In the 1900 federal population census for Milwaukee’s twelfth ward, enumerators listed Julia Lecus as a “carrier” in a local glassworks. The thirty eight year old woman was born in Michigan to parents with Irish ethnicity, but moved to the city’s Bay View neighborhood where she resided with her 12 - person family. Her husband, Charles Lecus, was listed as a German immigrant and worked as a rag dealer. Their seven children allegedly attended school.¹ This biography was a very common story; however, her position as a glasshouse carrier makes her citation unique amongst the many other women that labored in factories. Only twenty years earlier her job was performed by children, and her contemporary coworkers were primarily teenage boys. Why was Julia Lecus hired for this position, and what can this illustrate about the transformation of unskilled positions in the glass bottle industry?

Lecus was hired during a time of change in glass manufacturing. Before 1900, over a hundred children and young teenagers worked as helpers in Milwaukee’s glasshouse.² However, these individuals were increasingly removed from the plant and were replaced by unskilled

¹ Census statistics were taken from the 1900 and 1910 manuscript version of the Federal Population Census for Milwaukee, WI wards 5, 8, 11, 12, and 14. Correct spelling and clarification on job titles were conducted using Ancestry.com and Wright’s City Directory of Milwaukee.
women and immigrants. By 1910 few people under the age of 16 worked here, but the increase of adult Eastern Europeans in their positions was apparent. The Wisconsin Bureau of Labor and Industry, influenced by reform organizations concerned with child labor, tried to eliminate children from employment as glassworkers. However, their efforts were futile as employers found ways to continue their hiring practices. Rather, the addition of machines to the workspace ended positions filled by skilled glassblowers, who subsequently tired to take the positions formerly held by boys. Before mechanization, a defined hierarchy between skilled adults and unskilled children was apparent, but eventually a hierarchy based on ethnic stereotypes replaced this condition.

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In March 1880, Dr. Enoch Chase announced the beginning of the glass bottle manufacturing in Milwaukee. Work had already begun on erecting a glasshouse on his farm along the banks of the Kinnickinnic River, at the intersection of Lincoln and Clinton Avenues. His intent was to profit from the numerous breweries that used bottles in large quantities. During the summer, experiments held on the site to produce the ideal glass container. Chase soon hired Joseph Slimm, the former Superintendent of the Lockport Glass Company in New York, to work in the same role here. By April 8, construction on a 40ft x 50ft building had been completed, and a modern addition to the glassworks was already in production.

The original factory, Chase Valley Glass Company No. 1, was fully owned by Dr. Enoch Chase. But, the second and third furnaces were incorporated under the title Chase Valley Glass Company No. 2. Chase was president of the newly incorporated factory, while Guido Pfister, owner of several tanneries in Milwaukee, was vice president. Charles J. Meyer served as

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secretary and treasurer. Initially the new factory was a minor operation with a workforce of sixty persons. The *Evening Chronicle* described its blueprint:

It is 90 feet square, of brick, 45 feet to the roof, and contains one furnace in which 8 pots of glass material are molten at once; 16 ovens for annealing glass and one pot-oven for heating the pots before going into the furnace. The cost of the factory was $25,000, just as it stands.

Above the furnace doors a sign memorialized the factory owners. It read, “Long life to Dr. E. Chase and C.J. Meyers.” A glassworker added a comic addition to the tribute. He etched, “…and to poor old Slim.” This sign offered employees a constant reminder of their bosses, who presided over factory production and financially benefited from their labors.

The workforce was brought from outside Milwaukee since the factory’s beginnings. In 1880 Superintendent Slimm was sent east to recruit skilled glassworkers to migrate to Milwaukee for employment. At the time, Wisconsin had few residents with glassblowing experience. Briefly, from 1876-1877, Omro operated a small glasshouse, but there is no evidence of Chase recruiting its former employees. The glass industry was long established in the east; in 1879 Massachusetts, New Jersey, New York, Ohio, and Pennsylvania each had numerous establishments. Many of these businesses dated to the colonial period, instituting a tradition of skilled glassworkers throughout these regions. It was an obvious location to find potential employees who yearned for new opportunities in the trade. In 1880 the *Milwaukee Daily Sentinel*, (24 July 1880).
Daily Sentinel cited Slimm’s efforts, and heralded the arrival of “blowers and managers - from the East.”

Skilled employees were also recruited from the European glass industry.

The 8’ o’clock Chicago passenger train... brought eleven immigrant families from Pommerania, Prussia, numbering thirty-six persons, who will permanently settle in Milwaukee. The men are glass-blowers and will be employed in the Chase Glass Works.

Henceforth, east coast migrants and German immigrants filled the skilled positions in Milwaukee’s glass bottle industry. In 1884 the factory began making window glass, and these employees were also recruited overseas. Glassblowers from Belgium, Germany, France and England were brought to the city for skilled work. This preference for Western Europeans as skilled employees would continue until the plant was deskilled by the introduction of machinery. But, the unskilled workforce was first children, most of which were also of Yankee and German ancestry.

Managers had already hired children to collect glass-making materials before the plant started. Chase advertised in the Milwaukee Daily Sentinel for broken glass donations. These recycled pieces could be heated and melted into molten glass for reshaping into a bottle. For this assignment, the factory playfully hired children to dig through the city’s alleys and garbage bins for the fragments. In exchange for their efforts they were paid with “fanciful articles,” whimsies that were often made by glassblowers with excess molten glass. These toys might have included Jacob’s ladders, canes, soup ladles, miniature hats, or chains of green and amber

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13 Milwaukee Daily Sentinel, (8 Nov. 1881).
Children were initially employed in such a lighthearted manner, but they would soon serve a vital function of the manufacturing line when the factory opened on September 1.

The glass bottle industry was a journeymen’s trade of a lifelong career ladder from helper to apprentice to skilled glassblower. Employers treated this tradition as a loophole to hire cheap labor. The Wisconsin Bureau of Industry and Labor stated that an apprenticeship “too frequently means only a minor, who, although doing precisely the same grade of labor as adults, receives only child wages.” Milwaukee’s glass industry used the journeymen system to hire young employees. Four apprentices were reported at Chase in 1884. Early apprenticeships often followed the journeymen tradition. For instance, John Holmes was cited as an apprentice in 1886 and achieved glassblower by 1900. Still, apprenticeship eluded the vast majority of children, who instead worked as operatives.

Glass bottle manufacturing was organized in a strict hierarchy of skilled adult craftsmen who worked as glassblowers, who were aided by unskilled children. Within the factory, employees worked in a ‘shop’ that included one or two glassblowers, and two to three unskilled helpers. These were independent ventures, as each glassblower set the working pace and pushed his help to maximum production. This approach was due to payment schedules; the factory paid wages for the boys and glassblowers were paid by the piece. Naturally, the boys worked at the shop leader’s tempo. In this arrangement the glassblowers earned six to seven dollars per week,

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16 “Blowing Off Bottles,” Milwaukee Sentinel, (2 Sept. 1880); Collection of glass whimsies made by Milwaukee glassworkers held at the Milwaukee Public Museum.
18 Ibid., pgs. 190-191.
19 1900 Federal Census for Milwaukee, Wisconsin; and Wrights City Directory of Milwaukee, 1886.
while boys made just sixty cents. The industry’s young teenage and child laborers often were referred collectively as small help, and nicknamed dog boys. This epithet reflected the “dog trot” of these employees as they ran through the factory trying to sustain the blowers’ rapidity.\textsuperscript{21} Even if skilled and unskilled workers were divided by experience and age, together their efforts were required to run a thriving manufacturing line.

It is undoubted that Chase Valley Glass operated in a similar hierarchy when production first began. Children worked in traditional roles of carrying bottles and gathering molten glass. The \textit{Evening Chronicle} described the factory’s first workforce as “twenty blowers, who work in pairs and have two boys as helpers.”\textsuperscript{22} Altogether, it was reported that seventy glassworkers were employed, most of whom likely worked in shops of four people.\textsuperscript{23} These employees attracted onlookers to the factory to witness Milwaukee’s newest industry. So many people traveled to the site that a saloon keeper temporarily opened a business near the site.\textsuperscript{24} Local newspapers recognized the public interest and published numerous articles on the bottle manufacturing process in Bay View. Children were often cited in these accounts.

While half of the employees found respite in the evening, the other half were busy toiling at the factory. During the nightshift, the workforce made clay pots for boiling molten glass for the dayshift. Clay used to make the pots was readied at the factory by barefoot children who stomped and mixed the ingredients needed to make clay.\textsuperscript{25} The pots themselves were made by Superintendent Joseph Slimm and his son Charles.\textsuperscript{26} They were English immigrants from the European glass industry, and undoubtedly learned the fine art during their services in the old

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\textsuperscript{22}“The First Blow,” \textit{Evening Chronicle}, (1 Sept. 1880).
\textsuperscript{23}“Blowing Off Bottles,” \textit{Milwaukee Sentinel}, (2 Sept. 1880).
\textsuperscript{25}“Blowing Bottles,” \textit{The Milwaukee Sentinel}, (10 Feb. 1883).
\textsuperscript{26}“The First Blow,” \textit{Evening Chronicle}, (1 Sept. 1880).
\end{flushright}
world. The small help stomped the clay for three days, but the entire process of drying the clay and making pots lasted four months.27 The pots were needed to hold molten glass while it was heated in furnaces to a near liquid substance ideal for blowing.

The required ingredients for glass were shipped to Milwaukee from throughout the world:

The materials used consist of sand, which is brought from Benton Harbor, Mich., by vessel, and laid down at the factory at 90 cents per ton; soda-ash, which comes from Liverpool, and costs $50 per barrel; salt, lime and coloring matter. The proportion in which these ingredients are mixed is a secret, as well as the manner of coloring. Any color, from white to black, can be given the “blow.”28

The glass components were then mixed and heated until they formed the proper gooey substance.29 One furnace could hold eight pots of glass, and was heated over 2,000 degrees to properly smelt the materials.30 The boiling liquid was then transported to rooms designated for glassblowing. The heat from the furnaces and boiling glass made the glasshouse an uncomfortable workspace. Soaked in constant sweat from laboring alongside melting furnaces, the workers were described as being “wet as drowned rats.”31 It was important that the nightshift continually attain their daily quota, as glassblowers depended on these unskilled laborers to produce enough material for a full eight-hour day.

At 7:00 a.m. the dayshift began at the glassworks. Men and children with lunch pails in hand, strolling down Lincoln Avenue, signified the transition from evening to morning labor. The gangs of glassblowers and gathering-boys assumed positions on a large wooden platform above their young helpers and clay pots filled with the molten glass. They spent their entire eight-hour shift in these cramped quarters. Milwaukee’s glassblowing process was described in 1883:

31 Ibid.
A number of long hollow iron tubes are arranged in a rack. The boy takes one of these and plunges it in the molten glass. A large chunk adheres to it and the boy then draws it out and wipes the tube with a sponge. The man then seizes the pipe and rolls the lump upon a stone in front of him. After rolling it until there is no air in the glass, he blows into the tube and then, after a few swings, drops it into an iron mold which is fastened at the bottom of a platform on which he works. With a lever, worked by his foot, he closes the mold and blows into the tube. The result is that the glass is blown out into the shape of the mold.  

From here, the carrying-in boys transported the bottles in a two-pronged fork to an oven for the glass to be annealed. An observer in 1883 described this worker as a “dirt-begrimed boy, armed with a two-pronged fork, and looking like a miniature demon.” The entire procedure, from gathering molten glass to placing the bottle in the annealing oven lasted a “fraction of a minute.” Bottles were kept in the annealing oven for twenty-four hours to gradually cool off to withstand cold air. The process repeated until the dayshift concluded their working hours, and the process was started anew. In 1882 the factory operated at a breakneck rate, manufacturing 10,000 bottles per day to meet orders for the Blatz Brewing Company. This quantity was vital to the livelihood of the glassblowers, but the children received no benefits from increased production. This situation often forced them to bargain for better working conditions.

Children were prohibited from joining the glass industry’s unions. Although the boys were without representation, they still loosely united through their shared experience as unskilled laborers. Strikes by the small help were common occurrences in the glass industry, but historians have often offhandedly described the events as “spring fever’ strikes.” Yet, these events suggest that children had agency in the factory hierarchy, despite the workplace control by glassblowers. On September 11, 1882 thirty gathering-boys struck for a wage increase. They

33 Ibid.
34 Ibid.
35 Ibid.
were paid equal to gatherers in other states, but felt their wages were unsatisfactory. Evidently the boys were aware of wage scales often published in trade and union journals. Because the boys were not formally organized, the factory was able to end the strike by filling their positions with scabs. Consequently, the children were unsuccessful, and were replaced by other children willing to work at reduced payment. Negotiations tactics had to be revised in order to win future strikes.

Another attempt at wage negotiations occurred on September 28, 1885 when seventy-five boys left work and picketed alongside the banks of the Kinnickinnic River. Again, they struck regarding low wages because their payments had recently been reduced from $3.00 to $2.50 per week. The boys stood steadfast throughout the morning and apparently “caused a stir” in Bay View. A massed withdrawal from the factory forced company representatives to meet with the crowd. A conference ensued, but the factory official offered no alternative. The children responded to the factory and “became somewhat hilarious, but refrained from actual violence.” Initial bargaining failed, and required the “Boys Strike of 1885” to continue throughout the week.

The glassblowers were anxious as the negotiations persisted. Because of the strike, two of the three furnaces were closed, and production plunged. The piecework payment for skilled workers was entirely dependent on their helpers, and without them the manufacturing line was stopped. Again, scabs were hired to bust the strike, but these individuals had to be trained to perform the work of veteran helpers. Only a few boys weakened and agreed to return to work.

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The majority of the children remained united, unwilled to break under pressure. Nevertheless, victory for the boys appeared futile.

As the plant waited to train new boys, the furnaces remained closed, and the glassblowers were unable to generate income. The local union had no alternative but to enter negotiations and support their young helpers. The factory charged three glassblowers with aiding their assistants and failing to influence the boys to accept a wage reduction. Plant managers fired the associates, but this action caused the union of skilled workers to mobilize. Suddenly the plant faced a general strike and the administrators were forced to succumb to the boys’ demands. On October 3 the small help won the strike and returned to their former wages of $3.00. Despite their position at the bottom of the factory hierarchy and lack of representation, the boys occasionally illustrated control of their working conditions.

Milwaukee’s glasshouse boys had a sense of camaraderie not only through strikes, but also through playful childhood antics. The National Child Labor Committee (N.C.L.C.) reported that children were often reported as playfully singing and participating in games while at work. Often these events were dangerous. For instance, some boys were found “spitting into a defective bottle or glass while it is hot, sealing it, then throwing something at it to make it break with a loud report.” Baseball was another popular form of amusement for the small help. In 1882, the Chase Valley Glass Blowers played a local junior club, the Bay View Clippers. Evidently the boys were not talented athletes, as they lost the game 32-6. Still, their participation on a factory team illustrated unity beyond the workspace. The boys’ lighthearted

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41 Ibid.
43 Ibid.
actions underscored that even though they performed grueling labor and organized successful strikes; they were after all, just children.

On August 16, 1881 the Chase Valley Glass Company changed the corporation name to the Wisconsin Glass Company. The reorganization also removed Chase as president. His position was filled by Guido Pfister, and another Milwaukee tannery owner, Frederick Vogel, became vice president. These men had made a fortune in the leather industry and were capable of pouring finances into the glass bottle business. They expanded the factory to produce windows, but still bottles remained its primary product. An advertisement in the 1883 Wrights City Directory of Milwaukee indicated that the plant made green, dark and amber colored bottles, fruit, pickle jars and druggist’s wares. The advertisement also included an image of the factory alongside the river. Bay View appeared in the distance, and ships and trains loaded glass products for transportation to yonder markets. Although the future seemed promising for the business, just six years after its renaming the plant fell into disarray as Milwaukee’s skilled laborers united for greater working rights.

Before 1886, Milwaukee’s bottle blowers were members of the Western Division of the Glassblower’s League. This union was formed in New Jersey in 1856. Local employees were active in the organization and even hosted its 1883 meeting in Milwaukee. By 1902 the plant’s workers held membership in the Glass Bottle Blowers Association (G.B.B.A.) as Local 15. The union met at Hoft’s Hall, a saloon owned by German immigrants, Martin and Minne Hoft. The

49 “No Reduction in Wages,” Milwaukee Sentinel, (10 July 1883); “Glassblowers Elect Officers,” Milwaukee Sentinel, (14 July 1883).
building was centrally located in the glassworker’s neighborhood on a triangle intersection of Lincoln, Kinnickinnic, and Howell Avenues.50 Milwaukee’s bottle blowers also united with other workers in the Knights of Labor as Bottle Blowers Local 5926 in 1886.51 During this era the glassworkers were caught in the hysteria of the Eight Hour League and labor reform that simultaneously impacted numerous industries.52

In 1885 employees of Wisconsin Glass threatened to strike in support of their Eastern comrades who began negotiations for a return to previous wages. Managers throughout the United States had combined efforts to withhold a payment increase that was demanded by the Glassblower’s League. C.J. Meyer, now the company president, posted a note on the door of the plant that requested the glassworkers to sign a declaration promising no further disputes over wages.53 The notice stated:

To whom it may concern: All blowers who wish to be employed by the Wisconsin Glass company must report in writing to the general office of the company before Aug. 27. Last year’s wages will be paid pending a settlement in the East, when if there is a reduction there, blowers shall refund the overpayment respectively.54

This strike was averted only because Eastern businesses had reached a decision over payments.55 Several other disturbances forced the factory into an economic collapse. Production was frequently ceased, and many skilled employees had left for unskilled work in other trades. Factory owners demanded that the glassblowers sign an “agreement not to strike or cause lockout for some stated time.”56 The glassblowers signed the accord, but the plant operated sparingly for the remainder of 1886. As a result of the workers’ idleness the union did not participate in the

50 Wrights City Directory for Milwaukee, WI; 12th Census of the United States, 1900, Milwaukee, WI.
51 Jonathan Garlock, Guide to the Local Assemblies of the Knights of Labor (Westport, CT: Greenwood Press, 1982).
54 “Probability That the Glassblowers will strike,” Sunday Sentinel, (23 Aug. 1885).
May 5 marches leading to the infamous Bay View Massacre. Wisconsin Glass was unable to meet bottle orders for Joseph Schlitz, Phillip Best, Franz Falk, Schlitz Breweries, and the Torchiani and Kremer Bottling Company. This resulted in a series of lawsuits that closed the glasshouse indefinitely. Men and children employed at the works were forced to find jobs elsewhere.

The Wisconsin Bureau of Labor and Industrial Statistics (W.B.L.I.S.) affirmed that the Wisconsin Glass Company had been closed since July 1886. The one hundred employees had left Milwaukee, but remained employed in the glass industry. The report stated, “Some have gone to Streator, Ill., others to Ohio and Colorado. Those remaining until now will leave this week for different parts.” Plants in Streator were notorious for recruiting children throughout the Midwest, making it plausible that some of these workers were transplanted, too. In 1888 the Wisconsin Glass Company, now financially stable, reopened with a newly installed fuel oil furnaces in place of coal. However, the resumed operations were brief, and once more the factory closed. The Knights of Labor offered to start a cooperative glass business in the works. But, it was not until Arthur P. Ayling, an experienced glassworker from Ohio, purchased the company in 1888 and renamed it the Cream City Glass Company. It was during this new era that outside pressures had begun to remove children from the factory environment.

The number of children and young teenagers employed by Milwaukee’s glass bottle industry is difficult to document before 1898. During the “Boys’ Strike of 1885,” an estimated seventy

59 Hindman, 138-139.
60 Noyes, 5.
boys worked at the factory.\textsuperscript{62} It was the first published account that cited the amount of children employed here. In the same year, the W.B.L.I.S. reported that 260 people worked at the plant, 14 who were under 14 years of age.\textsuperscript{63} After the turmoil of the 1886 labor movement settled, the plant regained stability and glassworkers returned. More young helpers were hired at the factory than ever before. By 1898 one hundred and six children under the age of 16 worked here.\textsuperscript{64} At the same time reformers and the W.B.L.I.S. had increased pressure on industries to end the employment of minors. They believed that inspections and labor laws could fix the dilemmas. Yet, these attempts were futile, because employers often found methods to continue their tradition of hiring children.

By 1867, Wisconsin regulated the employment of children younger than 18 years of age and women for factory work. These people were confined to eight hours of labor, and offenders could receive penalties for violations. Ten years later, legislation sought to remove young workers from positions that had high percentages of injuries and health risks.\textsuperscript{65} However, reformers were unaware of health risks for glasshouse employees. G.B.B.A. records as late as the 1917 listed many Milwaukeeans dying of lung related illnesses. For instance, Union records indicated, “Peter Eische of Branch 15, [was] a sufferer from tuberculosis and unable to work at his trade.”\textsuperscript{66} “Blow over” was a common occurrence in the industry that resulted in tuberculosis. This occurred when a glassblower blew too hard into a mold, thereby spraying foreign matter into the air to form a silicate cloud. In addition, Pittsburgh’s glass boys’ reportedly suffered

\textsuperscript{62} “Out on a Strike,” \textit{Milwaukee Sentinel}, (29 Sept. 1885).
\textsuperscript{64} Halford Erickson, et. al, \textit{8\textsuperscript{th} Biennial Report of the Bureau of Labor and Industry Statistics, State of Wisconsin, 1897-1898} (Madison, WI: Democrat Printing Company, State Printer, 1899), Manufacturer’s Returns.
\textsuperscript{66} Minutes of Proceedings of the 39\textsuperscript{th} Annual Convention of the GBBA of the United States and Canada: Aug. 2-12 (St. Louis, MO: Allied Printing Trade Council, 1915), 236.
from stiff necks and colds. Carrying-boys had the greatest danger, as they suffered from extreme
temperature variations as they ran between the furnace and annealing rooms. Undoubtedly
careless running through the factory transporting a glass bottle caused injuries, too. These health
conditions were commonly reported throughout the industry, and likely happened at Wisconsin
Glass.

By 1880 Milwaukee had become the state’s industrial center, and therefore, it was the
chief locale for the hiring of innocents. Residents were well aware of violations within their city.
Thousands of children did not attend school; however School Superintendent Anderson was not
worried. He claimed that, “The percentage of non-attendants in this city, as compared with other
cities, is very small.” Regardless, in 1886 the estimate of the number of working children was
astonishing:

The knitting factories employ about 500 [children]; the confectioners, 300 or 400; cigar
factories, 500; shoe factories, 100; bakeries, 200; tinware factories, 300; willow and
tobacco factories, the big wholesale establishments which send out work, and the retail
stores employ several thousand.

Reform organizations in Milwaukee, particularly the Humane Society, began pressuring
legislators to remove these children from factories. Compulsory school-attendance and age
requirements were popularly believed to be the solution to the problem. Mandatory attendance
laws were first enacted in 1879. Four years later the Milwaukee Sentinel estimated that 2000 to
3000 children were removed from factories because of such measures. In 1889 compulsory
education was required for children between the ages of seven and fourteen. Furthermore, no

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67 Larner, 361-362.
68 “Not as Bad as it Looks,” The Milwaukee Sentinel, (12 June 1886).
69 Ibid.
70 Robert C. Nesbit. The History of Wisconsin: Urbanization and Industrialization, 1873-1893 (Madison, WI: State
Historical Society of Wisconsin, 1985), pg. 251.
71 “Additional Local Matters,” Milwaukee Sentinel, (5 April 1883).
child under the age of 13 could work in any industry, unless he or she had a permit. Children over the age of 10, who could read English and were needed by their family for financial support, could obtain permission.\textsuperscript{72} To support the legislation, the state required the W.B.L.I.S. to regularly inspect factories and prosecute violators.

When helpers under the age limit were caught in a factory, the Bureau had legal means to discharge the worker and indict both the employer and parent. In 1887 inspections required that, “If children under twelve years of age are found in any factory or workshop, the inspector leads them to the office without ado and orders them to be discharged, notifying the proprietors at the time that if the offense shall be repeated, arrests and criminal prosecutions will follow.”\textsuperscript{73} Inspectors often spent their working hours traveling throughout the city, attempting to catch employers in the act of a violation.

A typical week for an inspector might include examinations at twenty to ninety factories. For instance, inspector August Lehnhoff investigated thirty-nine cigar factories and one garment shop between August 20 and 27, 1904. His routine included interviews with managers and young laborers. During this week, he issued affidavits for twenty-seven children under the age of 16.\textsuperscript{74} These children had legally sought permits that exempted children between 14 and 16 years of age, and required only ten working hours per day.\textsuperscript{75} Young laborers that were suspected of being underage were immediately discharged, and their parents and employers were prosecuted for the actions. During this week, Lehnhoff discharged only one child under 14, and as result, two individuals were prosecuted. His noted stated:

\textsuperscript{72} Orrin Friend, “Summary of Child Labor Legislation.”
\textsuperscript{73} 3\textsuperscript{rd} Biennial Report of the Bureau of Labor and Industrial Statistics, 1887-1888, pg. xi.
On Thursday August 25, 1904 I took out warrant against H. Berlowitz a cigar mfg for employing Charles Zastrow a boy 13 years old. On Thursday August 25, 1904, I took out a warrant against Mrs. Sophia Zastrow for allowing her son Charles 13 years old to work in a cigar factory. Both cases where tried in the Municipal Court on Friday August 26, 1904. Both pleaded guilty and where fined $5.00 and cost.76

Milwaukee’s bottle factory experienced similar inspections, and was accused for illegal hiring practices. In 1892, the W.B.L.I.S. reported one child under fourteen discharged, but in 1894 eighteen were removed from the factory.77 Inspections rooted some children from the industrial setting. However, many employers were aware of inspection times and simply hid their young employees from investigators. The N.C.L.C. often encountered these tactics in Midwestern glasshouses, especially those in Streater and East St. Louis, Illinois.78 Some of these children were eliminated from the works, but most employers still continued their illegal practices.

Despite frequent inspections and improved child labor legislation in Wisconsin, Milwaukee’s glass industry continued employing children. By 1900, one hundred were working at the plant. However, in 1903 improvements were reported by the W.B.L.I.S., as only fifty five children under 16 years age were listed.79 The 1900 federal manuscript census corroborates this change, listing only forty-six children under the age of 16. Most of these children were second generation Germans or of western European decent (six of these children had Polish ancestry). Seven children were listed as immigrants themselves, who had arrived during the 1880s. The youngest boy, William Thome, was just twelve years old. Klara Kluczynski was the only girl that was listed, but probably more were hired. The children were employed as common laborers,

78 Hindman, 125-129, 121-151.
79 11th and 12th Biennial Reports of the Bureau of Labor and Industrial Statistics, 1900-1902, and 1903-1904, Manufacturer’s Returns.
or specifically cited by enumerators as carrying-boys, gathering-boys, and pipe-boys. The census indicates that underage employees continued working at the plant despite the best efforts of reform organizations.

Hereafter, reform continued by raising the legal age for factory employment. By 1911, legislation ended industrial labor for children, but still allowed them to work in the service sector with permits between the ages of 14 and 16. Even so, as late as 1917 the G.B.B.A. frequently cited boys employed in helper positions. Local 15 also reported young workers during a conference on working conditions at the plant during the annual union convention. Young apprentices were still allowed in the glass industry, but as machines entered the industry the union ended this exploitation because factory positions became scarce. Legislation alone did not end child labor. New technologies introduced after 1900 stopped managers from employing minors and transformed the glassblowers into unskilled workers.

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In 1894 the factory again underwent a change in management when the Cream City Glass reincorporated as the Northern Glass Works. Arthur Ayling remained active in the new business as treasurer, but soon after the change of title, the business fell into disarray. A bad batch of glass resulted in a poor quality of bottles being produced at the factory. Ayling hired William Franzen, owner of a paper stock company, to inspect the problem. Franzen managed a thriving wholesale dealership of scrap iron, paper stock, woolen rags, and metals out of his warehouse formerly located where city hall now stands. Although his facilities were lost to fire five times,
he always recovered. Franzen’s first load of waste paper was from the Milwaukee Sentinel Company. In many regards, his business was the original recycling industry in the city. The paper dealer not only corrected dilemmas at Northern Glass, but he became interested in bottle manufacturing and bought the plant in 1896.

Under new leadership, the glass industry underwent a transformation from an outdated glassblowing shop to a thriving modern business. When Franzen purchased the company, operations were still executed in the old furnace built by Chase and the subsequent additions by the Wisconsin Glass Company. However, two consecutive fires in 1898 and 1899 destroyed the plant. The business briefly operated out of makeshift furnace buildings, but the factory was quickly rebuilt, and heralded as the most modern glassblowing facility in the United States. Franzen spent each workday at the new factory, often arriving before the glassblowers at 6:45 a.m. and staying until 6:00 p.m. The final name change happened when Northern Glass Works reincorporated into William Franzen and Son in 1900. The business was so successful that Franzen attempted to expand into a global market by researching the potential for glass manufacturing in Japan. William Franzen died on August 25, 1911, but his son William Franzen, Jr., Oscar Koehler, and Edward Pearson continued the operations. The triumph for the business was not due to clever management by the family, but changes in bottle making technology.

90 “Necrological,” The Commoner and Glassworker (9 Sept. 1911); Secretary of State Corporation Division, Incorporation Papers: Domestic Corporations, 1848-1945, F413-F467; Series 356, Box No. 250, Folder 435.
Among the additions to the new factory, Franzen Sr. added a continuous tank system that was recently developed in 1892. Several batches of glass were now concurrently produced in varying stages. This ended the need for fragile clay pots that often broke and ruined the molten glass contents. Children who mixed the clay with their bare feet, and skilled adults who molded the pots, were thus released from the workspace as their tasks became obsolete. Moreover, the continuous tank system had further ramifications. Machines needed a constant supply of molten glass, something that the ancient method of clay pot melting could not provide. Now, large batches of glass were always readied, and permitted the industry to mechanize the workforce. Even without machines, traditional glassblowers were able to work at a greater pace, and output had drastically increased.

Skilled workers felt threatened by the potential end of their craft when machines were initiated in the glass industry. However, the GBBA soon recognized that it was futile to stop mechanization and instead sought means to adjust to the changes. Workers were encouraged to learn machinist skills and willingly become operators. Semi-automatic and automatic machines were available for purchase in 1910. Such machines required a skilled gatherer to collect molten glass and place it into the machine’s moulds. Glassblowers were also no longer needed, as the process from this point was mechanical. These early machines did not have conveyor systems, so children were still needed to carry bottles. Alternatively, an automatic machine removed skilled workers entirely, because the entire process was mechanized and worked by one unskilled employee. In 1904 the primary automated machine was the Owen’s

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Automatic, but few businesses could afford such an upgrade. Thousands of glassblowers would be displaced by the gradual introduction of machinery.

Because the continuous tank system was brought to Milwaukee, this allowed an eventual transition to mechanized bottle production. In 1910 the factory installed 11 United Machines, but still operated 40 blow shops; creating a workforce of 186 journeymen and over one hundred helpers. Union representatives in Milwaukee recognized these changes in the industry, and that blown-ware was becoming obsolete. The GBBA hoped “the idle blower would take up the work offered by this machine and so adapt himself to the new order of things.” Likewise, a reporter for the Commoner and Glassworker newspaper stated, “Prospects [in Milwaukee] for the future are bright in the machine department, but it does not look so good for the blowers.” Machines had the potential to eliminate most skilled bottle blower trades; apparently this was already occurring just one year after they were introduced here. By 1917 eleven Teeple, ten O’Neill, and five United Machines were operating, thus ending the need for hand-blown ware.

Milwaukeeans were, nonetheless, able to negotiate methods to secure de-skilled jobs for glassblowers whose traditional craft had become obsolete. In 1917, at the GBBA Annual Convention, delegate Frank Koebert of Local 15 discussed unique machine assignments at the factory. Initially skilled workers were unwilling to operate the equipment, but without enough machinists, the factory faced the reality of closing. First, three men were pushed to operate two two-man machines, and as a result the mechanisms were understaffed and broke. Koehler and Local 15 entered negotiations to find a solution to their dilemma. Koebert stated, “We put the

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93 Frain, 434.
96 “Cream City Glass News,” The Glassworker,” (1 July 1911).
proposition up that if they would pay the two-man price then men would work the machine. The manager told us he was glad to do so, he was figuring on shutting down one or two tanks for the reason that he couldn’t run them without extra help.”98 The delegate continued, “We feel that if we are not given that privilege the plant will not work next season.”99 Koehler had agreed to the changes, and furthermore, helped glassblowers secure machine jobs even when several continuous tanks were closed by malfunction. When this occurred, plant managers placed three men to a one-man machine and rotated their work in forty-minute cycles.100

During the technological transition, former glassblowers often found themselves competing for the same jobs as young apprentices. The GBBA recommended that apprenticeship end, because these journeymen were taking jobs from glassblowers who were displaced. The committee report stated, “A large number of blowers who at present did not have opportunity to work at their trade, but were obliged to take up other occupations and they undoubtedly would be glad to get back into the trade.”101 When automatic one-man machines were introduced to the industry in fall 1917, they were filled by an apprentice, but the union stressed that former skilled glassblowers should have the opportunity to get this work.102 Some employers hired apprentices to learn how to blow, but then transferred them to laborer departments.103 Again, this was viewed as an injustice to the adults that worked in both factory sections.

Young boys were also increasingly apathetic to employment as operatives in the glass industry. In 1916, the factory reported that the small help shortage forced the plant to only operate one child to a machine.104 One year later the problem had worsened. Koebert stated the

99 Ibid.
100 Ibid.
101 Ibid., 58.
102 Ibid.
103 Ibid., 68-69.
104 “Cream City Notes,” The Glassworker (10 June 1916).
children’s sentiment to his glassblower brethren. He said, “the firm was offering boys $3.00 a
day and could not get any. It was a question... of whether we would go to work or the plant
shut down.”\textsuperscript{105} The \textit{Glassworker} confirmed this predicament;

“The boy problem seems to hamper this plant more this spring than any other season that
the writer remembers of, and although this firm has advanced their wages there is still a
shortage, and we can use many good glass house boys.”\textsuperscript{106}

The boys were no longer enticed to wages and rigors of small help positions offered in
glass manufacturing. This dilemma, coupled with tougher child labor legislation, forced the
bottle manufactures to make changes in the factory line. Similarly, Illinois glass factories
purchased automatic machines to substitute boys when they were scarce or demanded expensive
wages. Whether boys were removed by inspections or were disinterested in glasswork,
automated machines were frequently used to replace their labors.\textsuperscript{107} But, until this technology
was affordable to plant managers, the removal of children from helper positions created a void in
the manufacturing process that needed to be filled.

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Unlike Illinois glass factories that could afford automatic machines, William Franzen Jr. never
advanced further than semi-automatic technology until 1919. Without a conveyor belt system,
laborers were still needed to carry bottles. After the introduction of the continuous tank system,
adults were increasingly employed in boys’ positions. In 1912, Pennsylvania glasshouses
reportedly had their carriers transfer bottles using a tray because of technological changes. New
technologies had greatly increased production Pittsburgh plants. Carrying-boys were now

\textsuperscript{105} Minutes of Proceedings of the 41st Annual Convention of the GBBA, 1917, pg. 157.
\textsuperscript{106} “Factory Conditions at Milwaukee,” \textit{The Glassworker} (14 April 1917).
\textsuperscript{107} Hindman, 141-144.
required to transport an entire load of bottles, instead of just one. But, boys were unable to carry such loads, and the factory instead hired one adult male to replace two to three children.\(^{108}\)

Apparently similar actions took place in Milwaukee once the tank system started. For instance, forty two year old Charles Damler, like Julia Lecus, was among the employees cited as carriers in 1900. By 1917 women were reportedly working in snapping-up, carrying-in, and other helper jobs at the Cumberland and More-Jonas Company in Bridgeton, New Jersey.\(^{109}\) In Milwaukee, Children were still dominant in this position but were being slowly weaned from the factory. Altogether the Franzen carrier gang included twenty-four employees, in a bizarre merge of young and old.\(^{110}\) Just ten years later, employees under the age of 16 were almost entirely removed from factory due to these conditions.

During this era, Milwaukee had an indefinite ethnic hierarchy that placed Germans and Yankees at the top of the city’s politics and culture.\(^{111}\) New immigrants were locked into a “stereotype that dictated where and how its members could work, live, worship, vote, or deal with members of the other groups.”\(^{112}\) By the mid 1870s, Germans were viewed similarly to Yankees as industrious, thrifty, and highly educated people. They were able to influence politics and social norms in Milwaukee. In contrast, Poles, Hungarians, Greeks, and Italians were at the bottom of the hierarchy. The Poles were viewed as subservient to Catholic matters in Rome and unstable during labor turmoil, but overall were considered industrious people. Italians had a similar analysis, but were supposedly coupled with alcoholism and violence. Hungarians were viewed as a transient population, living in unclean conditions and saved their finances to return

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\(^{108}\) Hindman, 142-143.


\(^{110}\) Manuscript version of the Federal Population Census for Milwaukee County, Wisconsin, 1900.


\(^{112}\) Ibid, 42.
to Europe. Parallel hierarchies were developed in other Great Lakes’ urban and industrial centers. For instance, Chicago’s Poles found themselves in nearly identical social positions before the turn of the century. Stereotypes often excluded immigrants from labor organizations and skilled employment until semi-automatic machines were purchased in Milwaukee.

This ethnic hierarchy was reflected in the local glass industry, as German and Yankees had been recruited to work in skilled positions since the factory opened in 1880. Similarly the 1910 census illustrated such a division. Ten years prior, Yankees and Germans primarily filled both skilled and unskilled positions. But, with the removal of over 100 children during this era, Franzen needed to find an inexpensive substitute, and in 1910, 99 Eastern Europeans above 16 years of age replaced the boys’. Magyars, Servians, and Slovakians were among this transition, but 67 of these people were of Polish ancestry. These individuals no longer held traditional small help titles, but instead were strictly listed as a “laborer.” Workers with this title performed secondary tasks, such as fetching and carrying objects for skilled employees. In comparison, peoples of Yankee and German ancestry were specifically listed as “glassblowers,” “glassworkers,” or another trained position. Essentially, Eastern Europeans had replaced carrying-boys, and the other helper positions that were filled by children.

However, it was not coincidental that these Eastern Europeans were hired for unskilled labor. Contemporary scientific studies abound with research that attempted to determine a racial

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113 Ibid., 41-60.
115 Manuscript version of the *Federal Population Census for Milwaukee, WI, 1910*. Enumerators were specific when citing the ethnicity of people of Croatian, Magyar, Polish, Servian, and Slovakian decent. Poles were identified by their ethnicity and nationality of Austrian, Russian, or German. Similarly, Croations, Magyars, Servians, and Slovakians were also identified by their nationality of Hungarian or Austrian.
116 The definition of laborer was taken from David Montgomery, *The Fall of the House of Labor: The Workplace, the State, and American Labor Activism, 1865-1925* (Cambridge: Cambridge University Press, 1987), pg. 63.
117 Manuscript version of the *Federal Population Census for Milwaukee, WI, 1910*.
hierarchy. Their endeavor was to associate certain supposed deficiencies that placed one race superior to another. Glassworks managers were central to the debate, and statistics gleaned from their workforce were used to solidify these findings. In 1911 the *Report of the Immigration Commission of the United States Congress* published a survey of glasshouse employers regarding the “relative efficiency of the immigrant labor supply.”\(^{118}\) The factory managers believed that “there are very decided preferences regarding race for any or all occupations.” The employers categorized individuals into an ethnic hierarchy of: “Germans, English, Belgians, French, Magyars, Slovaks, Poles, North Italians, South Italians.”\(^{119}\) These ethnic stereotypes solidified discrimination against immigrant workers from skilled labor positions. The pecking order was underscored by a further separation into two classes. Employers stated, “The opinion was universally expressed that there was a wide difference between the Germans, English, Belgians, and French on the one hand and the Magyars, Slovaks, Poles, and North and South Italians on the other.”\(^{120}\) South Italians were believed to have been “unfit and inefficient laborers,” and to be excluded from employment altogether.\(^{121}\)

This hierarchy was evident among the glassworkers recorded in the 1900 census. Of the 101 glassblowers listed, most had Germany, England, Ireland, and even a few Scandinavian countries cited as their origin of birth. The other skilled workers were Yankees and second generation Germans who had migrated from the East Coast or were born in Wisconsin. By 1910, 126 glassblowers were listed. The ethnicity of the skilled workers had not changed thirty years after the factory first opened; merely fewer German immigrants filled these positions. Only the


\(^{120}\) Ibid.

\(^{121}\) Ibid.
unskilled positions, namely those occupied by the boys, underwent a transformation. Children were removed and Eastern Europeans of Polish, Magyar, and Slovakian decent replaced their helper occupations. Furthermore, Italians were never hired at William Franzen and Son despite their residence in an ethnic enclave in close proximity to the plant. 16 children under the age of 16 were still employed at the factory, but they too left the industry owing to disinterest as Delegate Koebert stated in 1917. The plant’s ethnic hierarchy perfectly reflected the recommendations by American glasshouse managers in their 1911 report to the United States congress.

Without a fully mechanized system, Franzen had to hire Eastern Europeans over the age of 16 to carry bottles. These people were willing to work in cheap labor, because they were discriminated from better paying positions. But, as the workforce deskilled, Yankees, Germans, and Eastern Europeans competed for the same jobs. As a result, Union newspapers were littered with anti-foreigner sentiment. For instance, in 1901 Reports of the United States Industrial Commission stated that the GBBA had a clause in its constitution that “any member who encourages or assists any foreign glass blower to come to this country shall be fined $100 and be suspended for one year.” In 1911, glasshouse managers in Western Pennsylvania reported that only one Eastern European had union membership. Employers also related the hiring of immigrants to the introduction of machines. They stated, “The native labor supply has not been sufficient to supply the demand for unskilled employees created by the employment of machine methods, and the immigrant laborers have taken the places of the Americans in these

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occupations.” In thirty years, glassblowers had moved from the top to the labor hierarchy to competing with common laborers for unskilled work.

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Milwaukee’s union representatives reported to the GBBA that the condition of the trade had turned poor in 1919. In this year, the factory updated to fully automated line by the installation of an automatic lehr feeder and conveyor system. These machines were advertised in 1917 as the “No-Boy Machine,” because the conveyor system ended the need for a carrying-boy. In 1917 the plant had already installed some conveyors, and employee William Stender, had created a machine to “stand the bottles up after they are carried in the conveyor.” But, the automation also ended the need for any skilled labor. Although 238 Milwaukeeans were members of Local 15, only 95 were employed in glassblowing. By August conditions worsened as 221 of the 222 associates worked outside the trade and one individual was unemployed. Apprentices were still listed at Franzen, but these men were undoubtedly in unskilled positions or working in the mold shop. Their training now emphasized machinist skills rather than the glassblowing craft.

The future of glassmaking in Milwaukee gradually faded within the next decade. On January 16, 1920, the Eighteenth Amendment banning the sale of alcohol in the United States was put into effect. William Franzen, Jr. attempted to continue bottle production for near beer and other substitutes made by local brewers. Moreover, the entire industry was shifting to the

125 Ibid, 215.
126 Glass Bottle Blowers Association of the United States and Canada, Secretary’s Quarterly Statement, for the quarters ending 29 Feb. 1912 - 30 Nov. 1919.
130 Glass Bottle Blowers Association of the United States and Canada, Secretary’s Quarterly Statement, for the quarters ending 29 Feb. 1912 - 30 Nov. 1919.
gas-belt in West Virginia, Ohio and Indiana to eliminate the cost of transporting fuel for machines. Prohibition, coupled with changes in the geography of the glass industry, ultimately led to its demise in Milwaukee. The corporation dissolved in 1922, but the factory remained listed in the *Wrights City Directory for Milwaukee* until 1927.131 The union lingered to 1924, with just 52 members, but it was unable to get any delegates. Just one year later, the organization was cited as inactive; thus ended representation for skilled glassworkers in Milwaukee.

Nearly fifty years after Chase opened his plant in 1880, the city’s glass bottle industry had ended indefinitely. The glassblower, as cleverly coined by a Toledo, Ohio resident in 1922, “joins the unicorn, the dodo, and the horsecar.”132 The skilled journeyman had joined the ranks of unskilled laborers, pulling a lever on a machine rather than commanding a shop of children to race between the furnaces and annealing rooms. Glass industry traditions, child labor reform, technology, and stereotypes had defined those who filled helper positions. Children and Eastern Europeans, already at the bottom of the factory hierarchy because of age or stereotypes, were joined in this fate by the glassblowers, who ultimately succumbed to the blow of technology.

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131 Noyes, 7; *Wrights City Directory for Milwaukee, WI*, indicate activity at the plant until 1927; The factory was dissolved on 21 Jan. 1922. Office of Register of Deeds, Dissolution Papers. Secretary of State Corporation Division, Incorporation Papers: Domestic Corporations, 1848-1945, F413-F467, Series 356, Box. No. 250, Folder 435, William Franzen and Son.  