is Registration Form for Beck's Mill, written and prepared by Jane Nolan (1990), National Register of Historic Places, https://npgallery.nps.gov/GetAsset/bce830fd-99f6-4d1b-958a-3d5ccfb31083. On the restoration of Beck's Mill, see Bob Hammel, *The Bill Cook Story II: The Re-Visionary* (Bloomington, Ind., 2015). The best history of Spring Mill—the mill, village, and people—is Mohammed S. Ansari, *A History of Spring Mill Village* (Mitchell, Ind., 1985). See also E. Y. Guernsey, *Spring Mill State Park: A History and Description* (Indianapolis, Ind., 1931).

[27] Goodspeed Bros. & Co., *History of Lawrence, Orange and Washington Counties*, 136–37; Richard F. Nation, *At Home in the Hoosier Hills: Agriculture, Politics, and Religion in Southern Indiana, 1810–1870* (Bloomington, Ind., 2005), chap. 3; Donald F. Carmony, *Indiana, 1816–1850: The Pioneer Era* (Indianapolis, Ind., 1998), chap. 2.

such as Beck's and Spring Mill, 1855 to l865 was a decade of disruption and transformation.

The Civil War had an immediate impact by closing the lower Mississippi to waterborne trade from the North. A more profound and lasting impact on Indiana agriculture and the milling industry, however, resulted from the railroad boom of the 1850s. The fates of Beck's Mill and Spring Mill suggest how the pioneer mills were affected by railroads. The first railroad to arrive in this part of Indiana was the New Albany & Salem, which bisected Washington and Lawrence Counties. Later called the "Monon," this north-south line linked New Albany with Salem in 1851, reached Bedford and Bloomington in 1853, and finally connected the Ohio River with Lake Michigan at Michigan City in 1854. The other rail line was the east-west Ohio & Mississippi Railroad, linking Cincinnati and St. Louis. It was completed through Lawrence County in 1857.[28] The New Albany & Salem station in Salem lay about six miles north of Beck's Mill. Spring Mill was much closer to its railroads: the New Albany & Salem ran about two-and-a-half miles to the east, and the Ohio & Mississippi passed within a few hundred yards of the mill village, along the bluff just above Spring Mill valley.

In that era, businessmen usually fancied that railroads were godsends. Sometimes they were; sometimes not. For millers, the impact of railroads was complex. Railroads promised wider markets for mill products, but they also offered local farmers the attractive alternative of selling their grain away to distant markets. On the other hand, millers might be able to get grain from distant sources when local sources were scarce. Railroads also brought manufactured products from a distance into local markets, including, perhaps, a distant mill's flour. However, the most portentous import by rail was coal. Cheap coal for steam power destroyed the comparative advantage of waterpower for small mills.[29] In the late nineteenth century, mills like Beck's and Spring Mill were overmatched, not only by the large flour mills and grain markets in places like Cincinnati, St. Louis,

---

[28] Simons and Parker, *Railroads of Indiana*, 11–13, 129–30, 135–37; George W. Hilton, *Monon Route* (Berkeley, Calif., 1978), 16–27.

[29] Hunter, *History of Industrial Power*, vol. 2, *Steam Power*, 429–31; Hewes and Gannett, *Scribner's Statistical Atlas of the United States*, plate 138. The victory of steam over waterpower was a long process. See Marti Jaye Frank, "Carrying the Mill: Steam, Waterpower and New England Textile Mills in the 19th Century," (Ph.D. diss., Harvard University, 2008).

and Chicago, but also by their own neighbors' steam-powered mills in nearby Salem, Mitchell, and Bedford.

It took time for the complex, competitive impact of the milling revolution to become clear to the proprietors at Beck's and Spring Mill. In 1864, perhaps encouraged by wartime prosperity, the Becks were optimistic about their future and decided that the time was right to modernize their old mill. They built a new two-story building, shored up the dam at the cave entrance, and installed a new iron-pipe flume and a 13 1/2 inch turbine from James Leffel & Company.[30] The Becks also acquired new pre-fabricated milling machines from nearby manufacturers. Their new wheat mill was built by Herbert & Wright of Louisville, Kentucky. Herbert & Wright began as importers and assemblers of French buhr stones in the 1840s, and by the 1850s were Louisville's leading manufacturer of milling equipment. The Becks' new corn mill was manufactured by Isaac Straub of Cincinnati. Straub had founded his company in 1844, and by the 1860s was well known as the builder of the small prefab mill that the Becks installed: the "Queen of the South."[31]

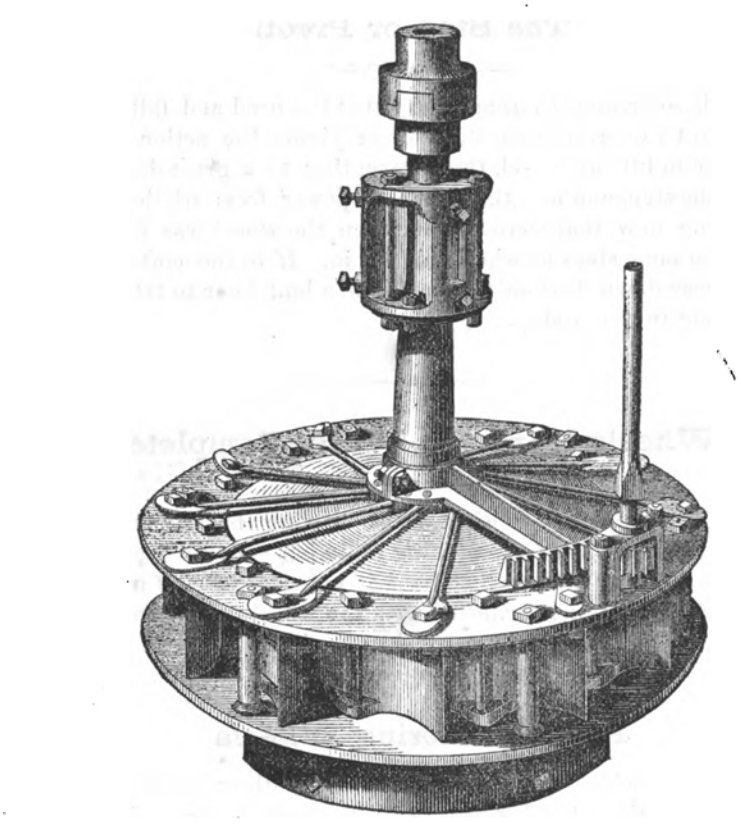
For Spring Mill in Lawrence County, the 1860s turned out to be much less propitious than the mill's owner, Hugh Hamer, had hoped. Hamer had long believed that improved transportation would greatly benefit his mill and distillery. Since the 1830s, he had been involved in the flatboat trade with the South via the White River, which passed just a couple miles north of Spring Mill village. As local postmaster and state legislator, he had long been a promoter of improved roads and railroads.[32] The Civil War interrupted his Southern trade, but in the realm of railroads, Hamer's dream actually came true. After 1857, Spring Mill found itself very near the crossing of two long-distance rail lines: the New Albany & Salem and the Ohio & Mississippi. If improved transportation were all that Spring Mill had needed to prosper, prosperity would have been at hand. Indeed,

---

[30] James Leffel & Co., *Illustrated Catalogue and Price List of Leffel's American Double Turbine Water Wheel* (Springfield, Ohio, 1868), 69, lists the sale of this turbine to Beck's Mill. See also Registration Form for Beck's Mill, by Jane Nolan, National Register of Historic Places.

[31] N. Peabody Poor, *Haldeman's Picture of Louisville, Directory and Business Advertiser, 1844–1845; Containing an Historical Sketch of the Town from 1778 to the Present Time, and the Trade and Statistics of the City; City and County Officers; River Distances and General Directory* (Louisville, Ky., 1844), 98; C. S. Williams, *Williams' Cincinnati Directory, City Guide, and Business Mirror; or Cincinnati Illustrated, Fourth Annual Issue* (Cincinnati, Ohio, 1853), 296. See also Charles D. Hockensmith *The Millstone Industry: A Summary of Research on Quarries and Producers in the United States, Europe and Elsewhere* (Jefferson, N.C., 2009).

[32] Ansari, *A History of Spring Mill Village*, 50–54, 58–61.



The James Leffel Co., *Catalogue*, 1868. In the 1860s Indiana mills began to replace their wooden waterwheels with iron or brass water turbines. The Leffel Co., a leading manufacturer of turbines based in Springfield, Ohio, supplied Beck's Mill with a turbine like this one.

the rail crossroads that became the town of Mitchell might well have been named Spring Mill Crossing—that is, Spring Mill's new transportation depot. But that is not what happened.[33]

Instead, Spring Mill—and Beck's Mill, too—provide case studies in how railroads could subvert the interests of small water-powered mills without destroying the potential for small-scale flour milling in general. On

[33] In various booklets and guides for Spring Mill State Park, a story is told and retold about the railroads "bypassing" Spring Mill Village. In fact, the railroads—especially the Ohio & Mississippi—passed about as close to the mill as they possibly could.

the one hand, railroads helped to drive the centralization of flour milling in large cities such as St. Louis, which had already emerged as a major milling center even before the railroad age.[34] By reducing transport costs, railroads raised the value of agricultural crops in the areas through which they passed and changed the geographic distribution of staple crops such as wheat. So, the Ohio & Mississippi Railroad did bring Spring Mill into competition with St. Louis and Cincinnati. On the other hand, railroads—and other elements of the milling revolution—also nurtured small-scale competitors right next door. For Spring Mill, those competitors were in Mitchell and Bedford; for Beck's Mill, they were in Salem.

Salem, founded in 1814, was the county seat and principal town of Washington County. From the beginning, Salem had supported a gristmill or two, powered by horses or by the small waterpower of Brock Creek. The first steam-powered grist mill was built in 1833.[35] The arrival of the New Albany & Salem Railroad in the 1850s was a font of opportunity for Salem's businessmen, including the city's most aggressive young entrepreneur, Washington C. DePauw. DePauw built a successful steam-powered flour mill in Salem, opened several other mills elsewhere, and became a major player in the regional grain trade. He made a fortune as a government contractor and securities speculator during the Civil War and then another fortune after the war as an industrialist in New Albany.[36] DePauw's mill and two other flour mills in Salem prospered into the 1880s and beyond, each producing in the range of 50 to 60 barrels of wheat flour a day, plus cornmeal and feed. By 1892, the Salem mills had all converted to roller milling, with the attendant New Process machinery. Two of those mills—the Salem Milling Company and the Salem Farmers Milling Company—survived well into the twentieth century. These were small operations in 1912, but

---

[34] Kuhlmann, *Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis*, 83–86; Steen, *Flour Milling in America*, 40–41.

[35] Goodspeed Bros. & Co., *History of Lawrence, Orange and Washington Counties,* 761; Stevens, *Centennial History of Washington County, Indiana*, 611–13.

[36] H. C. Chandler & Co., *H. C. Chandler & Co.'s Business Directory and Shipper's Guide for the State of Indiana* (Indianapolis, Ind., 1868), 448; "Depauw, Washington Charles," in *A Biographical History of Eminent and Self-Made Men of the State of Indiana,* vol. 1 (Cincinnati, Ohio, 1880), 3rd District, 10–11; Lawrence M. Lipin, *Producers, Proletarians, and Politicians: Workers and Party Politics in Evansville and New Albany, Indiana, 1850–1887* (Urbana, Ill., 1994), 185–87.

thanks to the railroads and mill-furnishing companies, the mills could get the coal, wheat, and modern equipment needed to carry on.[37]

A similar scenario played out in Lawrence County. By the mid-1860s, the rail crossing just west of Spring Mill had grown from nothing into a substantial community of 1,500 people. Named for the railroad surveyor who laid it out, Mitchell was so close to Spring Mill that the post office and shops that had grown up in the mill village quickly moved over to the new railroad town.[38] It was becoming clear that the proximity of two railroads was not the boon to the mill that Hugh Hamer had envisioned, but the local flour milling business itself was not ruined. In 1866, a returning Civil War veteran named David Kelly opened a new steam-powered flour mill in Mitchell alongside the tracks of the Ohio & Mississippi Railroad. Milling both wheat and corn, the Kelly & Company Mill was successful for decades. In the 1880s, the mill could produce 50 barrels of wheat flour a day, and by the 1890s had been entirely converted to the roller process, complete with all new machinery.[39] The succeeding owners, William Matthew and his son John, took the milling business into the twentieth century, raising production capacity to 80 barrels a day. Though Lawrence County was never much of a wheat producer, the Matthews family advertised in the local newspaper as buyers of local wheat and sellers of "first class flour," including their own family flour brand, "White Loaf."[40]

Flour milling in Lawrence County also flourished in Bedford, ten miles north of Mitchell on the New Albany & Salem Railroad. In the early 1800s, Bedford had been served mainly by the water-powered Rawlins Mill on Salt

---

[37] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 39; Sanborn Map & Publishing Co., *Salem, Ind.*, 50 ft to an inch, New York, N.Y., 1887, sheets 1 and 2; Sanborn-Perris Map Co., *Salem, Washington, Co., Ind.*, 50 ft to an inch, New York, N.Y., 1892, sheets 1 and 2; Sanborn Map Company, *Salem, Washington County, Indiana*, 50 ft to an inch, New York, N.Y., 1910, sheets 3 and 5.

[38] H. C. Chandler & Co., *H. C. Chandler & Co.'s Business Directory and Shipper's Guide for the State of Indiana*, 328. See also Ansari, *A History of Spring Mill Village*, 59–61; and James W. Edwards, *History of Mitchell and Marion Township, Indiana* (Mitchell, Ind., 1916).

[39] Mitchell map in B. N. Griffing, *An Atlas of Lawrence County, Indiana* (Philadelphia, Pa., 1879), 42–43; "Mitchell," in *Leading Industries of the Principal Places in Decatur, Bartholomew, Jackson and Lawrence Counties, Indiana With a Review of their Manufacturing, Mercantile and General Interests, Advantageous Location &c; Including a Brief Historical and Statistical Sketch of their Rise and Progress* (n.p., 1885), 160–61; Sanborn-Perris Map Co., *Mitchell, Lawrence County, Ind.*, 50 ft to an inch (New York, N.Y., 1894), sheet 1.

[40] Sanborn-Perris Map Co., *Mitchell, Lawrence County, Ind.*, 50 ft to an inch (New York, N.Y., 1899), sheet 2; Sanborn Map Co., *Mitchell, Lawrence County, Indiana*, 50 ft to an inch (New York, N.Y., 1909), sheet 2; *Mitchell Commercial*, May 21, 1896; April 16, 1908; June 24, 1909. See also ads for Matthew & Sons in *Mitchell Commercial*, June 4, 1896, and June 25, 1896.

Creek, two miles north of town. Then, several steam-powered flour mills were built in the city in the 1850s and '60s.[41] In the 1880s, Charles Lemon emerged as the leading Bedford miller and eventually a leading miller in the state. Lemon owned two steam-powered mills in the city, including the Stone City Mill, which he fully modernized into a New Process roller mill. Most of Lemon's new machinery was manufactured by Nordyke & Marmon, though a couple of his machines came from the Richmond City Mill Works.[42] Like the Matthews in Mitchell, Lemon engaged in the grain trade as well as flour milling, often advertising for local wheat, corn, and other grains. Stone City's wheat flour capacity was 125 barrels a day in 1912. As president of the Indiana Millers Association in 1917–18, Lemon played a key role in the wartime mobilization of the flour milling industry in the state.[43]

While flour mills in the small cities of Salem, Mitchell, and Bedford thrived, the water-powered mills at Beck's Mill and Spring Mill languished and eventually failed. Beck's was distant enough from Salem to continue for a while as a local farmers' corn and feed mill—and as a neighborhood gathering place. But the Beck's Mill post office closed in 1900, and the mill stopped grinding wheat and corn in 1901.[44] At Spring Mill, after Hugh Hamer died in 1872, the new proprietor, Jonathan Turley, thought hard about how to keep the operation going. His surviving business papers reveal that in the early 1880s, he contemplated a thorough modernization of the mill, with new flour-milling equipment from several mill furnishers, including Richmond City. Turley discarded the old wooden waterwheel and installed a new Victor turbine from Stilwell & Bierce, but his correspondence suggests that he likely did not complete other intended improvements to the mill—competition in Mitchell was just too close. Instead, Turley concentrated on his distillery, shifting production from Old Hamer's corn

---

[41] Goodspeed Bros. & Co., *History of Lawrence, Orange and Washington Counties, Indiana*, 60; George W. Hawes, *George W. Hawes' Indiana State Gazetteer and Business Directory For 1860 And 1861*, 2nd ed., (Indianapolis, Ind., 1860), 605; H. C. Chandler & Co., *H. C. Chandler & Co.'s Business Directory and Shipper's Guide for the State of Indiana*, 28; R. L. Polk & Co., *Polk's Indiana State Gazetteer and Business Directory* (Indianapolis, Ind., 1884), 111–12.

[42] *Bedford Lawrence Mail*, March 18, 1886; *Bedford Mail*, March 13, 1891; Sanborn-Perris Map Co., *Bedford, Lawrence Co., Ind.*, 50 ft to an inch (New York, N.Y., 1892), sheet 2; Sanborn-Perris Map Co., *Bedford, Lawrence Co., Ind.*, 50 ft to an inch (New York, N.Y., 1898), sheet 6; James M. Guthrie, *A Quarter Century in Lawrence County, Indiana, 1917–1941* (Bedford, Ind., 1984), 111.

[43] *Bedford Lawrence Mail*, February 18, 1886; *Bedford Daily Mail*, March 6, 1894; The Northwestern Miller, *Advertisers' Hand Book No. 37*, 32; *American Miller*, July 1, 1917, p. 559.

[44] Registration Form for Beck's Mill, by Jane Nolan, National Register of Historic Places, 584.

whiskey to apple and peach brandy.[45] Turley also developed a lime-burning business and shipped lime from a railroad siding along the Ohio & Mississippi Railroad, just northeast of Spring Mill village. But his properties proved unsatisfactory for serious lime production, so this became for him yet another business failure. Turley died in 1896. His mill, distillery, and lime kilns—indeed, the entire village—were abandoned around 1900.[46]

Why did the old mills fail, while new nearby mills of similar capacity prospered? The answer lies in the multi-faceted character of the milling revolution. Perhaps most important, improvements in transportation, notably the advent of the railroad, dramatically reduced the cost of coal, thus making steam power a viable alternative to waterpower for small mills.[47] Railroads had other influences as well. Though small mills usually continued to serve local consumer markets, railroads allowed local millers to engage in the broader grain trade, sometimes selling local wheat away, sometimes bringing wheat in when local crops failed. Railroad towns such as Salem, Mitchell, and Bedford also offered agglomeration economies to millers. Though small, these towns were incipient urban centers, with carpenters, mechanics, metal and leather workers, grocers, bakers, bankers, farmers in town on other business, flour-buying families, newspaper advertising departments, and many other economic players, right there at hand.[48] The mechanical/industrial side of the milling revolution was another benefit to the new mills—to newness in general. When new machines were needed,

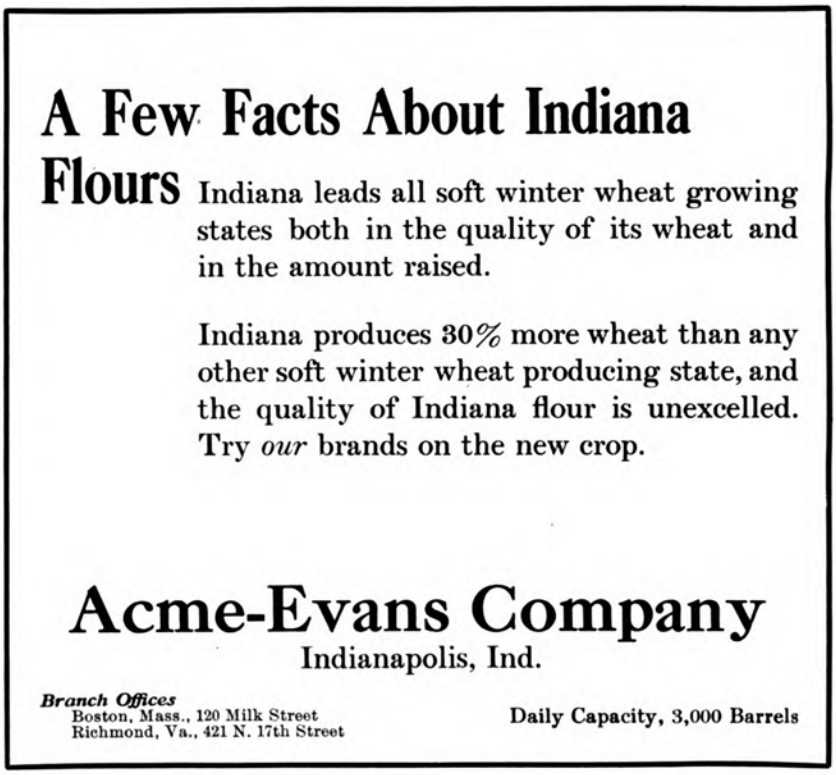
---

[45] Jonathan Turley Papers, Indiana State Library. This collection is replete with letters and bids from milling equipment furnishers in 1881–82, as well as letters, tax receipts, and ledgers related to his distilling business. For an overview of the Turley era at Spring Mill, see Ansari, *A History of Spring Mill Village*, chap. 4.

[46] The failure of Turley's lime business is traced in his correspondence with the Salem Stone and Lime Company, Jonathan Turley Papers, 1890–91, Folders 1–2, Box 3, Indiana State Library. See also Goodspeed Bros. & Co., *History of Lawrence, Orange and Washington Counties, Indiana,* 159.

[47] On the interconnections of rail, coal, and steam power, see Hunter, *History of Industrial Power in the United States, 1780–1930,* vol. 2, *Steam Power*, 430–31; and Emma Lou Thornbrough, *Indiana in the Civil War Era, 1850–1880* (Indianapolis, Ind., 1965), 407–408. On the development of Indiana coal fields in the late nineteenth century, see Phillips, *Indiana in Transition 1880–1920*, 185–91; and U.S. Bureau of the Census, "Mines and Mining: Coal Product of Illinois, Ohio, Indiana, and Michigan," *Census Bulletin No. 74* (Washington, D.C., 1891), 13–15.

[48] For an overview of the theory of urban agglomeration economies, see William C. Strange, "Urban Agglomeration," *The New Palgrave Dictionary of Economics*, 3rd ed., (London, UK, 2018), 14118–22. See also Jeremy Atack et al., "Did Railroads Induce or Follow Economic Growth? Urbanization and Population Growth in the American Midwest, 1850–1860," *Social Science History* 34 (Summer 2010), 174, 190–91.



Acme-Evans Co., advertisement, *Weekly Northwestern Miller* magazine, January 1911. In the late nineteenth century, wheat culture moved with the railroads onto the central and northern plains, but Indiana remained a leading producer of soft winter wheat.

equipping an entirely new mill in town could be just as economical as remodeling an old mill in the countryside.

Finally, though the revolutions in transportation, agriculture, and machinery opened vast new wheat lands on the northern and central plains, Indiana did not abandon wheat. In 1880, Indiana ranked second among all states in wheat production, and Indiana continued to rank among the top ten wheat states through the 1920s, producing a variety of soft and hard winter wheats. Because different areas within Indiana and in neighboring states concentrated more on wheat culture than did other areas, millers in railroad towns could more easily adapt to changing weather conditions, variable crop yields, and volatile grain markets across the state and across

the region.[49] In short, the flour milling industry in Indiana adapted and survived. When the Matthew Mill in Mitchell burned in 1911, John Matthew simply packed up and moved on to become head miller at a flour mill in Loogootee, another pure railroad town 28 miles west on the old Ohio & Mississippi line.[50]

Winter Wheat Prosperity

Some Indiana flour mills did not merely adapt and survive the milling revolution; they flourished, growing into large-scale manufacturers and savvy marketers of midwestern winter wheat flour. By 1912, sixteen of Indiana's 512 flour mills had production capacities of at least 500 barrels of flour per day; six of those sixteen were rated at 1,000 barrels or more per day. Those six were Akin-Erskine Milling Co. (2,500 barrels) and Igleheart Brothers (1,000) in Evansville, Acme-Evans Company (3,000) in Indianapolis, Lawrenceburg Roller Mills Company (1,800) in Lawrenceburg, the Noblesville Milling Company (1,200) in Noblesville, and Blish Milling Company (1,200) in Seymour. Other significant flour-milling cities in Indiana at the time were Goshen, Fort Wayne, Monticello, Terre Haute, Madison, Vincennes, and Mount Vernon.[51]

The history of Blish Mill in Seymour illustrates how a small pioneer flour mill in southern Indiana could evolve into a major manufacturing enterprise able to compete in national and global markets. The story begins in Rockford, a crossroads village that grew up at a ford on the White River in northeast Jackson County, eighteen miles south of Columbus. In 1816, James Shields, one of the county's earliest settlers, built a water-powered gristmill at Rockford to serve local farmers, much like Beck's Mill and Spring Mill in nearby Washington and Lawrence Counties. The mill was later taken over by Shields's son, Meedy, who became a major land speculator, business promoter, and political potentate in the county in the 1840s and

---

[49] *Fourteenth Census of the United States*, vol. 5: *Agriculture*, 741–43, esp. map 143; U.S. Bureau of the Census, *Fourteenth Census of the United States Taken in the Year 1920*, vol. 6, part 1: *Agriculture* (Washington, D.C., 1922), 352–60. See also Barnhart and Carmony, *Indiana*, 2: 220, 414; and Jane R. Nolan, *Agricultural Development in Seventeen Counties in Southwestern Indiana, 1730–1900* (Indianapolis, Ind., 1988), 35–36.

[50] *Mitchell Commercial*, March 9, August 24, 1911.

[51] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 32–41. See also "Flour Mills and Grist Mills—1914 Census," in *The Miller's Almanack and Year-Book of the Trade: A Compilation of Statistical and General Information of the Milling Industry and the Grain Trade, 1918–1919* (Minneapolis, Minn., 1918), 250.

'50s. In 1860, Meedy Shields sold the mill to his son-in-law and business partner, John Blish, who then moved the operation two miles south to Seymour. A brand-new town that Shields was promoting, Seymour stood at the intersection of the Jeffersonville & Indianapolis Railroad and the Ohio & Mississippi Railroad, rail lines which were completed through Jackson County in 1852 and 1857.[52]

The migration of business from Rockford to Seymour parallels the Spring Mill-to-Mitchell migration in Lawrence County—and many other railroad-induced migrations as well. The old town of Rockford had the advantages of early settlement, roads, waterpower, modest river transportation, and a nearby railroad after 1852 (the Jeffersonville line). Seymour, however, grew up at the crossing of *two* railroads, and that made all the difference. Businesses that used rail services sprang up in the new town, as did secondary businesses that benefited from agglomeration economies and urbanization in general. Meanwhile, shops that required mechanical power, such as mills, benefited from cheap coal delivered by rail. As in Lawrence County, steam power could now compete with waterpower in Jackson County. So, like David Kelly in Mitchell, John Blish set up his new mill in Seymour, at the precise intersection of the Jeffersonville & Indianapolis and the Ohio & Mississippi rail lines.[53]

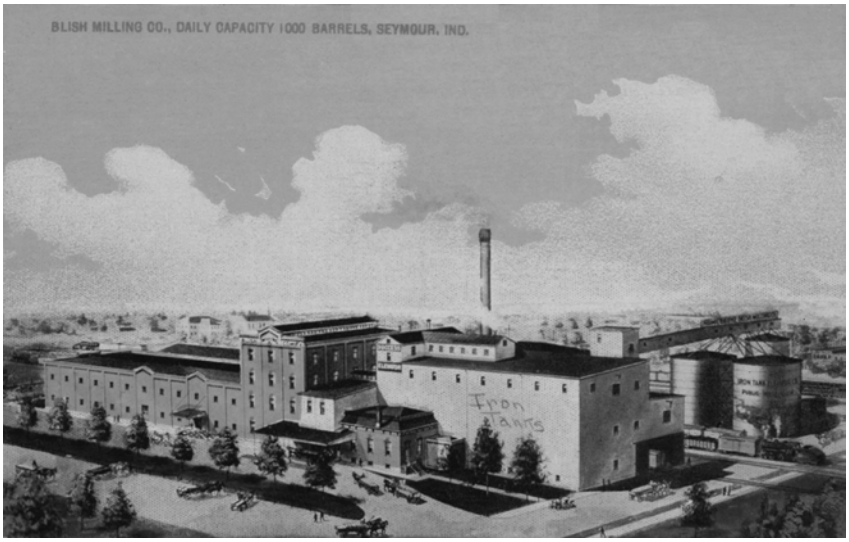
Though both Mitchell and Seymour were offspring of the Ohio & Mississippi Railroad, Seymour was better situated. Unlike the New Albany & Salem Railroad at Mitchell, the Jeffersonville line at Seymour had a direct connection to Louisville and points south (via an Ohio River bridge after 1870) and to Indianapolis and points east and northeast. More important, John Blish's sons M. S. Blish and T. S. Blish were superior entrepreneurs. After Blish Mill burned in 1885, the sons rebuilt and expanded, installing modern New Process milling equipment, including Nordyke & Marmon roller mills.[54] The Blishes specialized in flours ground from winter wheat

---

[52] Loren W. Noblitt, *History of the Blish Milling Company, Seymour, Indiana* (Seymour, Ind., 2000), 15–17; *History of Jackson County, Indiana, from the Earliest Time to the Present, with Biographical Sketches, Notes, Etc., Together with an Extended History of the Northwest, the Indiana Territory, and the State of Indiana* (Chicago, Ill., 1886), 433–36, 716–18. See also *History of the Blish Milling Company: One of Indiana's Pioneer Industries* (n.p., 1934).

[53] Noblitt, *History of Blish Milling Company, Seymour, Indiana*, 17. On the early history of Seymour, see *History of Jackson County, Indiana*, chap. 15.

[54] Noblitt, *History of Blish Milling Company, Seymour, Indiana*, 21, 24; Blish ad, *Weekly Northwestern Miller*, July 6, 1888, p. 22; Sanborn-Perris Map Co., *Seymour, Jackson Co., Indiana*, 50 ft to an inch (New York, N.Y., 1896), sheet 4.



Blish Milling Co., postcard, c. 1910. Blish started out as a pioneer water-powered mill in Rockford, but in the late nineteenth century the company evolved into a major manufacturing enterprise after moving to the railroad crossroads town of Seymour.
Courtesy, Allen County Public Library, Fort Wayne, Indiana.

grown in southern Indiana and southern Illinois, and they continually expanded their milling plant and grain elevators. By the early twentieth century, the Blish Milling Company could produce 1,000 to 1,200 barrels of flour per day, with an elevator capacity in 1918 of 500,000 bushels of wheat, the third largest in the state.[55]

The Blish brothers were skilled in the emerging arts of branding and foreign export. In the late 1800s, American flour mills began to brand their various grades and blends of flour; by the early 1900s, thousands of brands and trademarks had been adopted and registered. Already in 1889, the Blish Company advertised seven brands in three categories, each a different blend of varieties and grades of Indiana winter wheat. By the 1910s, one of their largest customers was another master of branding and modern marketing: the National Biscuit Company of New York City, makers of

[55] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 39; Thomas Publishing Co., *Thomas' Register of American Manufacturers and First Hands in All Lines: The Buyers' Guide, 1905–1906*, 415; "Elevators," in *The Miller's Almanack and Year-Book of the Trade: A Compilation of Statistical and General Information of the Milling Industry and the Grain Trade, 1918–1919,* 159.

the famous Uneeda Biscuit.[56] Branding (and the quality control needed to standardize a brand) also helped Blish establish a substantial export trade in the 1890s with England, Scotland, Germany, and France exporting its products via the ports of New York, Philadelphia, and Baltimore.[57] The Baltimore connection became increasingly important after 1893 when the Ohio & Mississippi Railroad was absorbed into the Baltimore & Ohio system. By the start of World War I, Blish Milling Company had become one of the largest exporters of winter wheat flour in the country. In 1916, a Baltimore newspaper reported that the largest cargo of flour ever shipped from an American port, consisting of 18 million pounds of Blish's "Hermes" brand flour, had just been loaded out of Baltimore.[58]

While Blish Milling grew and developed in a new railroad town, three of the six largest Indiana flour mills of 1912 thrived in two of the state's oldest Ohio River cities. These were Lawrenceburg Roller Mills of Lawrenceburg and Igleheart Brothers and Akin-Erskine Milling of Evansville.[59] Lawrenceburg and Evansville were originally frontier river ports and trading centers, whose commercial prospects brightened considerably during Indiana's canal-building era in the 1830s and '40s. Lawrenceburg was the Ohio River terminus of the Whitewater Canal, which reached north into the developing agricultural lands of southeastern Indiana. Evansville was the terminus of the Wabash & Erie Canal, which linked Lake Erie at Toledo with the Ohio River at Evansville. Both canals had some success, but for reasons both financial and practical, they eventually failed.[60] In the end, the city that

---

[56] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 263–329, 359–443; *Weekly Northwestern Miller*, February 8, 1889, p. 181; *Seymour Daily Republican*, January 14, 1914.

[57] *Milling*, May 1894, p. 416; *Seymour Daily Republican*, October 7, 1914; Blish ad, *Weekly Northwestern Miller*, April 4, 1917, p. 23. In 1918, T. S. Blish chaired the Committee on Export Trade and Legislation of the Millers' National Federation. See *American Miller*, May 1, 1919, p. 436.

[58] Noblitt, *History of Blish Milling Company, Seymour, Indiana*, 25–29, quotation p. 28.

[59] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 32–41; Thomas Publishing Co., *Thomas' Register of American Manufacturers and First Hands in All Lines: The Buyers' Guide, 1905–1906,* 415; American Flour Mill Directory Company, *American Flour Mill Directory, Containing a List of the Merchant Mills of the United States which are Engaged in the Manufacture of Wheat Flour and Other Cereal Products*, vol. 1 (Nashville, Tenn., 1906), 48, 56–57. Another large flour mill in the early twentieth century, the William Trow Co., was located in Madison, one of Indiana's oldest Ohio River towns.

[60] On Indiana canals, see Paul Fatout, *Indiana Canals* (West Lafayette, Ind., 1985); and Ralph D. Gray, "The Canal Era in Indiana," in *Transportation and the Early Nation: Papers Presented at an Indiana American Revolution Bicentennial Symposium* (Indianapolis, Ind., 1982).

prospered most from the Indiana canals was in Ohio. Toledo became—and remains today—a leading grain depot and flour-milling center.[61]

After 1850, it became clear that success in manufacturing for Lawrenceburg and Evansville would arrive by rail, not by canal. Lawrenceburg was linked to Indianapolis by rail in 1853 and to Cincinnati and points east in 1854. A Boston company purchased Lawrenceburg Roller Mills in 1897 and began exporting most of its flour via East Coast ports. In 1854, Evansville was connected by rail with Terre Haute via the new Evansville & Crawfordsville line, which largely paralleled the defunct southern section of the Wabash & Erie Canal.[62] In the end, Lawrenceburg was too close to Cincinnati to become more than a minor adjunct to that midwestern manufacturing metropolis. Evansville, however, prospered, and though it never blossomed into the "metropolis of the new world," as its boosters prophesied, Evansville did develop into a diversified manufacturing city as well as a major flour-milling center by the turn of the century.[63]

The origin of flour milling in frontier Evansville was typical: a couple of horse-powered mills at first, followed by a small water-powered gristmill on Pigeon Creek north of town. In the early 1850s, Levi Igleheart Jr., who was later to become Evansville's most prominent miller, set up a mill in the city that used the waterpower of the Wabash & Erie Canal.[64] That scheme soon failed, when the canal itself failed and was allowed to dry up. For Evansville, the lack of good waterpower was not a problem; by mid-century, coal and steam power were ascendant. Indeed, from nearly the beginning, Evansville entrepreneurs had suspected that Vanderburgh County possessed large coal deposits. In the 1850s, the Evansville city council eagerly granted a prospector the right to tunnel for coal beneath city streets. Moreover, much larger Indiana coal fields lay just to the north, along the route of the Evansville & Crawfordsville Railroad. Evansville

---

[61] John G. Clark, *The Grain Trade in the Old Northwest* (Urbana, Ill., 1966), 69–74; Steen, *Flour Milling in America*, 14, 70, 366–67.

[62] Simons and Parker, *Railroads of Indiana*, 12–13. On the Lawrenceburg mill, see Steen, *Flour Milling in America*, 203.

[63] Coen & Land, *Industries of Evansville: Trade, Commerce and Manufactures, Historical and Descriptive Review* (Evansville, Ind., 1880), 20; Charles E. Robert, *Evansville: Her Commerce and Manufactures. A Descriptive Work of the Business Metropolis of Indiana* (Evansville, Ind., 1874), 31–35.

[64] Frank M. Gilbert, *History of the City of Evansville and Vanderburg (sic) County, Indiana*, 2 vols. (Chicago, Ill., 1910), 1:28, 50; Joseph Peter Elliott, *A History of Evansville and Vanderburgh County, Indiana: A Complete and Concise Account from the Earliest Times to the Present, Embracing Reminisces of the Pioneers and Biographical Sketches of the Men who Have Been Leaders in Commercial and Other Enterprises* (Evansville, Ind., 1897), 94, 460–61.

promoters believed, correctly, that their city's future in manufacturing would be based on cheap coal and steam power. As early as 1860, some fifty factories and shops in Evansville employed at least seventy-five steam engines.[65]

By the late nineteenth century, Evansville's manufacturing base was diverse, with foundries and machine shops, carriage and wagon makers, manufacturers of farm implements, stoves and iron goods, steam engines, furniture, cotton textiles, and so on.[66] With its excellent river transportation and its direct rail connections to the wheat lands of the Wabash valley, Evansville had also become a major grain depot and flour-milling center by the 1870s. "The dense volumes of smoke that blacken the sky and almost shut out the stars; the tall chimneys that rear their giant forms in every quarter, and tower above this busy city of so many thousand busy souls…. These indicate the locality of our mammoth Flouring Mills," Charles Robert, a local newspaperman, proclaimed. Evansville had five flour mills in 1874, plus several independent grain dealers and elevator companies; the four largest of these each produced about 50,000 barrels of flour per year.[67]

Over the next forty years, Evansville became what was known in flour-industry jargon as a "milling center"—that is, a city with at least two or more mills of large capacity. Of thirty milling centers in the country in 1915, Evansville ranked near the middle with a daily capacity of 5,150 barrels of flour. This was far less than leaders such as Minneapolis, Kansas City, or Buffalo, but more than most milling cities in the country, including Indianapolis, the only other milling center in Indiana. Evansville was also a major player in the grain trade, mainly in Indiana winter wheat. All Indiana counties raised wheat, but some raised much more than others. In 1910, the three top wheat counties were all in the lower Wabash valley—Posey, Gibson, and Knox—right in Evansville's backyard. Not surprisingly, Evansville led the state in grain elevator capacity in 1915.[68]

---

[65] Lipin, *Producers, Proletarians, and Politicians*, 84–85; Robert, *Evansville*, 27–28, 32–34. See also "Mines and Mining: Coal Product of Illinois, Ohio, Indiana, and Michigan," 13.

[66] "Evansville," in H. C. Chandler & Co., *H. C. Chandler & Co.'s Business Directory and Shipper's Guide*, 102–26; Lipin, *Producers, Proletarians, and Politicians*, 91.

[67] Robert, *Evansville*, 238–41, quotation p. 238.

[68] U.S. Bureau of the Census, *Thirteenth Census of the United States Taken in the Year 1910*, vol. 6: *Agriculture* (Washington, D.C., 1913), 492–500; *The Miller's Almanack and Year-Book of the Trade: A Compilation of Statistical and General Information of the Milling Industry and the Grain Trade, 1915–1916* (Minneapolis, Minn., 1915), 202.

Between the 1870s and World War I, the milling revolution shook up the flour business in Evansville, just as it did everywhere. Change was incessant, with mills opening, closing, merging, moving, and sometimes burning down. But one constant was the central role played by the Igleheart family. From the 1850s on, Levi Igleheart and his brothers Asa and William—and later Levi's sons and grandsons—were the leading millers in town. Igleheart Brothers, as the firm was called, introduced the middlings purifier and New Process milling for winter wheat to Evansville and perhaps to Indiana. They were also early adopters of roller mills. By the 1890s, their mill boasted twenty stands of double rolls, along with a full array of New Process machinery.[69]

Like the Blish family of Seymour, the Iglehearts mastered the arts and technologies of modern marketing. The company sold their flours to wholesale grocers throughout the eastern half of the United States but concentrated their marketing on the Southeast. They were an early proponent of paper packaging for retail sales, and they aggressively pursued the export trade, advertising "quick deliveries via the Gulf or Atlantic ports."[70] Unsurprisingly, branding was key. According to the *Weekly Northwestern Miller* magazine in 1889, Igleheart Brothers had more distinct brands of flour than any other milling company in Indiana. One of those brands was destined to become and to remain a household favorite: Swans Down cake flour. By the late 1890s, the company advertised their flours directly to retail customers through popular magazines. As a regular advertiser in *Ladies' Home Journal*, they published recipes and baking advice, along with trademarked logos and color photography. They even offered homemakers little homilies on the virtues of soft winter wheat flour for cakes and pastries: "You don't want your cake to be like bread. Then why use bread flour? Flour rich in gluten is tough and rubbery, but makes fine bread. You want your cake to be delicate in texture, light and fluffy, and that takes a flour specially prepared for making fine cake. The standard flour for delicious cake is SWANS DOWN."[71]

---

[69] Elliott, *History of Evansville and Vanderburgh County, Indiana*, 458–63; John E. Iglehart (sic), ed., *An Account of Vanderburgh County, From Its Organization* (Dayton, Ohio, 1923), 465–66; Sanborn-Perris Map Co., *Insurance Maps of Evansville, Indiana*, 50 ft to an inch (New York, N.Y., 1895), sheet 16.

[70] Elliott, *History of Evansville*, 461; Iglehart (sic), ed., *Account of Vanderburgh County, From Its Organization*, 466–67; Igleheart ad, *Weekly Northwestern Miller*, August 4, 1920, p. 573.

[71] "American Flour Brand Directory," in *Weekly Northwestern Miller*, February 8, 1889, p. 181; *Ladies' Home Journal*, June 1898, p. 25; February 1902, p. 37; October 1921, p. 132.

Igleheart Brothers, advertisement, *Ladies' Home Journal*, October 1921. Evansville was an important flour-milling center in the early twentieth century, and the leading milling company was Igleheart Brothers. Igleheart was a major producer of cake and pastry flour milled from Indiana soft winter wheat.

Though the Iglehearts were the most successful and most progressive millers in Evansville, a newer company, Akin-Erskine, developed a mill with a larger capacity. In 1912, when Igleheart Brothers' capacity was 1,000 barrels a day, Akin-Erskine was rated at 2,500, making it the largest mill in Indiana. But Akin-Erskine was actually a spinoff from the Igleheart family. The founder, Wilbur Erskine, was a nephew of the Iglehearts and had worked for his uncles for many years before founding his own mill in 1897, with the backing of his wife's family, the Akins. The company prospered for quite a while, concentrating exclusively on soft winter wheat flour. But Erskine may have overbuilt. In 1921, he closed the mill and filed for bankruptcy. The Akin-Erskine properties were sold in 1922, with some of the equipment acquired by Igleheart Brothers. The mill re-opened, but soon burned to the ground in 1924.[72]

The winter wheat region of the lower Wabash valley was home to other substantial flour mills in the early twentieth century. In 1912, Mount Vernon, located just twenty miles downstream from Evansville on the Ohio River, had two mills each with a capacity of around 500 barrels of flour a day: Fuhrer-Ford Milling and Home Mill & Grain Company. Vincennes had J. & S. Emison, and Terre Haute had Sparks Milling, an offshoot of a large milling company based in Alton, Illinois. Northern Indiana had its share of successful mills as well, including Loughry Brothers in Monticello, Mayflower in Fort Wayne, and Goshen Milling Company in Goshen.[73] Goshen Milling was unique in Indiana as the only large flour mill still water-powered after the turn of the twentieth century. The Hawks Water Power Company supplied power to the Hawks-owned Goshen Milling Company and to the Hawks Electric Company. As a backup, Hawks maintained a large steam-power plant and owned the local coal company to boot.[74]

---

[72] Akin-Erskine ad, in *Weekly Northwestern Miller*, March 22, 1911, p. 703; The Northwestern Miller, *Advertisers' Hand Book No. 37*, 34; Iglehart (sic), ed., *Account of Vanderburgh County, From Its Organization,* 521–22; Steen, *Flour Milling in American*, 196–98.

[73] The Northwestern Miller, *Advertisers' Hand Book No. 37*, 32–41; *The Miller's Almanack and Year-Book of the Trade: A Compilation of Statistical and General Information of the Milling Industry and the Grain Trade, 1915–1916*, 200; James P. McKinney, *The Industrial Advantages of Fort Wayne, Ind., Together With an Account of Its Material Development and Progress and a Series of Descriptive Sketches of Representative Business Enterprises* (Fort Wayne, Ind., 1895), 18.

[74] W. M. Tucker, "Water Power of Indiana," in Edward Barrett, Indiana Department of Geology and Natural Resources, *Thirty-Sixth Annual Report, 1911* (Indianapolis, Ind., 1912), 480–81; Abraham E. Weaver, ed., *A Standard History of Elkhart County, Indiana: An Authentic Narrative of the Past, With Particular Attention to the Modern Era in the Commercial, Industrial, Educational, Civic and Social Development*, 2 vols. (Chicago, Ill., 1916), 2:435.

The two largest flour mills north of Lawrenceburg, Evansville, and Seymour in the early twentieth century were located in central Indiana. The more important of these was Acme-Evans in Indianapolis, but Noblesville Milling Company was perhaps the more interesting. Noblesville lies a mere twenty-five miles north of Indianapolis, and the histories and economies of those two cities have always been intertwined. Central Indiana's earliest and most famous American settler, the Indian trader William Conner, was involved in the founding of both places: Indianapolis in 1821 and Noblesville in 1823. The first water-powered grist mill in what would become Hamilton County was built in 1821 on Stony Creek, just a mile south of the soon-to-be town of Noblesville.[75] Some efforts were made in the town's early years to harness the larger waterpower of the White River, but Noblesville millers soon turned to steam. By the 1860s, two steam-powered flour mills were operating in town. One of these, launched by J. L. Evans in 1856, evolved into the Noblesville Milling Company, which would become one of the largest and most modern flour mills in the state by the end of the century.[76]

As in southern Indiana, railroads were key players in the agricultural economy of Hamilton County and in the industrialization of Noblesville. In this case, the pioneer railroad was the Peru & Indianapolis line, which was built to connect Indianapolis with the Wabash and Erie Canal at Peru and was completed to Noblesville in 1851. The Peru & Indianapolis Railroad later became part of the New York, Chicago, & St. Louis Railroad (the Nickel Plate). By the 1880s, the Indianapolis-to-Chicago line of the Monon also crossed through Hamilton County, via Carmel, as did the east-west Anderson, Lebanon, & St. Louis Railroad (later the Central Indiana), via Noblesville.[77] These rail lines drew Noblesville more closely into the

---

[75] Carmony, *Indiana, 1816–1850*, 107–109; John F. Haines, *History of Hamilton County, Indiana: Her People, Industries and Institutions* (Indianapolis, Ind., 1915), 194; Thomas B. Helm, *History of Hamilton County, Indiana, With Illustrations and Biographical Sketches of Some of Its Prominent Men and Pioneers to Which are Appended Maps of its Several Townships* (Chicago, Ill., 1880), 33; Augustus Finch Shirts, *A History of the Formation, Settlement and Development of Hamilton County, Indiana: From the Year 1818 to the Close of the Civil War* (n.p., 1901), 21. On William Conner, see John Lauritz Larson, "Agent of Empire: William Conner on the Indiana Frontier, 1800–1855," *Indiana Magazine of History* 80 (December 1984), 301–28.

[76] Helm, *History of Hamilton County*, 91; Haines, *History of Hamilton County, Indiana*, 200, 204.

[77] Simons and Parker, *Railroads of Indiana*, 11, 120–21, 129–30, 170–72.

economic orbit of Indianapolis, while also expanding the options of local grain farmers and manufacturers, including the millers of wheat flour.[78]

The moderately successful Noblesville Milling Company took a novel turn in 1890: the property and business were acquired by Daniel W. Marmon of Nordyke & Marmon, the milling machinery giant of Indianapolis. Marmon had joined the Nordyke company as a junior partner while the firm was still based in Richmond. Marmon and Addison Nordyke renamed the company Nordyke & Marmon in 1876 and moved the factory to Indianapolis, where they would have more room for expansion and better rail connections. Throughout the 1880s, they grew Nordyke & Marmon into one of the largest manufacturing enterprises in the Midwest and a leading supplier of grain-milling equipment. Daniel Marmon was a mechanical and marketing impresario. In Richmond, he had set up a small experimental "model mill" for testing and demonstrating new machines for prospective buyers.[79] In Indianapolis, as Nordyke & Marmon expanded into designing, constructing, and furnishing complete "model mills" around the country, Marmon hoped to develop and operate a large-scale, high-tech, fully commercial flour mill; in Noblesville, his hopes were realized.[80]

By the early twentieth century, the Nordyke & Marmon operations in Indianapolis and Noblesville had become go-to destinations for inquisitive flour mill executives and equipment buyers from around the country and the world. In Indianapolis, they could observe their industry's latest machinery under construction; in Noblesville, they could tour a large commercial flour mill running on Nordyke & Marmon machines. The Noblesville Milling Company had a capacity of 1,200 barrels of flour per day by 1912 and was a major dealer in winter wheat from central and northern Indiana and central Illinois. By 1913, the company milled about 1.25 million bushels of wheat per year, and in 1915 the capacity of their grain elevators (750,000 bushels) was the largest in the state. Like Blish in Seymour, the Noblesville Milling Company exported a large share of its

---

[78] Shirts, *History of the Formation, Settlement and Development of Hamilton County, Indiana*, 370; Haines, *History of Hamilton County, Indiana*, 267–71.

[79] Nordyke & Marmon Co., *Nordyke & Marmon Company: An Institution*, 14–15, 20–21; Nordyke & Marmon Co., *Catalogue of Portable Grinding Mills Made by Nordyke & Marmon Company*, 3–5; "Daniel W. Marmon," in Jacob Piatt Dunn, *Greater Indianapolis: The History, the Industries, the Institutions, and the People of a City of Homes*, 2 vols. (Chicago, Ill., 1910), 2:1186–87.

[80] Nordyke & Marmon ads, *American Miller*, May 1, 1889, pp. 363–64; Haines, *History of Hamilton County, Indiana*, 204; *Indianapolis Star*, February 1, 1914.

production, mainly to the British Isles.[81] Like Igleheart Brothers in Evansville, the company was a savvy marketer of its trademarked brands, especially Kismet, its pastry-and-biscuit-baking flour, and Diadem, its all-purpose family flour. A 1916 advertising campaign offered a free cookbook titled *Better Baking with Indiana Flour* and declared that "Diadem Flour is made in Indiana in one of the finest mills in the world, from the purest and best soft winter wheat."[82]

Curiously, while both the Noblesville Milling and its parent, Nordyke & Marmon, were doing quite well in the flour-milling business in the early 1900s, the sons and heirs of Daniel Marmon, Walter and Howard Marmon, had other ideas. Between 1903 and 1905, Howard turned his new mechanical obsession—the automobile—into a viable business. By the start of World War I, the young Marmons had transformed their father's firm into a leading manufacturer of luxury automobiles, along with their signature milling machinery. During the war, the company concentrated on the production of military aircraft engines. After the war, with popular demand for motor cars booming, the Marmons gradually shifted their entire production into automobile manufacture. They sold the milling machinery business in 1926, along with the Nordyke name, to Allis-Chalmers of Milwaukee.[83] But the Marmon family held on to Noblesville Milling through the economic ups and downs of the 1920s and '30s. In 1941, with a new war in Europe under way and wartime demand for flour exports on the rise, the Marmons sold the Noblesville company and its properties to the leader of Indiana flour milling: Acme-Evans of Indianapolis.[84]

The rise of Acme-Evans to first place in Indiana's flour milling industry reflects the evolution of Indianapolis from a mere dot on a map in 1820 into

---

[81] Haines, *History of Hamilton County*, 204, 552; *The Miller's Almanack and Year-Book of the Trade: A Compilation of Statistical and General Information of the Milling Industry and the Grain Trade, 1915–1916*, 202; The Northwestern Miller, *Advertisers' Hand Book No. 37*, 38.

[82] Diadem ads, *Indianapolis News*, February 19, March 2, 1916; Kismet ads, *Weekly Northwestern Miller*, January 4, 1911, p. 48; April 18, 1917, p. 162; August 4, 1920, p. 573.

[83] Nordyke & Marmon Co., *Nordyke & Marmon Company: An Institution*, chaps. 8 and 12; "Nordyke & Marmon," in *Encyclopedia of Indianapolis*, ed. David J. Bodenhamer and Robert G. Barrows (Bloomington, Ind., 1994), 1056; George Philip Hanley and Stacey Pankiw Hanley, *The Marmon Heritage: More than 125 Years of American Production of World Renowned Products: Marmon, Marmon-Herrington, Marmon-Herrington All-Wheel-Drive Ford* (Rochester, Mich., 1990). This book is mainly about the automobile age of Marmon.

[84] Registration Form for Noblesville Milling Company Mill, written and prepared by Carol Ann Schweikert (2001), National Register of Historic Places, https://npgallery.nps.gov/NRHP/GetAsset/6aee849a-a169–4c58–9f5c-580e69eba513; Steen, *Flour Milling in America*, 202.

a major industrial city a century later. When the site of Indianapolis was chosen by the General Assembly to be the new seat of state government, its signal virtue was its location near the geographic center of Indiana, which at that time was the least settled and least accessible part of the state. While centrality was paramount, the site supposedly had other practical attributes. The White River was believed to be navigable, although that turned out not to be true. The east side of the river was thought to be high and dry, but much of it was not. And Fall Creek was judged to have sufficient waterpower for mills, which came closest to the truth.[85]

The settlement of Indianapolis commenced in 1820. One of the first settlers to arrive was Isaac Wilson, who set up a primitive grist mill in 1821 on Fall Creek near its confluence with the White River. At that time, the main channel of Fall Creek flowed into the river just north of the future site of the National Road/Washington Street bridge. The first commercial flour mill in Indianapolis, erected by John Carlisle in 1840, was also water-powered, but not by Fall Creek. After 1839, a second source of waterpower in Indianapolis was developed: the Central Canal. The Central Canal was never fully completed over its projected route, but it was finished from Broad Ripple on the White River north of Indianapolis, through the heart of the city, to Pleasant Run Creek south of town. Though practically useless for transportation, the canal provided water and waterpower to downtown businesses, including Carlisle's flour mill, located near the corner of Washington and Blackford Streets.[86]

Those two early mills were the seeds of Acme-Evans Milling. Isaac Wilson's mill on Fall Creek evolved into a large enterprise by the 1870s known as the Hoosier State Mill. The Hoosier State Mill was acquired by George T. Evans & Son in 1893; its capacity by 1898 was 700 barrels of flour per day. Meanwhile, two blocks to the east, the Carlisle mill evolved

---

[85] Robert G. Barrows and Leigh Darbee, "The Urban Frontier in Pioneer Indiana," *Indiana Magazine of History* 105 (September 2009), 270–71; Ida Stearns Stickney, *Pioneer Indianapolis* (Indianapolis, Ind., 1907), 23–24.

[86] B. R. Sulgrove, *History of Indianapolis and Marion County, Indiana*, part 2 (Philadelphia, Pa., 1884), 440–41, 448; James H. Madison, "Economy," in *Encyclopedia of Indianapolis*, ed. Bodenhamer and Barrows, 62. On the economic impact of the Central Canal in Indianapolis, see J. Darrell Bakken, *"Now That Time Has Had Its Say": A History of the Indianapolis Central Canal* (Bloomington, Ind., 2003); and Rita W. Harlan, "The Central in the City: The Impact of the Central Canal in Indianapolis, 1836–1900," (M.A. thesis, Indiana University–Purdue University Indianapolis, 1996).

into the Acme Milling Company, which operated two adjacent mills onsite. The larger of the two, Mill A, could produce 1,300 barrels daily by 1898.[87]

Although its modest waterpower resources were important, the city's large-scale industrialization in the second half of the nineteenth century was powered by water in a different form: steam—steam in stationary engines and in locomotives. The first railroad arrived in Indianapolis in 1847, and by the 1860s half a dozen trunk lines served the city. A new laudatory history appeared in 1870 with the telling title: *Indianapolis: A Historical and Statistical Sketch of the Railroad City*. In 1870, Indianapolis industries, all dependent on railroads, ranged widely: iron foundries, rolling mills, and machine shops; meat packing; carriage and wagon building; furniture making; grain shipping and milling. The book's author, W. R. Holloway, summarized the city's prospects in a section on flour milling: "Favorably situated in a highly productive agricultural region, with railways radiating in every direction, facilitating the importation of grain directly and at the lowest cost, and affording ready outlets to the markets for the products of its mills, and having abundant water power, the manufacture of flour has grown and prospered here in obedience to the plainest natural laws."[88] But it was neither waterpower nor natural law that drove the flour-milling revolution in Indianapolis: it was iron and coal.

In 1909, the Acme Milling Company and George T. Evans & Son's Hoosier Mill merged to form Acme-Evans Milling Company, an instant major player in flour milling in the Midwest. Operating three mills on Washington Street (the original National Road, now the White River Trail), the new company could produce 3,000 barrels of wheat flour per day, along with a variety of corn products and animal feeds. Each parent company brought several popular flour brands into the merger, including Acme's Columbia and White Rose and Evans's Osofine and E-Z Bake. E-Z Bake flour in particular was destined to remain an iconic Acme-Evans brand throughout the twentieth century. The growth of the business in

---

[87] "Acme-Evans Company," in *Encyclopedia of Indianapolis*, eds. Bodenhamer and Barrows, 230; George W. Geib, *Indianapolis: Hoosiers' Circle City* (Tulsa, Okla., 1981), 180; Sanborn-Perris Map Co., *Insurance Maps of Indianapolis, Indiana*, 50 ft to an inch, vol. 1 (New York, N.Y., 1898), sheets 1 and 2. Indianapolis had other grain mills in the 1890s. The only other substantial flour mill was Blanton Milling Co. on Maryland at Missouri, 500 barrels a day.

[88] W. R. Holloway, *Indianapolis: A Historical and Statistical Sketch of the Railroad City, a Chronicle of its Social, Municipal, Commercial and Manufacturing Progress, with Full Statistical Tables* (Indianapolis, Ind., 1870), 352; Barrows and Darbee, "The Urban Frontier in Pioneer Indiana," 280–81; Madison, "Economy," in *Encyclopedia of Indianapolis*, 63.

the decades after the merger—in milling and in the domestic and foreign trade in flour and grain—was managed by Edgar H. Evans, the "Son" in George T. Evans & Son. Evans remained a leading figure in the business community of Indianapolis and far beyond for fifty years.[89]

World War I sparked a boom in wheat and flour production for American farmers, grain dealers, millers, and exporters, including Acme-Evans. The war years also brought momentary disaster for the company. In 1917, the company's largest mill, Mill A, was completely destroyed by fire. Under the pressure of wartime demand for foodstuffs, Acme-Evans rebuilt quickly and in dramatic fashion. Within a year the company had in operation, right next to the ruins of Mill A, a completely new 2,000-barrel-a-day mill that was the most modern, high-tech flour mill in the country at that time—all concrete, steel, and glass; fully automated; powered entirely by electricity. The designer, principal engineer, and supplier of nearly all of the equipment was Nordyke & Marmon.[90] In 1919, Acme-Evans published a slick promotional booklet extolling the manifold virtues of its new mill and praising Indianapolis as a continental crossroads of commerce, linked by rail and lake steamer to the wheat lands of the central and northern plains and to the great Atlantic seaboard cities and major Gulf ports. To drive this point home, the booklet reminded readers that Indianapolis itself lay at the "center of the winter wheat belt."[91] For both Acme-Evans and Nordyke & Marmon, this new mill was a triumph, a monument to the centrality of Indianapolis and Indiana to the American revolution in flour-milling.

Epilogue: A Permanent Revolution

In 1922, the *American Miller* magazine, the oldest of the industry's major trade journals, celebrated its golden anniversary by publishing a fifty-year retrospective of the flour-milling revolution. The *American Miller* had appeared on the scene in 1873 at the dawn of the New Process era, and had for five decades reported the news of dramatic transformations in

---

[89] Acme ad, *Flour & Feed* magazine, January 1906, p. 12; Evans ad, *Indianapolis News*, March 27, 1902; Acme-Evans ads, *Weekly Northwestern Miller*, January 18, 1911, p. 166; January 25, 1911, p. 196; Acme-Evans Co., *98 Years of Milling* (Indianapolis, Ind., 1919), 1–2; Geib, *Indianapolis*, 180; "Edgar H. Evans," in *Indiana Today: A Work for Newspaper and Library Reference* (Indianapolis, Ind., 1942), 191, 401.

[90] "New Mill of Acme-Evans Co., Indianapolis, Ind.," *Operative Miller*, May 1918, pp. 168–69; James F. Hobart, "Indianapolis Mill Nears Completion," *American Miller*, November 1, 1918, pp. 931–32; Nordyke & Marmon ad, *Operative Miller*, July1918, unnumbered page after cover.

[91] Acme-Evans Co., *98 Years of Flour Milling*, 4–6, 16.

Acme-Evans Co., 1920. Nordyke & Marmon designed and equipped this large modern mill for Acme-Evans Co. in downtown Indianapolis in 1918. The building was razed in 1994. Courtesy, Indiana Historical Society, Indianapolis, Indiana.

power, transport, agriculture, process, machinery, and marketing. In 1922, the magazine summed up the era by stating what had long been obvious: "Changes of a radical nature have been made in almost every department of the milling industry in the last 50 years, and the modern mill of today would be almost incomprehensible to the practical man of that time."[92]

[92] *American Miller*, May 1, 1922, pp. 475–89, quotation p. 476.

So, was the milling revolution complete by 1922? If not, what might the future hold in store? In its anniversary issue, the *American Miller* posed that question to twenty managers of flour mills from across the United States, including four from Indiana. These modern millers were conservative in their predictions. They did not foresee continued revolutionary change on the horizon, but they all had ideas about incremental improvements in process and technology. For example, they discussed their hopes for new techniques and machinery to clean and temper (moisten) wheat. They also imagined mills with total climate control, perfect temperature and humidity, winter and summer. They foresaw pneumatic rather than mechanical movement of wheat and flour through the milling process. They predicted the mill would run completely on electrical power. Finally, they believed that serious research, especially in flour chemistry, would soon guide every aspect of their daily work.[93] These twenty millers turned out to be prescient seers, as all of these predictions, and more, were realized in the next fifty years of the milling revolution.[94]

Not surprisingly, perhaps, these aging millers, who had lived through an era of spectacular technological change in their industry, focused on technology in their musings about the future; they said almost nothing about business. Yet it was in the realm of business, broadly defined, that the next round of revolutionary changes would come—some of which were already afoot in 1922 and would accelerate throughout the twentieth century. Three of these changes involved the actual use of the millers' product: flour. Consumer food tastes were changing, and Americans' per capita consumption of wheat flour had fallen by 1922 and would continue to fall.[95] Consumers would also use vastly less flour directly at home. Commercial baked goods would replace "family flour" almost completely in the American diet. For millers, that meant flour would now be a producer good rather than a consumer good, with nearly all production sold to commercial baking companies, which often were large corporations.[96] The growth of flour chemistry would bring a change the 1922 millers did not foresee: the diversification of wheat milling into non-flour products, from wheat germ to

---

[93] Ibid., 484–86.

[94] Steen, *Flour Milling in America*, chaps. 7–8, 12; Storck and Teague, *Flour for Man's Bread*, chaps. 17–19.

[95] Steen, *Flour Milling in America*, 67; Storck and Teague, *Flour for Man's Bread*, 281, 312.

[96] Steen, *Flour Milling in America*, 75–76, 122–25, 163; Storck and Teague, *Flour for Man's Bread*, 274.

starch, adhesives, coatings, alcohol, and polymers.[97] The transformation of flour from a consumer good into a producer good also changed the nature of mergers and consolidations in the milling business. By 1922, the era of large mills, multi-mill companies, and mill company mergers was already well under way. Over the next few decades, consolidation would transform into conglomeration. Flour milling companies would become subsidiaries of general food corporations or other diversified conglomerates.[98]

Other external forces also shaped the milling industry in the twentieth century. Intensive government involvement in agriculture and milling during World War I turned out not to be a temporary wartime aberration. Rather, ubiquitous regulation—from flour purity to commodity markets to price supports—became the norm during the difficult decades of drought, depression, and war, permanently reshaping the milling industry.[99] Meanwhile, foreign competition became more widespread and complex, with new wheat lands—and their attendant milling facilities—emerging in Canada, Argentina, and Australia. These governmental and global challenges could best be weathered by large, diversified companies, which required a new kind of management. Indeed, the complete transformation of management may have been the most important legacy of the second phase of the American milling revolution after 1920.[100]

This second phase played out across the country and across Indiana. The experience of the Igleheart Brothers in Evansville traces one storyline. In 1926, Igleheart and another Evansville mill, Phoenix, were acquired by the Postum Cereal Company of Battle Creek, Michigan, which became the General Foods Corporation in 1929. General Foods was the prototype of the modern conglomerate in the food industry, gradually absorbing many of the most successful manufacturers and brands of the twentieth century, including Jell-O, Baker's Chocolate, Maxwell House, Birds Eye, and many more. Igleheart Brothers became the flour-milling division of General Foods, operating mills in Tennessee and Oregon as well as Indiana.[101] The Igleheart

---

[97] Storck and Teague, *Flour for Man's Bread*, 315–18; Texas Wheat Producers Board, *Wheat Uses: Alternative & Industrial Uses* (Amarillo, Tx., n.d.), http://www.aghost.net/images/E0161001/alternative_uses.pdf.

[98] Steen, *Flour Milling in America*, 76, 105; Storck and Teague, *Flour for Man's Bread*, 281, 307, 312.

[99] Steen, *Flour Milling in America*, 70, 78–90.

[100] Storck and Teague, *Flour for Man's Bread*, chaps. 17–19.

[101] Kuhlmann, *Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis*, 189; Steen, *Flour Milling in America*, 197–98. See also James L.

family continued in the business as well. Austin S. Igleheart, grandson of founder Levi, moved on from Evansville into the new parent company, rising to president of General Foods in 1943 and chairman of the board in 1954, two years before the Igleheart Brothers gala centennial celebration. In 1985, General Foods was absorbed by an even larger leviathan, Philip Morris, in yet another era of high-stakes mergers and conglomeration. The Igleheart mill in Evansville eventually closed in 1993.[102] Today the Iglehearts' famous Swans Down brand is owned and distributed by Reily Foods Company of New Orleans.[103]

The most successful player in the second phase of the flour milling revolution in Indiana was Acme-Evans. After 1919, with its new mill up and running in Indianapolis, the company became more national in scope, reaching out to the hard spring wheat regions of the northern plains as well as to its traditional winter wheat suppliers of the Midwest. In the decades after World War I, Acme-Evans launched its own project of acquisition and consolidation, acquiring several large Indiana grain dealers. The company purchased Blanton Milling of Indianapolis in 1924, Noblesville Milling Company in 1941, and Blish Milling Company in 1949 which further bolstered its position in the American grain trade.[104]

The Acme-Evans mill in downtown Indianapolis was renovated and modernized in 1979, making it once again one of the most high-tech flour mills in the country. One of these improvements included a completely sealed pneumatic system for automatically moving wheat and flour through the milling process, just as the millers of 1922 had predicted. The company's grain operations struggled in the 1980s (it was by then part of a merged company called General Grain), and the Acme-Evans Indianapolis mill was sold to one of the largest grain and food conglomerates of them all, Archer-Daniels-Midland Company (ADM). By then, the downtown location was no longer suited to manufacturing, so ADM moved their milling operation to Beech Grove at the southeastern fringe of the city, where the transportation infrastructure was excellent (railroads and interstate highways), and there

---

Ferguson, *General Foods Corporation: A Chronicle of Consumer Satisfaction* (New York, N.Y., 1985).

[102] Alfred E. Clark, "Austin Igleheart Dies; Ex-General Foods Chairman," *New York Times*, October 26, 1979; "Igleheart Bros.," Historic Evansville, http://www.historicevansville.com/site.php?id=igleheart2.

[103] "Swans Down Cake Flour: History," Reily Foods Company, https://swansdown.com/history/.

[104] Acme-Evans Co., *98 Years of Flour Milling*, 16; Steen, *Flour Milling in America*, 202.

was room for growth.[105] In 2014, ADM completed a major expansion of the Beech Grove Mill, which made it the third largest flour mill in the United States with a daily capacity of 28,000 hundred-weight (cwt). According to the old measurement system, this would be an equivalent to approximately 14,000 barrels per day.[106]

While the legacy of Acme-Evans lives on at ADM-Beech Grove, the company's splendid modernist mill building of 1919 was demolished in 1994.[107] Indeed, the second phase of the milling revolution after 1920 marked the demise of all six of Indiana's major mills of 1912: Acme-Evans, Lawrenceburg Roller Mills, Akin-Erskine, Igleheart Brothers, Noblesville Milling Company, and Blish Milling Company. The Acme-Evans properties in downtown Indianapolis are now the site of the National Collegiate Athletic Association headquarters and part of the green space of White River State Park. Lawrenceburg Roller Mills burned in 1941.[108] That site is now a vacant lot beside the Ohio River levee, near the Dearborn County Historical Society. In Evansville, the big Akin-Erskine mill burned in 1924 and was razed; a Vectren Energy Delivery Company facility now occupies the site. Igleheart Brothers finally closed in 1993; the mill is gone, but the enormous elevators still stand.[109] The site now has a grain facility operated by ADM-Growmark and a distribution center for Bootz Industries, an Evansville-based manufacturing company. The Noblesville Milling Company was acquired by Acme-Evans in 1941 and closed. The building was sold to the Doughnut Corporation of America in 1946. The mill building was beautifully renovated in the early 2000s; it is now a multi-use office space and event venue for conventions and weddings.[110] Blish Milling in Seymour was purchased by Acme-Evans in 1949 and closed in 1951. The mill was

---

[105] Geib, *Indianapolis*, 180; "Acme-Evans Company," in *Encyclopedia of Indianapolis*, 230.

[106] Eric Schroeder, "ADM Completes Beech Grove Mill Expansion," *Food Business News*, July 9, 2014, https://www.foodbusinessnews.net/articles/4522-adm-completes-beech-grove-mill-expansion. ADM-Beech Grove was the fourth largest flour mill in the country in 2019. See "Top 10 Largest U.S. Mills, by Capacity," in Sosland Publishing Company, *2019 North American Grain & Milling Annual* (Kansas City, Mo., 2019).

[107] "Acme-Evans Company," in *Encyclopedia of Indianapolis*, 230.

[108] Steen, *Flour Milling in America*, 203.

[109] "Akin-Erskine Milling Co.," Historic Evansville, http://www.historicevansville.com/site.php?id=akinerskine; "Igleheart Bros.," Historic Evansville.

[110] Steen, *Flour Milling in America*, 206; Registration Form for Noblesville Milling Company Mill, by Carol Ann Schweikert, National Register of Historic Places, T*imes* (Hamilton County, Indiana), November 26, 2010, September 3, 2015.

razed in the 1970s, eventually replaced by a strip mall.[111] Though the Blish Mill building is gone, the company's concrete grain elevators still stand near the intersection of the two railroad lines that first enticed John Blish to move his little mill from Rockford to the new town of Seymour in 1860.

Though completely changed in most ways, flour milling in Indiana in 2020 still carries traces of the industry of a hundred years ago. The giant ADM mill in Beech Grove is a direct descendent of Isaac Wilson's pioneer grist mill on Fall Creek in 1821. ADM also operates a flour mill in Mount Vernon, a city on the Ohio River that has been a grain depot and flour-milling town since the early nineteenth century. Star of the West, a milling company from Frankenmuth, Michigan, owns an 8,000 cwt. flour mill in the northern Indiana town of Ligonier. That mill occupies a site where wheat has been milled since at least the 1890s. Siemer Milling Company, a family-owned firm from Teutopolis, Illinois, opened a brand new 10,000 cwt. flour mill in 2015 in West Harrison, Indiana, near the Ohio state line, eighteen miles north of Lawrenceburg. These four mills—Beech Grove, Mount Vernon, Ligonier, and West Harrison—were the chief contributors to Indiana's ranking as one of the leading flour-milling states in the country in 2018.[112]

Might there be a third phase of the flour-milling revolution underway in 2020? Perhaps. Some commentators speculate that small-scale flour milling may be slowly re-emerging as part of a growing reaction against the standardization and corporatization of food in America. And, unexpectedly, many people took up home baking in 2020, as they stayed at home during the COVID-19 coronavirus pandemic. The legal scholar and small-business promoter Tim Wu has argued that flour milling could be following the path taken in recent decades by the beer-brewing industry, in which a handful of giant brewing corporations have been joined by thousands of small and mid-sized craft brewers in every corner of the country.[113] Clearly, the popularity of natural-food co-ops and farmers' markets has created a niche for tiny grain millers, such as Muddy Fork Bakery in Monroe County,

---

[111] Steen, *Flour Milling in America*, 206; Noblitt, *History of the Blish Milling Company, Seymour, Indiana*, 32–34.

[112] U.S. Department of Agriculture, National Agricultural Statistics Service, *Flour Milling Products: 2018 Summary* (Washington, D.C., May 2019), 4. Information on individual flour mills in Indiana in 2020 can be found at the websites of the companies mentioned in this paragraph.

[113] Tim Wu, "That Flour You Bought Could Be the Future of the U.S. Economy," *New York Times*, July 24, 2020.

Indiana, which sells specialty flour at Bloomingfoods Market in Bloomington as well as breads and pastries at local farmers' markets in Bloomington and Indianapolis. Perhaps there is also a future for mid-sized millers who, like their late nineteenth-century forebears, are building genuinely commercial enterprises by employing high-tech milling equipment along with precise specialization, marketing, and branding. One such mid-sized company is Prairie Mills of Rochester, Indiana, which markets several brands of flour for retail sale as well as "short-run unique proprietary blends and mixes" for commercial bakeries. The company promotes its expertise in food science and its agility in modern business management, while also paying homage to the long history of flour milling in Indiana. Indeed, Prairie Mills is now the legacy producer of E-Z Bake flour, one of Indiana milling's most famous brands.[114]

[114] "Taste and Tradition," Prairie Mills, Rochester, Indiana, https://www.prairiemills.com/taste_tradition.php.