

AUGUST 1994



Rhode Island History

A RHODE ISLAND HISTORICAL SOCIETY PUBLICATION

Volume 52, Number 3



AUGUST 1994

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Volume 52, Number 3

Published by
The Rhode Island Historical Society
110 Benevolent Street
Providence, Rhode Island 02906-3152
and printed by a grant from the State of
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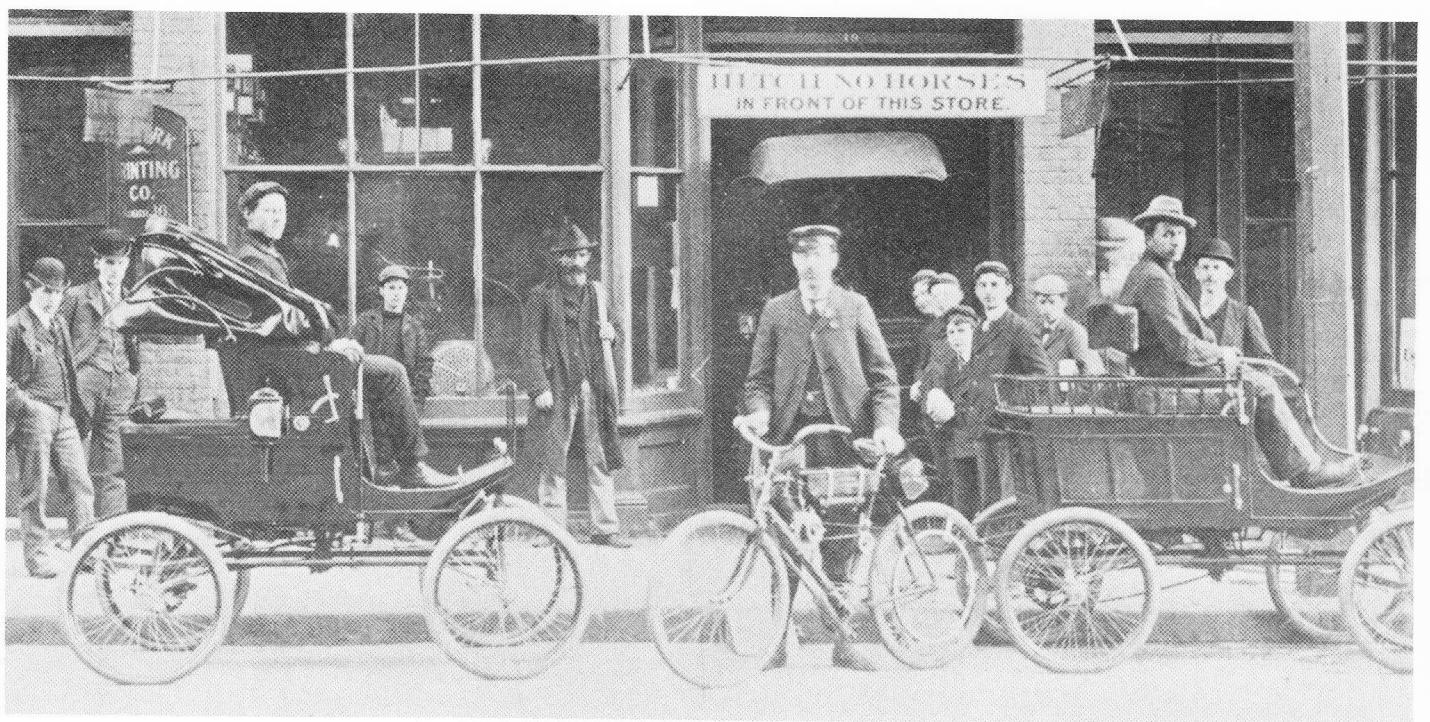
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ALBERT T. KLYBERG

This issue of *Rhode Island History* is made possible by a grant from the June Rockwell Levy Foundation.
It is dedicated to the memory of Winifred Thompson, a longtime member of the foundation's board.

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RHODE ISLAND HISTORY (ISSN 0035-4619)

RHODE ISLAND HISTORY is published in February, May, August, and November by The Rhode Island Historical Society. Second-class postage is paid at Providence, Rhode Island. Society members receive each issue as a membership benefit. Institutional subscriptions to RHODE ISLAND HISTORY and the Society's quarterly newsletter are \$20.00 annually. Individual copies of current and back issues are available from the Society for \$5.00. Manuscripts and other correspondence should be sent to Dennis Conrad, editor, at the Society. Postmaster: Send address changes to Rhode Island Historical Society, 110 Benevolent Street, Providence, Rhode Island 02906-3152.



The Automobile Comes to Rhode Island

J. STANLEY LEMONS

It may be difficult now to imagine what Rhode Island was like before the automobile, but in 1890 the state had virtually no paved roads outside the cities and nothing of what came to constitute the automobile culture. Yet by 1910 the automobile was already reshaping the state with new laws and regulations, new expenses, delights, and dangers. Filling stations, garages, auto supply stores, new and used car dealers, car insurance, auto togs and auto tags, songs, and auto motifs—the whole automobile culture was rapidly taking shape. In those early years the nation's automobile industry was dynamic and chaotic, and Rhode Island was home to a surprising number of automobile makers and manufacturers. In fact, the Alco, arguably the finest automobile made in the United States before World War I, was manufactured in Providence.

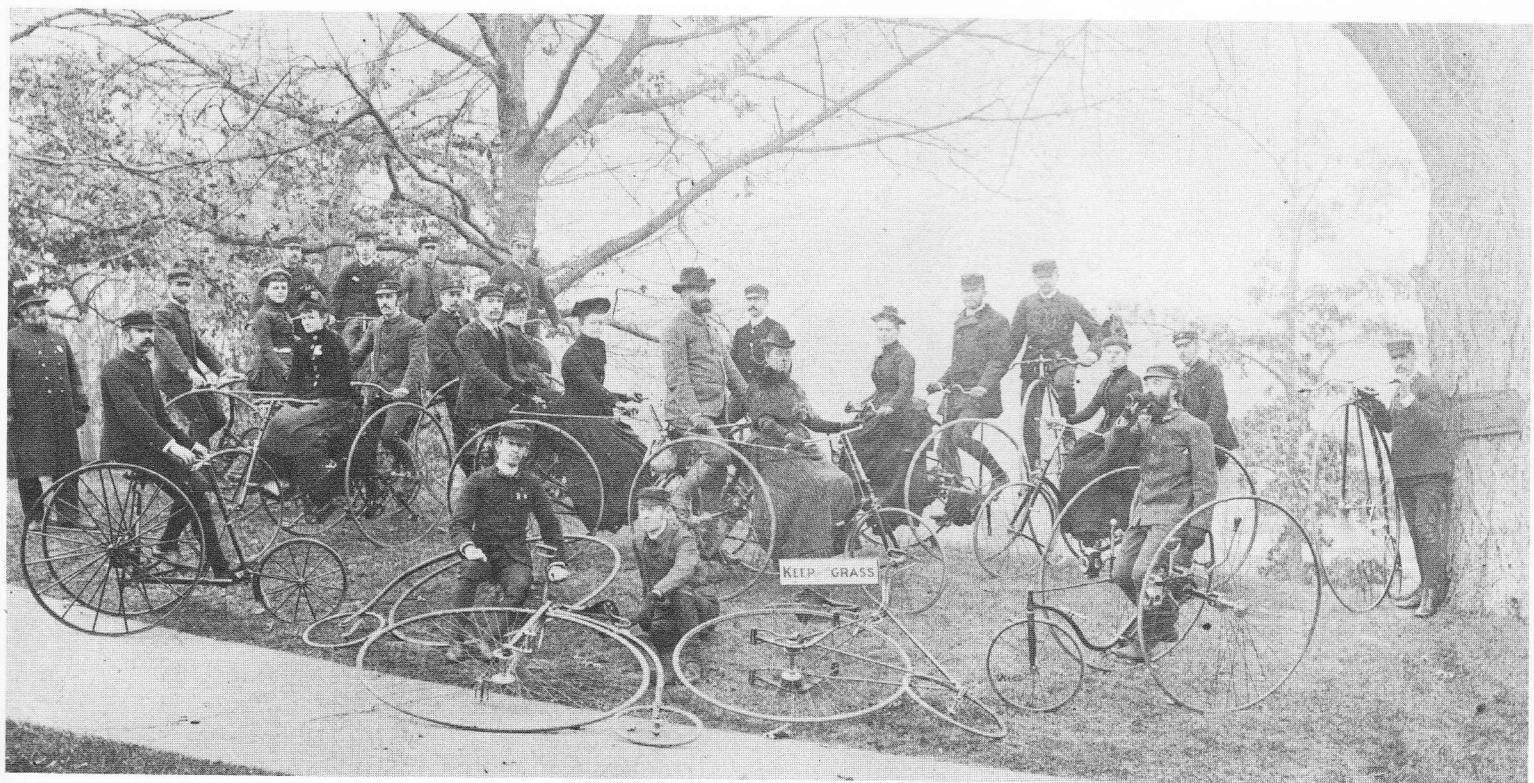
The idea of a self-propelled road vehicle had been around for a long time before anyone could actually make one of any practical value. Back in the fifteenth century Leonardo da Vinci had speculated about such a machine, and cumbersome steam-powered vehicles were reported to have been constructed in China in the seventeenth century. In 1769 the French created a steam-powered tractor for pulling cannons, but this monster was less efficient than horses at the same task, so the idea was dropped. The first practical self-propelled vehicles appeared in the nineteenth century; but whereas railroads and steamboats were triumphantly successful, vehicles designed for road travel were failures.

Given the bulk and weight of steam engines and the terrible roads of the preautomobile era, the development of the automobile was delayed by the railroads' great superiority in long-distance transportation of freight and passengers. This was especially true in the United States. As historian James Flink has noted, America's "unexcelled waterways" for steamboats, and its "rapid development of the railroad network," "reduced the stage coach lines to the role of short-haul feeders and discouraged the building of improved roads."¹ Interest in highway improvement faded wherever the railroads developed, not to return to France, Great Britain, or the United States until the "great bicycle craze" of the 1880s and 1890s.² Without better roads, the automobile remained fairly impractical.

Some historians regard the bicycle as the most important technological innovation in the eventual development of the automobile.³ Inaugurated in France in the 1860s, the bicycle industry spread from there to Britain and America. Since bicycles required better, smoother roads than horse-drawn vehicles, bicyclists mounted a substantial and sustained campaign for good roads. On 30 May 1880, in Newport, Rhode Island, the League of American Wheelmen was organized, with the improvement of public roads and highways as one of its main goals.⁴ The effort for road improvement accelerated when the great bicycle craze swept the United States after 1885 with the introduction of the modern low-wheeled safety bicycle. Thousands of bicycles were sold, and bicycle

The Coleman Auto and Cycle Company, at 19 Washington Street, Providence, sold and repaired automobiles, gasoline-powered bicycles, and gasoline engines. Photo from the Providence Board of Trade Journal, April 1901. RIHS Collection (RH 1 X3 4614).

J. Stanley Lemons is a professor of history at Rhode Island College. An earlier version of this paper was presented as the Newell D. Goff Lecture at the Rhode Island Historical Society in November 1993.



A gathering of the Rhode Island Wheelmen Bicycle Club, circa 1887. Albumen print. RIHS Collection (RHi X3 8044).

periodicals whipped up enthusiasts to pressure politicians to improve the streets and roads. A petition campaign to Congress resulted in the creation of the Office of Road Inquiry in the Department of Agriculture in 1893. That this responsibility was given to the Department of Agriculture reflected the fact that the bicyclists' efforts coincided with similar demands from farm organizations.

In the 1890s automobile enthusiasts joined the bicyclists in demanding improved roads. The National League for Good Roads, founded at the World's Columbian Exposition at Chicago in 1893, began holding annual conventions, which were attended by such prominent individuals as Theodore Roosevelt and William Jennings Bryan. The rising clamor succeeded in forcing many states to undertake programs of road improvement. Between 1892 and 1913 twenty-six states—including Rhode Island—passed legislation to finance, build, and maintain roads. The timing of Rhode Island's concern about its public highways clearly reflected the impact first of the bicyclists and then of the automobile.

The bicycle was important to the development of the automobile in other ways as well. Key elements of early automotive technology were first employed in making bicycles; many early auto makers in Europe and the United States in fact began as bicycle manufacturers.⁵ In addition, the bicycle created (as Flink put it) an "enormous demand for individualized, long-distance transportation that could only be satisfied by the mass adoption of motor vehicles."⁶ But the automobile had to prove to the public that it was practical, and consequently early automobile enthusiasts and manufacturers organized a variety of efforts—auto clubs, shows, rallies, meets, races, periodicals, propaganda—all intended to prove that the automobile really worked.



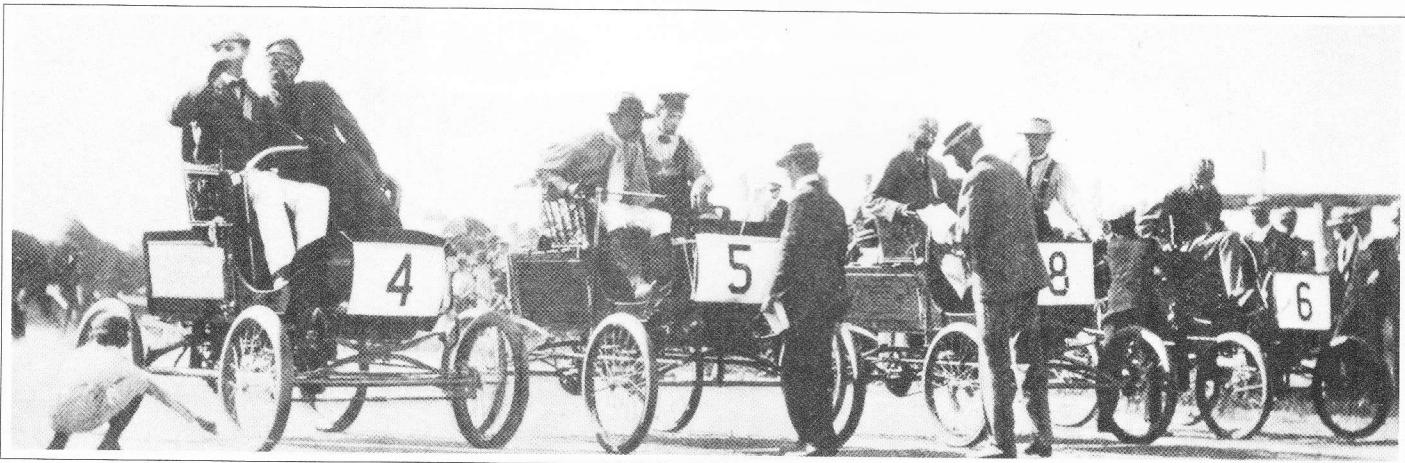
The age of the automobile in the United States began in 1895. Autos had been commercially manufactured and sold in Europe for several years before that, but every automobile made in America had been an experimental, one-of-a-kind model, with no two cars of the same design. Then, in 1895, a number of things happened: the periodicals *Motocycle* and *Horseless Age* began publication; George B. Selden received his patent on the internal combustion engine; nearly five hundred other patent applications relating to the automobile arrived at the U.S. Patent Office that summer; Gimbel Brothers and the R. H. Macy Company offered the first European automobiles for sale in the United States; the *Chicago Times-Herald* sponsored the first road race in America on Thanksgiving Day, 28 November; and the Duryea brothers organized the Duryea Motor Company, America's first commercial manufacturer of cars.⁷

Motor races were only one way that builders and promoters sought to show off the automobile. In September 1896 the first automobile track race in America took place at the old Narragansett Park off Washington Street in Cranston.⁸ The organizers planned to run a series of five-mile races around the one-mile track during the course of the five days of the Rhode Island State Fair. The first day's races, which attracted 40,000 spectators, began with the race starter declaring, "Now go—if you can!" Only one of the eight entries could not; and when the race was over, the two electric autos had defeated all the gasoline cars in the competition. About 5,000 spectators saw the electric automobiles win again on the second day. After a "West Indian hurricane," with winds up to eighty miles an hour, washed out the next two days of the fair and their scheduled races, an estimated 53,000 turned out to watch the last race on the fair's final day.⁹

The Rhode Island Automobile Club, organized in 1900, sponsored motor races at Narragansett Park, automobile tours around the state, and an annual hill climb on Thanksgiving Day—all designed to stimulate the public's interest in the automobile and to show off the glories and wonders of their machines.¹⁰ The club's first race-meet at Narragansett Park in October 1901 featured the famous French driver Henri Fournier in a 60-horsepower Mors, which zoomed around the one-mile track in one minute and seven and a half seconds (53.3 miles per hour).¹¹ The Rhode Island Automobile Club races were a major event on the international racing calendar until 1904, when the Vanderbilt Cup races were begun on Long Island.¹² The club discontinued its race-meets in 1905, but the famous race-driver Barney Oldfield put on a show at the state fair in September of that year, attracting near-record crowds.¹³

In Newport the wealthy social set had its own automobile activities, which began with an "automobile parade" on Bellevue Avenue in September 1899. The following summer Mrs. Cornelius Vanderbilt, Jr., gave an "automobile outing" to Narragansett Pier, and that summer and fall saw races on Newport's Second Beach and at Portsmouth's Aquidneck Park. Evidently some of the daring young men also raced on the back roads, thereby provoking both Newport and Portsmouth to enact ordinances against speeding in June 1900.¹⁴ "That some one has not before this been killed by this reckless driving is due more to good luck than anything else," declared the editor of the *Newport Mercury*.¹⁵ Many of the expensive, foreign-made automobiles in Rhode Island were to be found in Newport, owned by such members of the social register as William

Watts Sherman and Royal Phelps Carroll (Panhard), Reginald Vanderbilt (a Daimler), F. C. Dewitt (a Mercedes), Augustus Jay (a Renault), and Mary Cunningham Bishop (a FIAT).¹⁶



John Jacob Astor, Baron de Moroques, J. McMillin Hamilton, and Paul Fosdyck prepare to race their steamers in Newport, 30 August 1901. Color lithograph from Harper's Weekly, 14 September 1901.
RIHS Collection (RH_iX3 4190).

When the automobile age began, it was not evident which type of vehicle would prove most popular. At the end of the 1890s the annual production of both electric and steam automobiles exceeded that of gasoline cars.¹⁷ Many regarded the electrics and steamers as superior to the gasoline buggies. By 1897 electrics were being built by a number of automakers, including the Pawtucket Motor Carriage Company, a subsidiary of the Campbell Machine Company.¹⁸ The power source of these cars was safer than gasoline, and even steamers used gasoline or kerosene to fire their boilers. But the primary advantage of electrics was that they were easy to start and operate, and they were especially favored by women. Steamers were hard to fire up in cold weather, and until a practical self-starter was invented for the gasoline car, the hand crank was positively dangerous, as many an injured or broken wrist or arm could prove.¹⁹

But electric cars had a limited range, their speed declined as the batteries ran down, they had poor hill-climbing capability, and they were more expensive to buy and operate than comparable steam and gasoline cars. As a result, the vogue of the electric car quickly passed.²⁰ Of the 1,030 autos registered in Rhode Island in May 1905, only 13.3 percent were electrics. Most of these were little Waverly runabouts of 2½ to 4 horsepower. Two-car owners often had a Waverly for getting around town and a more powerful gasoline vehicle for touring. For example, Henry F. Lippitt, general manager of the textile-manufacturing Manville Company, owned both a 20-horsepower Winton and a 2½-horsepower Waverly electric; J. Jerome Hahn, an attorney and future justice of the Superior Court, had a 16-horsepower Peerless for himself and a 2½-horsepower Waverly for his wife Peulah.²¹

More significant were steam cars. Practical steam automobiles were created in the late 1880s, although American inventors had been building operable steamers since the 1860s.²² Many of Rhode Island's home-grown automobile experimenters made steam vehicles. By 1900 steamers had become the most popular kind of automobile, because they were easier to manufacture and maintain than gasoline autos and could go faster and farther than electrics. In 1900 and 1901 the steam Locomobile was the best-selling car in the United States.²³ Rhode Island's May 1905 registration list showed the Stanley Steamer as the single most popular make, even though steam-powered automobiles now constituted

just 19.6 percent of all autos in the state. In 1906 a Stanley Steamer set a world speed record of 127.6 miles per hour at Daytona Beach. But by then the gasoline auto had come into its own, and although Stanleys were produced until 1924, the heyday of the steamer had already passed by 1902-1903.²⁴

Statistics for 1905 revealed that 65.3 percent of the nation's automobiles were gasoline-powered, a proportion nearly identical with that in Rhode Island.²⁵ The gasoline automobile had clearly begun leaving its rivals in the dust as early as 1902-1903. That meant that a number of Rhode Island automakers had chosen the wrong road in producing steam-driven cars. At least thirty automobile builders and manufacturers can be identified in Rhode Island between 1866 and 1919, and thirteen of them made steam vehicles (see the accompanying list).



AUTO-VEHICLE MANUFACTURERS IN RHODE ISLAND

ALCO: Gasoline. American Locomotive Company, Providence, 1909-1913. 5,000 produced in 54 different models.

"AMERICAN BERLIET": Gasoline. American Locomotive Company (licensed manufacturer of the [French] Berliet), Providence, 1906-1908.

BALDWIN: Steam. Baldwin Automobile Company, Baldwin Automobile Manufacturing Company, Baldwin Motor Wagon Company, Providence, 1899-1901. Designed and built by Leo F. N. Baldwin.

BRAYTON: Kerosene engine. George B. Brayton, Providence, 1873. Two experimental internal-combustion engines for a streetcar, each one of a kind.

CAMERON: Gasoline. James W. Brown Machinery Company (textile machinery manufacturer), Pawtucket, 1903-1905. At least 500 produced.

CAMPBELL ELECTRIC: Electric. Pawtucket Motor Carriage Company, subsidiary of Campbell Machine Company, Pawtucket, 1897. One of a kind.

CENTRAL STEAM: Steam. Central Automobile Company, Providence, 1905-1906. Only a few produced.

CORP: Probably gasoline. Corp Brothers (bicycle manufacturers), Providence, 1905. Only a few produced.

CROSS STEAM: Steam. A. T. Cross (mechanical pencil manufacturer), Providence, 1897. Engine built by Leo F. N. Baldwin. One of a kind.

CRUICKSHANK: Steam. Cruickshank Steam Engine Works, Providence, 1896. Built delivery van for Shepard & Company, designed by Leo F. N. Baldwin.

CYCLEPLANE: Gasoline cyclecar. Cycleplane Automobile Company, Westerly, 1914. Designed by William Arthur Ball. Prototype only.

DYLANDE: Gasoline cyclecar. A. E. Dylande, Woonsocket, 1914. None produced.

ECONOMYCAR: Gasoline cyclecar. International Cyclecar Company, New York City; manufactured in Providence, 1914. About 1,000 produced.

FISKE: Probably gasoline. Fred S. Fiske, East Providence, 1905. One of a kind.

GREYHOUND: Gasoline. Greyhound Motor Car Company, New York City; manufacture in Warren planned, 1919-1920. None produced.

HERRESHOFF STEAM: Steam. Herreshoff Manufacturing Company, James and John Brown Herreshoff, Bristol, circa 1880. Coal-burning steamer; one of a kind.

HOADLEY-KNIGHT STEAM TRUCK: Steam. International Power Company, American Locomotive Company, Providence, 1900-1902.

HUGHES & ATKIN: Steam. Rhode Island Auto Carriage Company, William Hughes and Joseph W. Atkin (bicycle makers and repairers), Providence, 1899-1903. At least 14 produced.

KING STEAMER: Steam. Built for Gilbert M. King, a wealthy businessman and sportsman, by an unknown machine shop in Providence, 1904. Reputed to be the largest automobile in New England; one of a kind.

MANTON STEAM: Steam. Joseph P. Manton, Providence, 1866. Experimental coal-burning steamer; one of a kind.

MAX: Gasoline. Max Motor Car Company, Providence, 1907. No evidence that any cars were produced.

MAXWELL: Gasoline. Maxwell-Briscoe Company, Tarrytown, New York; manufactured in Pawtucket, 1905-1913, and Cranston, 1909-1913. Thousands produced.

MONAHAN: Monahan Vehicle Company, 1901-1917; Providence Body Company, 1918-1940; Providence. Built motortruck bodies but advertised as an auto manufacturer from 1909 to 1913. Unknown number of autos produced.

MONCRIEF: Steam. Pawtucket Steamboat Company, Pawtucket, 1901-1902. Designed by James A. Moncraig. Only a few produced.

NEWPORT: Gasoline. Newport Engineering Works (marine engine manufacturer), Newport, 1903-1904. A few built to order.

NOVARA: Gasoline. A. Sidney DeWolf Herreshoff, Bristol, 1917. Prototype only.

PAGE: Gasoline. Page Motor Vehicle Company, Providence, 1906-1908. Built by Victor W. Page. Unknown number produced.

ROBERTS STEAM: Steam. John H. Roberts (confectionery manufacturer), Providence, 1884. One of a kind.

SCHOLZE: Gasoline. Scholze Gas Engine Company, Edward F. Scholze (electrician), Pawtucket, 1901-1903. At least one built in 1902 for A. H. and E. H. Bliss of Attleboro, Mass.

THOMPSON: Steam. Thompson Automobile Company, J. P. Thompson and Arthur A. Morin, Providence, 1901-1907. Manufactured commercial vehicles.

VERA: Gasoline. Vera Motor Car Company, Providence, 1912. Only a few produced.

WARREN: Power source unknown. Edward C. Warren, Providence, 1900. One of a kind.

WAVERLY: Probably steam. Waverly Bicycle Company, F. C. Graves, manager, Providence, 1899. "Automotive Wagons with tops built to order."

WOONSOCKET: Gasoline. Woonsocket Napping Machinery Company, Woonsocket, 1907-1908. Unknown number produced.

Rhode Island was the home of several inventors and mechanics working to create practical motor vehicles during the last decades of the nineteenth century. The first was Joseph P. Manton, who made his fortune by founding the American Ship Windlass Company and inventing a method of raising ship anchors by steam. In 1866 he built a steam-powered automobile to win a bet with some friends: Manton had claimed that he could construct a horseless vehicle that could carry him from Providence to his summer home at Longmeadow in Warwick. Despite getting temporarily stuck in a sandy stretch of road, he won his bet. He drove his machine—which was powered by a large, coal-fired, vertical tube-boiler set at the rear—around Providence for a few months before deciding that it had no commercial practicality.²⁶

Two other early experiments with steam took place in Rhode Island in the 1880s. In 1880 Bristol's master boat-builders James and John Brown Herreshoff constructed a coal-burning steam vehicle, which they hoped the government might want for delivering mail. It made one slow trip from Bristol to Bar-

rington and was dismantled.²⁷ Another steam-powered road vehicle was constructed in 1884 by John H. Roberts, a confectionery manufacturer. Using an engine built by the Rhode Island Locomotive Works, Roberts created a large tractorlike vehicle, which he operated on the streets of Providence for about two years. His machine frightened horses and produced so many complaints that he was constantly harassed by the police. He dismantled the contraption in 1886, but not before he had raced it on the Narragansett Park track and attained a speed of 20 miles per hour. The engine and boiler were then used in a sawmill to power a buzz saw.²⁸

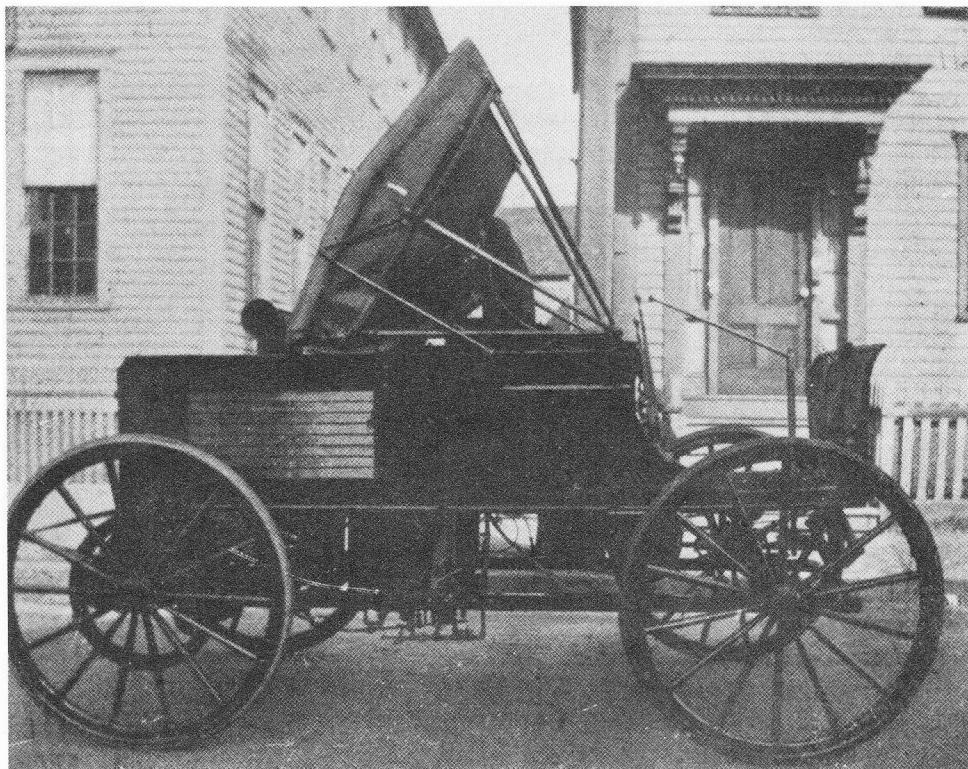
One of the earliest American inventors to experiment with internal combustion engines was East Greenwich native George B. Brayton.²⁹ A machinist and inventor, Brayton patented a petroleum-burning engine in 1872. The next year, while employed as a machinist for the Union Street Railway Company, he tried to power a horsecar with his engine, but the attempt was a failure: the engine moved the car slowly on level ground, but it could not handle any sort of grade. Brayton then built a second, larger engine, which drove a streetcar on the Cranston Street line for a few days but was still too feeble for even a slight grade. Brayton concluded that an engine powerful enough to master an incline would be so large that it would leave little room for passengers, and he abandoned his experiments with streetcars.³⁰ He did, however, continue his engine experiments while in the employ of the Exeter Machine Works in New Hampshire, and in 1876 he displayed a prototype two-cylinder model at the Centennial Exposition in Philadelphia.³¹

When the automobile age began in earnest in the mid-1890s, many local automobile makers used steam technology. This is not surprising, since Rhode Island had some of the world's major steam-engine manufacturers. Providence itself was home to the Corliss Steam Engine Company as well as a number of other

manufacturers producing large and small stationary and marine steam engines and steam locomotives.³²

Rhode Island's first automaker was Leo F. N. Baldwin. Born in Vermont in 1871, Baldwin came to Providence as a young man and served as an apprentice machinist at the Rhode Island Locomotive Works. After working for Brown and Sharpe, the Corliss Steam Engine Company, and two other steam-engine manufacturers, in 1895 he became the superintendent of the Cruickshank Engine Company, manufacturer of small marine steam engines.³³ In April 1896 the *Providence Journal of Commerce* carried the news that Cruickshank was manufacturing horseless carriages, "to go twenty miles an hour."³⁴ The *Board of Trade Journal* later claimed that

This steam car was built and owned by pencil manufacturer Alonzo T. Cross. Photo from the Providence Board of Trade Journal, June 1908. RIHS Collection (RHi X3 8045).



the Cruickshank Engine Company was the first firm in the area to hang out a sign offering "Horseless Carriages Built to Order."³⁵



Automaker Leo F. N. Baldwin drives one of his cars up College Hill in Providence. Photo from the Providence Board of Trade Journal, June 1908. RIHS Collection (RH X3 8045).

tain Street where the *Journal-Bulletin's* offices are now located. After failing to secure an adequate factory for production, he moved to Connellsville, Pennsylvania, in March 1900, where he produced the Baldwin automobile until 1901.³⁹ Altogether he built about three hundred cars there. Returning to Providence in 1901, he formed the Baldwin Motor Wagon Company, which was described as a "manufacturer of all kinds of steam automobiles, from an ordinary carriage to an omnibus."⁴⁰ That year he made three 15-passenger steam omnibuses, which were shipped to Puerto Rico. In 1902 he switched from manufacturing steamers to selling them. Calling his new endeavor the Central Automobile Exchange, he secured the Rhode Island franchise for Stanley Steamer and later added the White Steamer agency.⁴¹ However, in 1905 he accepted gasoline cars as the wave of the future and became the Providence agent for the gasoline-car-producing National Automobile Company, although he still loved steam cars and raced Stanley Steamers in competitions along the East Coast for a number of years. Ironically, in 1938 he died from injuries suffered when he dozed off at the wheel of his car on a four-lane highway and crashed into a wall near Quidnessett Memorial Cemetery in North Kingstown.⁴²

Another manufacturer of steam automobiles was the Rhode Island Auto Carriage Company, located in the Olneyville section of Providence. Its proprietors,

Baldwin recalled that he first built an automobile for a New Jersey man and then oversaw the construction of a steam-powered delivery van for the department store Shepard and Company. The appearance of the latter vehicle on Labor Day 1896 was front-page news in the *Evening Bulletin*.³⁶ Baldwin also supervised Cruickshank's production of a second truck for Shepard, this one gasoline-powered, and both trucks continued to run until the *wheels* wore out. In 1897 Baldwin made an automobile engine for pencil manufacturer Alonzo T. Cross, who constructed an experimental one-of-a-kind 2-horsepower steam car and drove it around the streets of Providence until 1903, thereby earning credit as the first owner of a Providence-made auto.³⁷ When Baldwin decided to manufacture autos on his own, he built one that passed the ultimate test for cars in those early days—it climbed Providence's College Hill.³⁸

Encouraged by his success, in 1899 Baldwin founded the Baldwin Automobile Company, situated on Foun-

William Hughes and Joseph W. Atkin, were bicycle dealers and repairers, but in 1899 they began producing a two-passenger steam-powered runabout, a no-name car that they built to order. Between then and 1902 they made at least fourteen autos, some of them at a factory that they bought from the J. J. Hill Company in Knightsville, Cranston. It is not clear how long they continued making automobiles, but their advertisement in the 1903 *Providence City Directory* ("Bicycle, Automobile & Sulky Repairing. General Machine Work & Automobile Manufs") indicates that that was still part of their business.⁴³ Hughes later became a Reo dealer and was elected to the Providence Common Council and Board of Aldermen from Olneyville from 1914 to 1926.⁴⁴

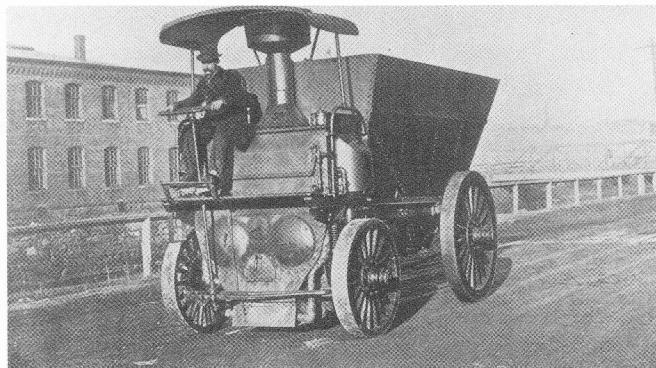
Corp Brothers, which advertised itself as an automaker in the 1905 *Providence City Directory*, was another Providence bicycle maker that turned to automobile manufacturing. At least one Corp was on the streets in 1905, since Frederick Corp, one of the brothers, registered a 7-horsepower Corp that year.⁴⁵ Other local bicycle makers and repairmen tried to keep pace with the automobile's growing popularity by expanding their service and sales to autos; for example, the Whitten Cycle Manufacturing Company, which made bicycles in 1896, transformed itself into the Whitten Motor Vehicle Company, selling only automobiles, by 1903.⁴⁶

While many early automobile makers developed from shops building and repairing small engines and bicycles, some large manufacturers sought to join the automotive enterprise as well. It is no mystery why Rhode Island—especially the Providence-Pawtucket area—produced a number of automobile manufacturers in the period from 1896 to World War I. The state was one of the nation's leading industrial powers at the end of the nineteenth century, with Providence the twentieth-largest city in the country. Textile manufacturing remained the state's leading industry, but that industry was served by manufacturers of textile machinery and machine tools. Providence's "Five Industrial Wonders of the World"—Brown and Sharpe, Nicholson File Company, American Screw Company, Gorham Manufacturing Company, and Corliss Steam Engine Company—were the world's largest factories of their kinds, and they were all in the metal trades.⁴⁷ With machine shops and foundries, rubber and glass factories, and leather goods manufacturers, Rhode Island could fabricate every part of any automobile.

In 1900 Providence's International Power Company began making large Hoadley-Knight Steam Auto-Trucks as a sideline to its manufacture of locomotives. The American Locomotive Company continued making steam trucks when it bought out International the following year. Recognizing the direction

of automobile production, however, in 1905 it established a subsidiary called the American Locomotive Automobile Company to build the Berliet, a French luxury gasoline car, under license, using the awkward name American Locomotive Motor Car for its product. Generally called the "American Berliet," this auto was manufactured from 1906 to 1908, at which time the American Locomotive Company discontinued the Berliet license and began producing its own car under the name Alco. Probably the finest automobile made in the United States prior to World War I, this big, superbly engineered automobile won the Vanderbilt Cup races in 1909 and 1910.⁴⁸ The Alco cost from \$6,000 to \$7,500, making it one of the

The Hoadley-Knight Steam Auto-Truck was manufactured by the International Power Company of Providence. Photo from the Providence Board of Trade Journal, April 1901. RIHS Collection (RH 1 X3 8046).



most expensive autos then produced. With the average annual income of a middle-class family in the first decade of the twentieth century ranging between \$900 and \$3,000, a \$7,500 automobile would cost such a family several years' worth of income—and in those days one could not buy cars on the installment plan.⁴⁹ A less expensive model of the Alco was widely used for taxis. The American Locomotive Works made Alcos until August 1913, when it abruptly ceased production after an account of its automotive division revealed that the company had lost an average of \$460 on every Alco it produced.⁵⁰

American Locomotive was by no means the only industrial firm that branched out into the automotive business. Some companies attempted to manufacture autos, some made automotive parts, and still others opened repair facilities. In May 1901 the Pawtucket Steamboat Company announced its manufacture of steam carriages, and it produced the Moncrief (named for the company's general manager, James A. Moncrief) in 1901-1902.⁵¹ Demand for the vehicle was low; in May 1905 only two Moncriefs were registered in Rhode Island, one of them owned by James A. Moncrief, Jr., and the other, a less expensive 4-horsepower model, by Charles T. Sheldon, an engine dispatcher and master mechanic for the New York, New Haven and Hartford Railroad.⁵² Another Pawtucket



This steam carriage, built by the Pawtucket Steamboat Company, had a boiler with a capacity of 7 horsepower. Photo from the Providence Board of Trade Journal, May 1901. RIHS Collection (RHi X3 6100).

firm, the textile-machinery-manufacturing James Brown Machine Corporation, offered the gasoline-powered Cameron in 1903, having been persuaded by Everett and Forrest Cameron, brothers from Massachusetts, to produce their automobile. A notice in the *Board of Trade Journal* in January 1905 boasted that the company was manufacturing one complete auto per day and that it had actually been unable to keep up with demand in 1904. The company offered two models and declared that with additional capital it expected to turn out five hundred autos in 1905.⁵³ Yet only eleven Camerons were registered by Rhode Island owners in May 1905, about 1 percent of the cars in the state.

After the James Brown Machine Corporation was sold in 1906 to owners who were not interested in automobile manufacture, the Cameron brothers migrated to Massachusetts, Connecticut, Ohio, and Michigan before going out of business in 1920.⁵⁴ In 1904 the Thornton Machinery Company began selling the Reliance, and the William A. Harris Steam Engine Company opened a department for auto repair and rebuilding and later became a dealer for Phelps Touring Car and the Mitchell.⁵⁵

"At least 100 concerns [in Providence] are interested in the automobile industry and either make the whole of the benzine buggy or send away the parts for other people to assemble," the *Board of Trade Journal* reported in 1913.⁵⁶ It was this ability to manufacture parts for automobiles that helped induce the Maxwell-Briscoe Motor Company to open two factories in the state. Production of the Maxwell began in Rhode Island when Maxwell-Briscoe expanded its production into New England in 1906. Maxwell had begun in Tarrytown, New York, in 1904, producing only ten cars that first year. By 1906 the company increased its annual production to six thousand cars, and it expanded to Chicago and Pawtucket. That year Maxwell built two thousand cars at Pawtucket's old Hope Thread mill on Division Street. The importance of this automaker to the Rhode Island economy was considerable: in addition to the five hundred skilled hands it employed in its Pawtucket plant, Maxwell bought its engines from Providence Engine Works and its gear works from Brown and Sharpe.⁵⁷ In 1909 the company expanded to a larger plant in Cranston with the purchase of a factory from the Atlantic Rubber Company.⁵⁸

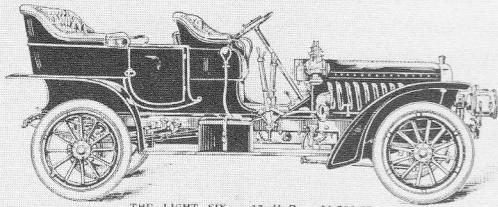
By 1908 the entire automobile industry had entered a consolidation phase. Seeking to become a dominant player in the industry, Maxwell's president attempted to create a huge auto manufacturing trust, called the United States Motor Company, which at one point "involved some 130 affiliated companies and an inflated capitalization of \$42.5 million."⁵⁹ In September 1912 the empire collapsed and went into receivership. One of those who helped to push it into bankruptcy was Brown and Sharpe, which sued for nonpayment of bills.⁶⁰ Maxwell abandoned Rhode Island in 1913 when the company underwent reorganization and moved to Detroit.

The withdrawal of Maxwell from Rhode Island was part of a general movement that saw the concentration of America's automobile industry in Michigan. The Connecticut Valley (Hartford, Connecticut, and Springfield, Massachusetts) may be regarded as the true birthplace of the American automobile industry, and New England produced some of America's earliest and best-known automobile companies, including Pope, Stanley Steamer, Stevens-Duryea, and Locomobile; but all these companies faded and failed from 1910 to the early 1920s.⁶¹ The decline and fall of auto production in Rhode Island was part of the disappearance of car manufacturing throughout New England. After the end of Alco and Maxwell in 1913, only the little cyclecars of Economycar ever reached production in Rhode Island. The last company to seriously consider making cars in the state was the Greyhound Motors Corporation in 1919-1920, but nothing came of that idea.



The companies thus far mentioned do not exhaust the list of firms with plans for producing automobiles in Rhode Island. Grand proposals and projects

THE STEVENS-DURYEA AUTOMOBILE



THE LIGHT SIX. 35 H. P. \$3,500.00

Is the one you want to buy if you want full value for your money for the following good reasons: Slight depreciation, because we do not change models every year. Lasting service, because of our Unit Power Plant and Three Point Support. Ability to get parts promptly, because we carry a full supply at all times. Freedom from tire trouble, because our cars weigh less per horsepower than most others. All Good and Sufficient reasons why you should select a Stevens-Duryea.

SNOWAUTOMOBILE COMPANY

DISTRIBUTERS

27 WASHINGTON ST.

PROVIDENCE, R. I.

Advertisement in the Providence Board of Trade Journal, June 1908. RIHS Collection (RH 1 X3 8069).

poured forth from a number of companies that ultimately built few cars or none at all. For example, in 1897 the Campbell Machine Company of Pawtucket produced for Dr. Julian A. Chase an electric automobile that could reach speeds of five miles an hour, but after making that one vehicle the company decided to abandon auto making.⁶² In 1907 the Max Motor Car Company opened an office and issued advertisements, but it never produced a car.⁶³ Likewise, little or nothing came of the plans for the Page, Vera, Greyhound, Central Steamer, or Woonsocket.⁶⁴ Cyclecars—expensive, lightweight automobiles that used the technology of the motorcycle—had a brief

play in 1914; three companies announced their intention to build them, but only the Economycar, manufactured by the International Cyclecar Company in Providence, was actually produced.⁶⁵ Neither the Cycleplane or the Dylande ever got on the road.⁶⁶

With over six hundred companies manufacturing cars in the United States prior to 1910,⁶⁷ the variety of automobiles to be seen in those early days was quite astonishing. In May 1905 Rhode Island drivers registered ninety different makes of autos, though many of these were represented by only one or two vehicles. There was, for example, only one Acme, one Argyle, one Baker, one Baldwin, two Buffalos, two Buffums, one Canada Quadacycle, one Century, one Cleveland, one Conrad, two Coverts, and two Daimlers;⁶⁸ there was one FIAT, one Friedman, one Hautier, one Hotchkiss, one Jones-Corbin, and so forth. Many of the European-made cars were registered to owners in Newport, while little electric Waverlys, Stanley Steamers, Autocars, Knoxes, Cadillacs, and Oldsmobiles were common on the streets of Providence, Pawtucket, and Central Falls.⁶⁹

A multitude of products and services sprang into existence to serve the automobile. The first auto garage in Providence was opened in 1898 at the corner of West Exchange and Aborn streets by H. G. Martin and B. S. Clark, who advertised that they could repair and store automobiles. In fact, they had storage space for only a single car at first, but they soon expanded to 12 and then to 150 spaces.⁷⁰ In 1900 they also began selling Locomobiles and DeDions. Two years later Clark struck out on his own to sell used cars and publish the *Rhode Island Secondhand Automobile Register*. When the state began requiring number plates on all motor vehicles and motorcycles in 1904, Clark was the official distributor of those plates, and he began publishing a series of booklets, called *Who Is It?*, that listed each plate number with the owner's name and address, the kind of vehicle, and its horsepower.⁷¹

The number of repair and service garages quickly multiplied. Many of these provided parking and storage space, for parking places downtown were already at a premium. Some garages advertised that they could charge electric cars, a service also offered by the Narragansett Electric Company.⁷² H. G. Martin and

B. S. Clark may have been Rhode Island's first automobile dealers, but they were soon joined by dozens more. By 1908 Providence had 35 dealers, of whom all except one sold only gasoline cars; the single exception, of course, was Leo Baldwin, but he had become an agent for the gasoline-powered National as well. In the entire state there were now 104 automobile dealers.⁷³ There were, in addition, a rapidly growing number of service stations, garages, tire stores, car rental offices, and stores and shops selling automobile monograms, clothing, cushions, covers, and tops.⁷⁴



H.G. Martin and Company, at the corner of West Exchange and Aborn streets, was the first automobile garage in Providence. Photo from the Providence Board of Trade Journal, April 1901. RIHS Collection (RHi X3 8047).

It is hard to know exactly how many automobiles there were in Rhode Island at any time prior to 1904, since auto registration did not begin until June of that year. However, the U.S. Department of Commerce estimated the number in 1900 at 130, placing Rhode Island fifteenth among the states in the category of auto ownership.⁷⁵ By any count, the numbers shot upward. The first registration list issued in August 1904 included 767 automobiles and 117 motorcycles; by 1910 the number of autos had reached 5,647.⁷⁶

Such a volume of traffic demanded better roads, a cause that had earlier been championed by bicycle enthusiasts. In 1889 the *Memorial of the League of American Wheelmen, Rhode Island Division, to the People of Rhode Island on the Improvement of Highways* pointed out the sorry condition of the highways in the state and presented a list of the number of miles of macadamized roads in the various towns. According to that list, most of the towns—including Warwick, Barrington, Warren, and all those in the rural western part of the state—did not have a single mile of paved road. North Smithfield and Middletown had one mile each, and Cranston had only four miles.



Brown Street, Wickford, circa 1905. Silver gelatin print. RIHS Collection (RHi X3 8041).

In 1892 the General Assembly appointed a committee to examine the state's public highways and to make recommendations for improving them.⁷⁷ Not surprisingly, the committee found that the condition of the highways was poor. In response, in May 1895 the Assembly adopted an act creating the office of state highway commissioner and authorizing the commissioner to construct a sample half-mile section of macadamized road in any town that requested it, "to the end that the advantages of such road-making may become known to the people of such town."⁷⁸ But the tax-paying public in the rural towns thought that the project was too costly, so only twelve sample sections were built. Reflecting this lukewarm attitude toward highway improvement, in 1899 the legislature abolished the office of highway commissioner by repealing its act of 1895.⁷⁹ Thus the state faltered in its first steps toward improving its highways; but the proliferation of automobiles and the national trend toward better roads could not be resisted for long.

In April 1902 the General Assembly passed an act creating the State Board of Public Roads.⁸⁰ Acting on a recommendation from the new board, in 1903 the legislature established a state highway system consisting of the fifteen most important through roads in Rhode Island. Work on this system began that same year; and in 1906, 1909, and 1912 the Assembly authorized the issuance of highway construction bonds amounting to \$1,800,000.⁸¹ A major new public expense had arisen, and it had to be paid for. To finance its work on roads and bridges, the state levied assessments on the towns, increasing the towns' property-tax rates.⁸² The new demands led to other new taxes as well, beginning with auto registration fees and leading to a tax on gasoline, which started at one cent a gallon in 1925.⁸³

While legislation regarding highways, registration, taxes, licenses, restrictions, and regulations became part of the regular agenda of the General Assembly, the general public saw the appearance of the automobile in popular culture. Magazines regularly featured automobiling on their covers and in their pages.⁸⁴ Popular music from 1896 to World War I included at least fifty-four songs that referred to automobiles, with twelve of these (e.g., "In My Merry Oldsmobile," a hit in 1905) mentioning a particular make.⁸⁵ The transformation of American courting practices in the twentieth century is traced in a recent book with the delightfully apt title *From Front Porch to Back Seat*.⁸⁶ To judge solely by the

sheet music of the early years of the automobile age, the auto was changing the venue of romance; what else can one make of a song entitled "Love in an Automobile" (1897), or "Otto, You Ought to Take Me in Your Auto" (1905), or "On the Old Back Seat of the Henry Ford" (1916)? Suggesting another significant development, a half dozen songs like "My Auto Lady" (1901) and "Motor Girl" (1909) focused on the independence of women in their cars.

"Automobiling," "motor gypsying," and "auto camping" became part of the language as auto clubs, newspapers, travel writers, and camping-goods manufacturers promoted the personal freedom that the automobile offered.⁸⁷ Dining spots and resort areas sought to attract the increasing automobile traffic. In Cranston, Rhodes-on-the-Pawtuxet called itself "The Autoist's Mecca," and the Elm Cottage Inn at Narragansett Pier promised "Automobile Parties Specially Cared For."⁸⁸ In Massachusetts the Walpole Inn noted that it was only twenty-



Car camping was a popular activity spawned by the rise of the automobile. Silver gelatin print, circa 1905. RIHS Collection (RH X3 8042).

six miles from Providence and announced, "We cater to the automobile trade exclusively."⁸⁹ Indeed, a whole range of products catered to the motoring public, and some advertisers stretched their appeal to motorists. The What Cheer Laundry, for example, declared that "You Can't Drive a Car with any degree of comfort when your collar is chafing your neck, and making you cross and irritable." It promised to launder shirts and collars to provide comfort so one could "get the full measure of enjoyment from automobiling."⁹⁰

On the other hand, magazines and newspapers published a steady stream of articles decrying the new machines and the havoc they wrought. Describing



Advertisement in the Providence Board of Trade Journal, June 1908. RIHS Collection (RHi X3 8070).

"this war between the automobile and the rest of the world," one editorial claimed that motorists believe they are entitled to "not merely the right of way, but all the way there is."⁹¹ In 1905 a physician writing in the *Saturday Evening Post* warned of the automobile's harmful effects on children "who are being literally whirled through the world at an age when their nervous systems need quiet and normal development," and he declared that the "speed mania" was causing nervous tension and neurosis.⁹² There was no ignoring the fact that the number of automobile accidents, injuries, and deaths was climbing steadily. Many casualties were caused by frightened runaway horses,⁹³ but unregulated drivers and driving were increasing the toll. In 1912 the State Board of Public Roads urged the General Assembly to require horse-drawn vehicles to have lights the way autos did, since many highway accidents were caused by automobiles colliding with unlighted horse-drawn vehicles.⁹⁴ The board's next annual report for the first time listed injuries and deaths related to automobiles and trucks. In 1912 Rhode Island suffered 16 dead and 185 injured in automotive accidents; the following year saw 34 killed and 491 injured.⁹⁵

The joy and the sorrow of the automobile were both clearly illustrated in the Thanksgiving issue of the *Providence Journal* in 1907. The whole state was in an uproar over the death of a child—the second in one week—who had been killed by a speeding automobile. A front-page editorial cartoon showed a sorrowing mother holding her dead son in her lap, with a ghostly apparition of a speeding car bearing down on them in the background. In the paper's special Thanksgiving section, however, was an even larger illustration of a happy family arriving by auto at the little country home of the children's grandparents to celebrate the holiday.⁹⁶

The death of the child in Pawtuxet spurred the General Assembly to set the first automobile speed limits in Rhode Island. Automobilists often tended to act as if they were a persecuted breed, and for years they had fought nearly all attempts to restrict them in the use of their machines, but during that week in November 1907 the public's anger was overwhelming. Even the Rhode Island Automobile Club felt impelled to speak out. "The speeding of automobiles in city streets or wherever there are people passing to and fro is an outrage," said John Shepard on behalf of the club. "Everybody realizes that it has got to stop.... No automobile should be allowed to go so fast that it cannot be stopped within a quarter of its length. The place for racing chauffeurs is in a cell."⁹⁷

On 15 April 1908, during its next session, the General Assembly passed a bill setting the maximum speed limit at 20 miles an hour in rural areas, 15 miles an hour in suburban areas, and 10 miles an hour in thickly settled areas. In addition, each operator now had to have a driver's license; driving while intoxicated was made illegal; auto registration fees were scaled according to a vehicle's horsepower; and registration became annual.⁹⁸ While most people thought that 10 miles an hour was still too fast for town driving, the auto club felt that the bill went too far. "It is an outrage," declared Henry Lippitt. "The speed limit is absurd. I know that a man cannot drive from here to Boston without going more than 20 miles per hour."⁹⁹ Automobilists immediately set out to change the law, and the following month the speed limits were revised upward—the rural speed limit to 25 miles an hour and the town speed limit to 15 miles an hour.¹⁰⁰

How was the legislature persuaded to change its mind so quickly? An answer is suggested if one looks at who owned the automobiles.¹⁰¹ To put it simply, if all the owners parked their cars in one lot, they could have had a convention of

Republicans or a lodge meeting of Masons. Enough former and present members of the General Assembly would have been there to hold a rump session of the legislature. If an anarchist threw a bomb into that lot, many of Rhode Island's leading textile and industrial leaders might have been blown up, although enough car-owning physicians might have survived to care for the casualties. In short, the automobilists of 1905-1908 were mostly important people. It was not until the appearance of Henry Ford's Model T in October 1908 that the auto was brought within the reach of most Americans. The number of automobile owners in Rhode Island subsequently skyrocketed from 3,171 in 1908 to 35,124 in 1919.¹⁰²

Some turn-of-the-century commentators and enthusiasts touted the automobile as an answer to urban noise, pollution, and traffic congestion. "It is hardly possible to conceive the appearance of a crowded wholesale street in the day of the automatic vehicle," wrote journalist Ray Stannard Baker in 1899. "In the first place, it will be almost as quiet as a country lane—all the crash of horses' hoofs and the rumble of steel tires will be gone." Moreover, the streets would be



As the number of automobiles increased in Rhode Island, so too did the number of accidents, such as this one, circa 1919. Silver gelatin print. RIHS Collection (RHi X3 8039).

cleaner, since it was estimated that two-thirds of all street dirt was directly traceable to horses.¹⁰³ In 1901 H. G. Wells predicted that soon only "soft-tired conveyances" would travel the highways and that the "battering horseshoes, perpetual filth of horse traffic, and the clumsy wheels of laden carts" would be banished.¹⁰⁴

The reality was rather different. Far from being the solution to noise, pollution, and traffic congestion, the automobile compounded these problems, with speeding drivers proving an even greater menace than runaway horses. In August 1910 Providence instituted one-way traffic on downtown Westminster and Weybosset streets and placed policemen at twenty-six busy intersections in an attempt to cope with the increased traffic volume and congestion.¹⁰⁵ Instead of the road dirt of horse-drawn vehicles, the air was now filled with "choking clouds of smoke" and the roar of unmuffled engines. "The open muffler is an abomination and should not exist," said the *Providence Board of Trade*



Midday on Exchange Place, Providence, 1908.
Silver gelatin print. RIHS Collection (RH_i X3 8071).

View of Market Square, Providence, from the Merchants Bank Building on Westminster Street, 1907. Halftone print. RIHS Collection (RH_i X3 8040).



Journal, but police rarely did anything about it.¹⁰⁶ Furthermore, motor vehicles had a calamitous impact on the interurban and street railway systems. In 1908-1909 the state's trolley systems were flourishing, but by 1912 "all tramway companies had begun to measure the effect of automobile competition in reduced earnings."¹⁰⁷ People increasingly commuted to work by automobile, and by using their autos for pleasure they also deprived the streetcar systems of weekend fares to "trolley parks" like Rocky Point and Crescent Park. One no longer had to live within walking distance of a streetcar line, and people could go anywhere for amusement.¹⁰⁸

In 1919 the Rhode Island Company, which had carried eighty million trolley passengers a year prior to 1910, was forced into receivership.¹⁰⁹ A special commission of the General Assembly, having investigated the company's financial condition and operations, had reported in March 1918 that "for several years the property had been operated at a heavy loss."¹¹⁰ All of the state's street railway systems and interurban lines disappeared in the 1920s, with buses replacing the trolleys on some of the routes. In addition, nearly all of the branch railroads were superseded by trucks.¹¹¹ Automobiles, trucks, and buses had seized the imagination of the public and captured the cities, and they were sweeping away the opposition.

At the end of the nineteenth century many urban reformers were urging decentralization of America's cities, and street railway systems were originally seen as a way to accomplish that aim. However, the sheer arrogance, corruption, and disregard for public opinion that the traction companies exhibited provoked

outrage and political reform efforts all across the nation. An example of contempt for public law and sentiment was provided by the Rhode Island Company, which owned electric and gas as well as street railway companies. In Providence in 1902 the Rhode Island Company disregarded the state's popular ten-hour-workday law, provoked the carmen's union into a strike, and brazenly broke the strike with police and imported strikebreakers. Then the company used its political muscle to get the law itself repealed by the General Assembly.¹¹² Actions such as these turned the public against traction and utility companies, but until the auto-

mobile came along, there was little alternative to the streetcars. The automobile not only accelerated the decentralization of the cities but also helped to break the streetcar companies. At the time it seemed like a good thing.¹¹³



Once the American public had begun its love affair with the automobile, it seemed willing to pay any price and accept any risks for the unprecedented mobility and freedom that the car brought. Back in the first decade of the twentieth century, when automobiles were beyond the income of most Americans, one newspaper commentator predicted that "in less than fifty years from now, the working man, the mechanic and the laborers will go to their work from their cottages in the country in automobiles."¹¹⁴ The future arrived sooner than the writer imagined.

Olneyville Square, Providence, circa 1930.
Silver gelatin print. RIHS Collection (RHi X3
8029).



Notes

1. James J. Flink, *The Automobile Age* (Cambridge: MIT Press, 1988), 2.
2. Ibid., 4.
3. Ibid., 5; John B. Rae, *The American Automobile: A Brief History* (Chicago: University of Chicago Press, 1965), 4-7; Rae, *The American Automobile Industry* (Boston: G. K. Hall & Co., 1984), 5-6; Jean-Pierre Bardou et al., *The American Revolution: The Impact of an Industry* (Chapel Hill: University of North Carolina Press, 1982), 6-7.
4. See, for example, "Roads and Road Improvement," *Memorial of the League of American Wheelmen, Rhode Island Division, to the People of Rhode Island on the Improvement of Highways* (n.p., 1888/1889). (Copy at the Rhode Island Historical Society [RIHS]).
5. For example, Opel in Germany; Clément, Darracq, and Peugeot in France; Humber, Morris, and Rover in Great Britain; Pope, Peerless, Rambler, Winton, and Willys in the United States. Other early automobile makers began as bicycle mechanics, such as Charles and Frank Duryea, who built the first successful American gasoline car in 1893, and William Knudsen, later president of General Motors. See Flink, *The Automobile Age*, 5-6.
6. Ibid., 6.
7. James J. Flink, *America Adopts the Automobile, 1895-1910* (Cambridge: MIT Press, 1970), 17-25.
8. "First Track Race Was Held in '96 at Narragansett Park," *Providence Journal*, 16 Feb. 1930, auto section, D-2, p. 1. See also Flink, *America Adopts the Automobile*, 42.
9. "The Providence Race," *The Motocycle*, September 1896, 14-15. Also see the stories about the races and the storm in the *Providence Evening Bulletin*, 8, 9, 10 September 1896.
10. "The Rhode Island Automobile Club," *Board of Trade Journal* 20 (June 1908), 232-33.
11. Ibid., 233. See also *Providence Journal Almanac*, 1902, p. 81.
12. See section on automobiles in the *Providence Journal Almanac*, 1901-1905.
13. *Providence Journal Almanac*, 1906, p. 94.
14. *Newport Mercury*, 9 Sept. 1899, p. 1; 9 June 1900, pp. 1, 4; 16 June 1900, p. 8; 4 Aug. 1900, p. 1; 25 Aug. 1900, p. 1; 8 Sept. 1900, p. 1. See also Jay Rice Moody, "Here Comes the Horseless Carriage," *Rhode Island Yearbook*, 1969 (Providence: Rhode Island Yearbook Foundation, 1969), H-136.
15. *Newport Mercury*, 9 June 1900, p. 4.
16. See *Newport Social Index, Season of 1908* (Newport: Social Index Publishing Company, 1908). (Copy at RIHS.)
17. Production figures for 1900: 1,681 steam, 1,575 electric, 936 gasoline. Flink, *America Adopts the Automobile*, 234. See also "Electric Cars," *Encyclopedia of American Business History and Biography: The Automobile Industry, 1896-1920*, ed. George S. May (New York: Facts on File, 1989), 171-72.
18. Campbell was Rhode Island's only electric-car maker. In 1897 the Campbell Machine Company of Pawtucket created the Pawtucket Motor Carriage Company to produce an electric auto based on a design by Harry E. Dey of New York. At least one car was sold, bought by Dr. Julian A. Chase. See Beverly Rae Kimes and Henry Austin Clark, Jr., *Standard Catalogue of American Cars, 1805-1942*, 2nd ed. (Iola, Wis.: Kraus Publications, 1989), 238, 1117.
19. The 1912 Cadillac was the first gasoline car to have a practical self-starter.
20. Many automobile garages, and even the Narragansett Electric Lighting Company, established recharging stations for electric automobiles, but electric cars had generally faded from the scene by 1910. Electric-powered trucks, however, continued in city use. See H. H. Skinner, "The Field of the Electric Vehicle," *Board of Trade Journal* 25 (July 1913): 254-57. The Narragansett Electric Lighting Company ran advertisements declaring that "The Day of the ELECTRIC Truck has Arrived!" Ibid. 25 (March 1913): 103; ibid. 25 (April 1913): 143.
21. *Who Is It?*, May 1905 (published by B. S. Clarke, Providence; copies of booklets in this series at RIHS); *Providence City Directory*, 1905. Waverlys constituted 58 percent of the electric cars; another 27 percent were Columbias, which were especially favored by the wealthy summer people in Newport.
22. Flink, *The Automobile Age*, 6. At least three Rhode Islanders concocted steam-powered automobiles before 1890.
23. Flink, *America Adopts the Automobile*, 236. Locomobile alone built nearly 5,000 of the 22,000 automobiles made in the United States from 1899 to 1902.
24. Despite having the best-selling automobile in the country in 1901, Locomobile switched entirely to the production of gasoline autos in 1902, and White switched from steamers in 1911. Stanley continued until 1924, but nearly all other steam car companies were gone by World War I. George S. May, "Stanley Motor Carriage Company," *Encyclopedia of American Business History*, 423-25; James M. Laux, "Steam Carriages," *ibid.*, 426-28. Public preference for the gasoline car was signaled with the introduction of the "curved-dash" Oldsmobile in 1901, the first mass-produced car in the world. Selling for \$650, it was the most popular American car from 1901 to 1904. Flink, *America Adopts the Automobile*, 40.
25. Flink, *America Adopts the Automobile*, 234-35. The Rhode Island figure was 65 percent of all registered automobiles.
26. "Steam Buggy Invented Here, Forerunner of Modern Auto," *Providence Sunday Journal*, 17 Jan. 1932, auto section, p. 5. Joseph P. Manton was born in Providence on 10 Nov. 1830. He served in the First Rhode Island Regiment in the Civil War and was nominated for the Congressional Medal of Honor for bravery at the Battle of Bull Run. He founded the American Ship Windlass Company in 1867 and was a co-inventor of the Babcock & Wilcox boiler and steam engine. In his later years he was the manager of the Manton Patents Company, formed to oversee the use of his thirty-two patents. He died in his daughter's home in Providence on 1 Oct. 1912. Obituary, *Providence Daily Journal*, 16 Oct. 1912, p. 4.
27. Letter from Michael J. Pesare (associate director, Herreshoff Marine Museum) to author, 15 Dec. 1993. See also Kimes and Clark, *Standard Catalogue of American Cars*, 639. James Herreshoff experimented with a charcoal-burning hot-air-power bicycle as early as 1872, but it proved to be impractical. "James Herreshoff Caught Fire," *Herreshoff Marine Museum Chronicle* 11 (Spring 1984): 3. In 1908 James Herreshoff, son of Nathanael Green Herreshoff, built the Novara in 1916. Designed as a racy sports car, it was to cost \$2,750. The United States entered war in 1917, and Herreshoff's partner Gorham N. Thurber, was killed in an automobile accident; consequently the Novara never went into production. Carlton J. Pinheiro, "The Novara," *Herreshoff Marine Museum Chronicle*

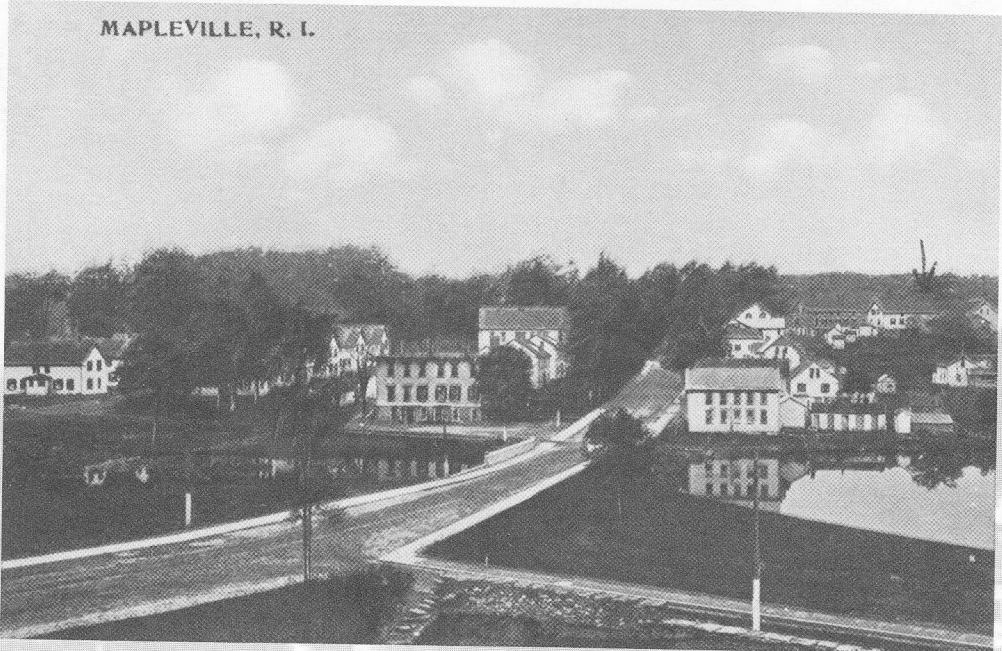
- 11 (Fall 1984): 3. See also Kimes and Clarke, *Standard Catalogue of American Cars*, 1006.
28. Providence *Evening Bulletin*, 30 Nov. 1900, p. 5. See also Kimes and Clark, *Standard Catalogue of American Cars*, 1255. John Hopkinson Roberts (5 Apr. 1840-26 Nov. 1899) came to Rhode Island in 1873 and had a confectionery factory on Fountain Street in Providence. Alfred M. Williams and William F. Blanding, *Men of Progress* (Boston: New England Magazine, 1896), 65; *Providence City Directory*, 1884, 1894, 1899; Death Register, Providence, 1899, Rhode Island State Archives.
29. Brayton was born in East Greenwich in 1839. His father was a textile mill superintendent and an inventor of improvements for looms. Trained as a mechanic and machinist, at an early age Brayton developed a breech-loading gun and a tank riveter. He later invented an improved sectional boiler. He married in Providence in 1864 and died in 1892. See James Wren, "Brayton Engines," *Encyclopedia of American Business History and Biography*, 47; "The Brayton Engine," *Scientific American* 36 (13 Jan. 1877): 19-20. Also see Flink, *The Automobile Age*, 51.
30. W. W. Whitten, "The Automobile in Providence," *Board of Trade Journal* 20 (June 1908): 228-29; "First Gas-Driven Engine Was Made Here," *ibid.* 35 (November 1923): 593-94; Rae, *The American Automobile*, 4; Rae, *The American Automobile Industry*, 7.
31. After seeing Brayton's engine at Philadelphia, the wily patent lawyer George B. Selden eventually secured an American patent on the internal combustion engine, claiming that he had invented it!
32. For example, Rhode Island Locomotive Works, Providence Steam Engine Company, W. A. Harris Steam Engine Company, Cruickshank Engine Company.
33. *Providence Journal of Commerce* 3 (November 1895): 33; *ibid.* 4 (January 1896): 20.
34. "Horseless Carriages: They Are Being Built in Providence by the Cruickshank Engine Works, to go Twenty Miles an Hour," *Providence Journal of Commerce* 4 (April 1896): 50-51.
35. "Central Automobile Exchange," *Board of Trade Journal* 20 (June 1908): 240.
36. "Shepard Company's Horseless Carriage," *Providence Evening Bulletin*, 8 Sept. 1896, p. 1. Baldwin intended to drive the wagon out to Narragansett Park to show it off during the road races at the state fair, but the hurricane made that impossible.
37. "A. T. Cross Steam Carriage," *Providence Journal of Commerce* 6 (April 1898): 52. See also Kimes and Clark, *Standard Catalogue of American Cars*, 378. The chassis was assembled in his mechanical-pencil factory; the body was made by a Providence carriage maker, H. H. Howe Company; the engine came from Cruickshank Engine Works. "Alonzo T. Cross . . . Owner of First Providence Made Auto," *Providence Journal*, 28 Oct. 1922, p. 2. Cross was born in Birmingham, England, in 1846 and died in North Kingstown on 27 Oct. 1922.
38. It is unclear exactly when Baldwin conquered College Hill, although an article in 1915, accompanied by a photograph showing him ascending the hill, said that the feat occurred in 1896, and Baldwin himself later repeated that date to the *Providence Journal*. *Board of Trade Journal* 27 (1915): 433; *Providence Sunday Journal*, 23 Feb. 1936, sec. VII-2, p. 8. However, not a word of the accomplishment appeared in the newspapers in 1896 or 1897, when everything else about local automobiles received front-page coverage. It probably took place in 1899, when he decided to form the Baldwin Automobile Company. See "Baldwin Automobile Co.," *Board of Trade Journal* 11 (November 1899): 386-87. In order to make the climb, Baldwin got up a head of steam at the foot of the hill, then made a dash up to Benefit Street, where he paused to build up steam again before continuing on to Prospect Street. See "Steam Buggy Invented Here." Conquering College Hill became part of the advertising for various cars; for example, the Phelps Touring Car "Climbs College Hill easily with five passengers." *Who Is It?*, May 1905. Ford boasted "College Hill in the high gear." *Who Is It?*, October 1909.
39. *Board of Trade Journal* 12 (March 1900): 120; *ibid.* 12 (July 1900): 312. See also Kimes and Clark, *Standard Catalogue of American Cars*, 95-96, which says that Baldwin sold the rights to his car to the group in Connellsburg. The *Board of Trade Journal* said that Baldwin and a number of Rhode Island machinists went to Connellsburg to make the car. In any case, the Connellsburg effort went bankrupt by early 1901.
40. *Biographical History of Manufacturers and Businessmen in Rhode Island*, ed. Joseph D. Hall (Providence: J. D. Hall, 1901), 232. See also "Central Automobile Exchange," *Board of Trade Journal* 20 (June 1908): 240.
41. Kimes and Clark, *Standard Catalogue of American Cars*, 253, lists a Central Automobile Company of Providence (1905-1906), which reported that it had some undeveloped plans to produce cars powered by a European-built rotary steam engine. "The expectation was for the marketing of 100 cars during the 1906 season, but most probably many fewer than that were built before this venture went under." Despite the name of the company and the product (a steam car), there is nothing to suggest that Baldwin was involved.
42. *Providence Journal*, 25 July 1938, p. 1.
43. Another company that went from making and repairing small engines to building a few no-name gas buggies in 1903-1904 was the Newport Engineering Works of A. Livingston Mason and his son Earl. See Kimes and Clark, *Standard Catalogue of American Cars*, 1001; *Who Is It?*, August 1904, p. 14. Possibly some of the fourteen no-name automobiles on the May 1905 registration list were from these two little companies.
44. "Steam Buggy Invented Here"; Kimes and Clark, *Standard Catalogue of American Cars*, 718. Hughes was born in England in 1863, emigrated to America in 1882, and worked in the Atlantic Mills for twelve years before opening his bicycle and sporting goods shop in 1896. He was the Republican candidate for mayor of Providence in 1926 but was "counted out" by the Board of Canvassers sixteen days after having apparently won the office. See obituary, *Providence Journal*, 3 Oct. 1951, p. 16, and the biographical sketch in Thomas Bicknell, *The History of the State of Rhode Island and Providence Plantations*, (New York: American Historical Society, 1920), 5:25.
45. *Providence City Directory*, 1905; *Who Is It?*, May 1905. There is no indication of the type of automobile the Corps made, but by then it was probably a gasoline car.
46. See "The Whitten Motor Vehicle Co.," *Board of Trade Journal* 20 (June 1908): 236. Also, in 1899 the Waverly Bicycle Company on Mathewson Street advertised "Automobile Wagons With Tops Built to Order" in *Catholic Bishops and Archbishops of America* (Providence: John W. Kirwin, 1899), 31.

Notes continued

47. George H. Kellner and J. Stanley Lemons, *Rhode Island: The Independent State* (Woodland Hills, Calif.: Windsor Publications, 1982), 67-68.
48. Beverly Rae Kimes, "The Mighty Alco: A History," *Automobile Quarterly* 11 (Second Quarter, 1973): 206-21. Also see Kimes and Clark, *Standard Catalogue of American Cars*, 22, 36.
49. For income statistics, see Nell Painter, *Standing at Armageddon: The United States, 1877-1919* (New York: W. W. Norton Company, 1987), xxiii-xxiv. One typically put 20 percent down to order a car and paid the remainder on delivery.
50. *New York Times*, 22 Aug. 1913, p. 1. Also see Kimes, "The Mighty Alco," 218-19; *The Complete Encyclopedia of Motorcars, 1885 to the Present*, ed. G. N. Georgano (New York: E. P. Dutton & Co., 1973), 81-82, 136-37.
51. "Steam Carriage of the Pawtucket Steamboat Co.," *Journal of Commerce* 13 (May 1901): 184; also see Kimes and Clark, *Standard Catalogue of American Cars*, 949, 1117.
52. *Who Is It?*, May 1905; *Providence City Directory*, 1904, 1905.
53. *Board of Trade Journal* 17 (January 1905): 22.
54. Kimes and Clark, *Standard Catalogue of American Cars*, 236-37.
55. *Who Is It?*, June 1904, May 1905, May 1908.
56. *Board of Trade Journal* 25 (special number, 1913): 5.
57. *Board of Trade Journal* 18 (February 1906): 69; 19 (January 1907): 19.
58. *Board of Trade Journal* 21 (July 1909): 392; *Providence Daily Journal*, 21 July 1909, p. 14.
59. Flink, *The Automobile Age*, 63.
60. *Providence Daily Journal*, 13 Jan. 1913, p. 5.
61. On the rise of Detroit and why the industry concentrated there, see John B. Rae, *American Automobile Manufacturers: The First Forty Years* (Philadelphia: Chilton Company, 1959), 58-60. Also see Rae, "Why Michigan?" in *The Automobile and American Culture*, ed. David L. Lewis and Laurence Goldstein (Ann Arbor: University of Michigan Press, 1983), 1-9.
62. Dr. Chase, an auto enthusiast, was the first president of the Rhode Island Automobile Club, later the president of the American Automobile Association, and an organizer and president of the United States Automobile Company of Attleboro, Massachusetts. Obituary, Providence *Evening Bulletin*, 13 Aug. 1935, p. 5. See also Kimes and Clark, *Standard Catalogue of American Cars*, 238, 1442.
63. *Providence City Directory*, 1906, 1907. Offices were at 13 Dorrance Street. Also see Kimes and Clark, *Standard Catalogue of American Cars*, 899.
64. Kimes and Clark, *Standard Catalogue of American Cars*, 253, 632, 1101, 1451, 1520. See also Frank C. Derato, *Victor W. Pagé: Automotive and Aviation Pioneer* (Norwalk, Conn.: Cranberry Publications, 1991), 10-29.
65. The Economycar weighed only four hundred pounds and cost \$385. The two passengers rode in tandem. Kimes and Clark, *Standard Catalogue of American Cars*, 495.
66. "Westerly Has Auto Industry Manufacturing Cycleplane Car," *Westerly Sun*, 31 July 1914, p. 8; "Join with Welding Company," *ibid.*, 4 Sept. 1914, p. 8; Kimes and Clark, *Standard Catalogue of American Cars*, 393, 488.
67. Flink, *America Adopts the Automobile*, 57.
68. Reginald Vanderbilt of Newport owned both of the Daimlers. One had a 20-horsepower engine; the other had an engine of 40 horsepower.
69. See *Who Is It?*, May 1905.
70. "H. G. Martin & Co," *Journal of Commerce* 13 (April 1901), 139-40. Also see their advertisement in *Who Is It?*, May 1905, opposite page 1.
71. "B. S. Clark, 'Who Is It?'," *Board of Trade Journal* 20 (June 1908): 240.
72. See advertisements in the *Providence City Directory*, 1900-1906, and *Who Is It?*, 1908-1910.
73. *Who Is It?*, May 1908. Also see Whitten, "The Automobile in Providence," 227. Perhaps the most unusual dealership was the Aetna Bottle & Stopper Company, 49 Peck Street, Providence, which began selling Buicks in 1907. See *Who Is It?*, March 1907.
74. See the numerous advertisements in the *Providence City Directory* and *Who Is It?* for 1907-1910.
75. Flink, *America Adopts the Automobile*, 75-76.
76. *Who Is It?*, August 1904, August 1910.
77. Bicknell, *History of Rhode Island*, 2:776.
78. Quotation from *Public Laws of Rhode Island*, 1897, chap. 467.
79. Bicknell, *History of Rhode Island*, 2:777.
80. See *Public Laws of Rhode Island*, January session, 1902, chap. 982, pp. 54-58.
81. See *Public Laws of Rhode Island*, January session, 1906, chap. 1312, p. 27; January session, 1909, chap. 372, p. 6; January session, 1912, chap. 771, p. 258.
82. For example, *General Laws*, January session, 1909, chap. 84, assessed the towns six cents per one hundred dollars of ratable property for roads.
83. *Public Laws of Rhode Island*, January session, 1925, chap. 679.
84. For example, see *Saturday Evening Post*, *Collier's*, *Harper's Weekly*, *Woman's Home Companion*, *Puck*, *Popular Mechanics*, *Review of Reviews*, *Muncey Magazine*.
85. See Anna Marie Guiheen and Marie-R. A. Pafik, *The Sheet Music Reference and Price Guide* (Paducah, Ky: Collector Books, 1992), 289-90.
86. Beth L. Bailey, *From Front Porch to Back Seat: Courtship in Twentieth-Century America* (Baltimore: Johns Hopkins Press, 1989). See also David L. Lewis, "Sex and the Automobile: From Rumble Seats to Rockin' Van," in *The Automobile and American Culture*, 123-33.
87. Warren James Belasco, *Americans on the Road: From Autocamp to Motel, 1910-1945* (Cambridge: MIT Press, 1979). See also Flink, *America Adopts the Automobile*, 104-12.
88. *Who Is It?*, August 1904, pp. 40, 26.
89. *Who Is It?*, May 1912, p. 130.
90. *Who Is It?*, May 1911, p. 28.
91. Quoted in Ray Brosseau and Ralph E. Andrist, *Looking Forward: Life in the Twentieth Century as Predicted in the Pages of American Magazines from 1905 to 1950* (New York: American Heritage Press, 1970), 147.
92. William Lee Howard, M.D., "Speed Mania," *Saturday Evening Post* 178 (30 Sept. 1905): 17.

93. For example, J. Slocum Briggs, proprietor of Stevens Villa on Bellevue Avenue in Newport, was severely injured when an auto spooked his horse, which ran away and crashed into a stone wall. *Newport Mercury*, 21 July 1900, p. 1.
94. *Report of the State Board of Public Roads*, January 1912, p. 273.
95. *Report of the State Board of Public Roads*, January 1913, p. 40; *ibid.*, January 1914, p. 44. The state had no reporting procedure, so the totals were based on newspaper accounts.
96. *Providence Sunday Journal*, 24 Nov. 1907.
97. *Providence Daily Journal*, 22 Nov. 1907, p. 1.
98. *Providence Daily Journal*, 16 Apr. 1908, p. 9.
99. *Providence Daily Journal*, 17 Apr. 1908, p. 1.
100. *Providence Daily Journal*, 27 May 1908, p. 3.
101. The following conclusions are based on an analysis of occupations, organizational memberships, and political preferences of the owners of 400 of the first 1,000 registered automobiles listed in *Who Is It?*, May 1905.
102. *Who Is It?*, May 1908, November 1919.
103. Ray Stannard Baker, "The Automobile in Common Use," *McClure's Magazine* 13 (July 1899): 205-6, 208.
104. H. G. Wells, "Anticipations: An Experiment in Prophecy, Locomotion in the Twentieth Century," *North American Review* 172 (June 1901): 805.
105. "Our Effective Street Traffic Regulations," *Board of Trade Journal* 26 (May 1914): 381-82.
106. "Abolish the Automobile Smoke Nuisance," *Board of Trade Journal* 25 (July 1913): 257.
107. Charles Carroll, *Rhode Island: Three Centuries of Democracy* (New York: Lewis Historical Publishing Co., 1932), 2:850.
108. About the trolley parks, see J. Stanley Lemons, "Summer Times, from Shore Resorts to Amusement Parks," in *What a Difference a Bay Makes* (Providence: Rhode Island Historical Society/Department of State Library Services, 1993), 115-19.
109. In 1909 the Rhode Island Company owned 313.55 miles of track in the state, and between June 1908 and June 1909 it collected eighty million fares. *Board of Trade Journal* 21 (July 1909): 366.
110. Carroll, *Rhode Island*, 2:851.
111. *Ibid.*, 853.
112. Scott Molloy, "Rhode Island Communities and the 1902 Carmen's Strike," *Radical History Review*, no. 17 (1978), 75-98; Kellner and Lemons, *Rhode Island*, 73.
113. Mark S. Foster, "The Automobile and the City," in *The Automobile and American Culture*, 26-29.
114. Quoted in Brosseau and Andrist, *Looking Forward*, 141.

MAPLEVILLE, R. I.



Burrillville: A Town on the Blackstone?

ALBERT T. KLYBERG

Despite the relative compactness of Rhode Island—about forty-eight miles long and thirty-seven miles wide—and the fact that a good deal of its geographical personality is dominated by Narragansett Bay, most Rhode Islanders would be hard-pressed to locate all of the state's thirty-nine cities and towns on a grade-school outline map. Still, most residents would be knowledgeable enough in such matters to raise an informed eyebrow if someone were to suggest that the town of Burrillville is on the Blackstone River. After all, Burrillville occupies the extreme northwest corner of the state, with two of its borders on the state's western boundary with Connecticut and Massachusetts; the Blackstone River, on the other hand, was for more than a century Rhode Island's eastern boundary. Burrillville does not even adjoin Woonsocket, where the Blackstone begins its southward course through the state: between the two towns lies North Smithfield. Why, then, is Burrillville now seeking to become a member of the bistrate cluster of towns in the Blackstone River Valley National Heritage Corridor? How can Burrillville be considered a town on the Blackstone?

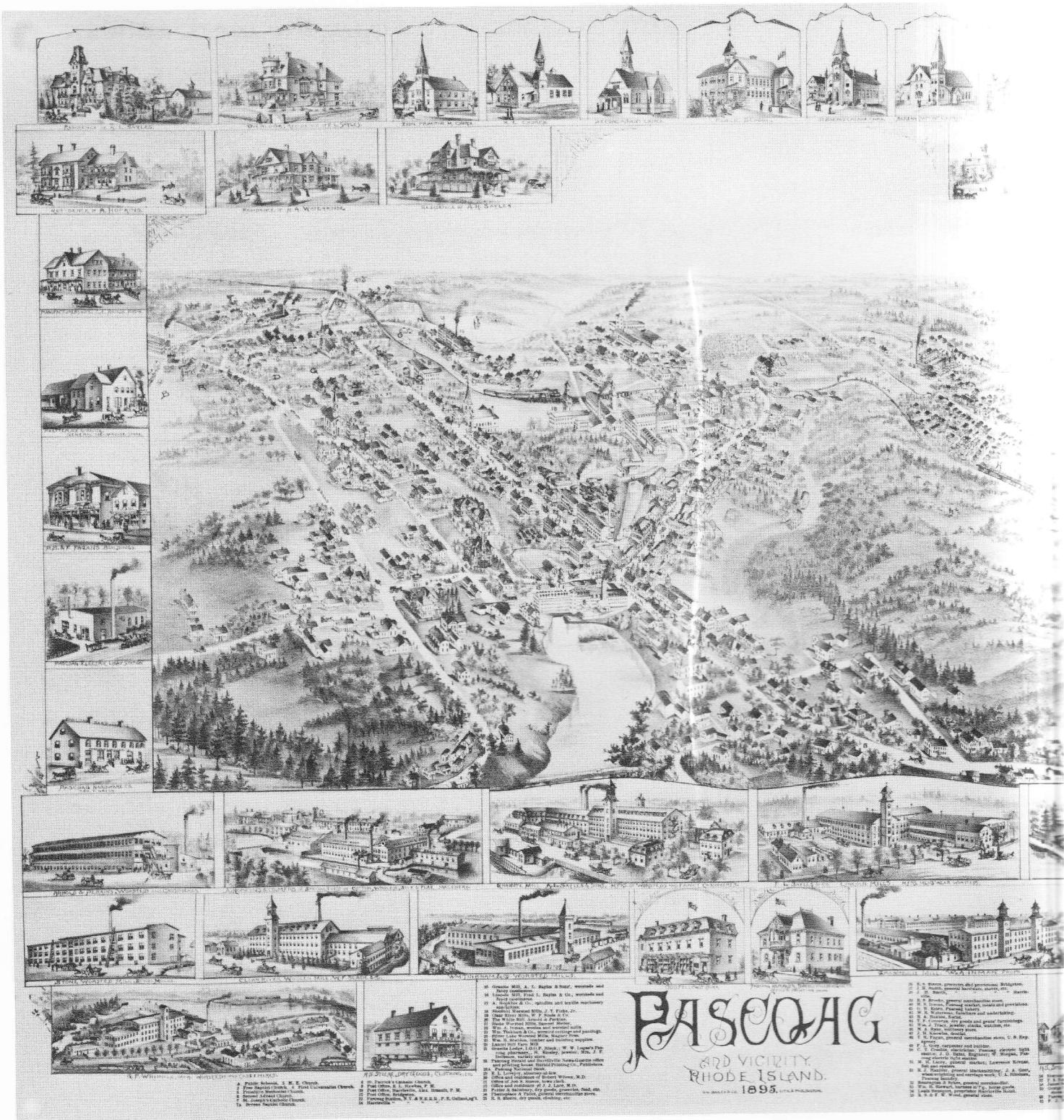
The answer becomes apparent when we examine the region's system of rivers. Burrillville is connected to Woonsocket by way of the Branch River, which rises in Burrillville from a number of tributaries (principally the Clear, Pascoag, and Chepachet rivers), then courses through various nineteenth-century manufacturing villages and runs across North Smithfield, where it flows into the Blackstone just before that river twists north back into Massachusetts before reentering Rhode Island in Woonsocket. As a branch of the Blackstone, the Branch River is one of nearly a dozen major streams contributing to what was once America's hardest-working river. The Branch River is Burrillville's physical connection—as well as its industrial and cultural connection—with the Blackstone.

The Blackstone River itself originates in a number of sources north, west, and east of Worcester, Massachusetts, and flows southward for forty-eight miles to its terminus at the port of Providence. Along the route of the Blackstone and its tributaries are nineteenth-century manufacturing sites typical of two different kinds of towns: densely packed cities like Worcester, Woonsocket, Central Falls, and Pawtucket, with many clustered manufacturing enterprises, and dispersed rural or suburban towns, with small, independent mills. Burrillville is a town of the latter type.

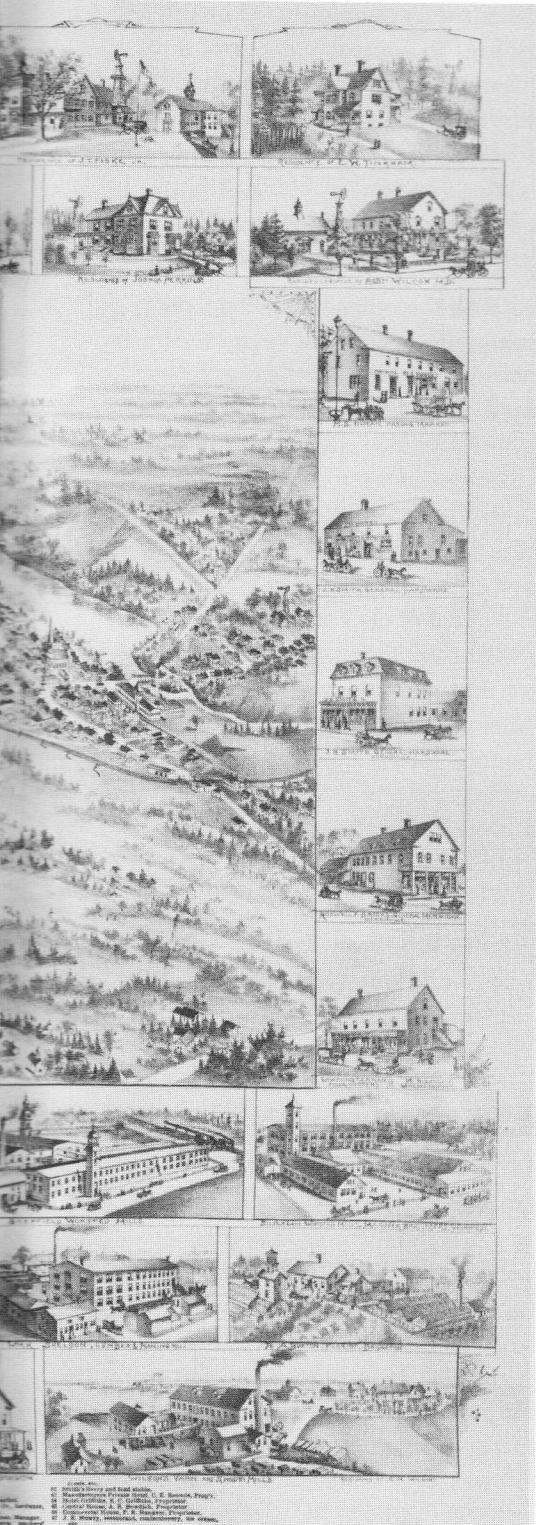
Although almost a perfect rectangle in shape, Burrillville somehow seems to occupy a rather vague and undefined area. As in the case of other Rhode Island towns, what gives Burrillville its identity and its definition is its individual villages and locales—places like Harrisville, Pascoag, Gazzaville, Bridgeton, Saxonville, Mapleville, Oakland, Huntsville, Graniterville, Tarkiln, Nasonville, Mount Pleasant, Mohegan, and Wallum Lake.¹ All of these places were associated with manufacturing; all have their origins as nineteenth-century mill

Mapleville, one of the many rural manufacturing villages along the Branch and Clear Rivers, circa 1920. Courtesy of Patricia A. Mehrten.

Albert Klyberg is the director of the Rhode Island Historical Society. He wishes to thank Patricia A. Mehrten of Burrillville for much advice and generous sharing of her scholarship.



A bird's-eye view of Pascoag and vicinity, by O. H. Bailey and Company, 1895. Courtesy of Patricia A. Mehrtens.



villages along one of the streams of the Branch River system. In architecture, in population origins, in village life, language, and customs, all share a cultural and historical tradition that is identical with that of dozens of other Blackstone River communities. Although the local character of these places has been somewhat diluted by suburban infill and new populations in the last forty years, much remains, and there is thus much to be learned from studying these places as part of the root and branch of Blackstone Valley culture.

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The town of Burrillville was set off from Gloucester, of which it had formed the northern half, in 1806. It was named in honor of James Burrill, Jr., a prominent Providence lawyer and politician. (A similar distinction had been conferred on the Honorable Theodore Foster with the creation of another namesake town in 1781.) Burrill was then serving as Rhode Island's attorney general, and he would later become a state Supreme Court justice and a United States senator. Aside from presenting the town with some blank minute and record books for the documentation of its activities, Burrill had little connection with Burrillville.

The new town was one of the state's largest in land area, containing more than fifty square miles. About eighteen hundred people lived there. The town was thickly wooded, and its oak, elm, English walnut, beech, and pine trees helped to supply the shipbuilding needs of the port of Providence. Beginning in the years from 1810 to 1814, however, Burrillville became important not for its timber but for its manufacturing sites, and the style of its mill villages and its eventual development as the center of the state's woolen industry would earn the town its distinctive membership in the Blackstone Valley textile tradition.

Small textile operations—cotton at first—appeared at Wallum Lake and Oak Valley, and a fulling and dressing shop was started at Pascoag. These early enterprises made their appearance towards the end of the first phase of cotton manufacturing in the state (a period from 1790 to about 1819), and they drew their labor from among the area's farm population. During this time most Rhode Island textile entrepreneurs saw their hopes dashed at least once by overproduction, machinery failure, or incomplete distribution systems, or by the smothering English and European competition that followed the lifting of embargoes at the end of the Napoleonic Wars. One historian estimates the failure rate at 80 percent.²

Meanwhile, the character of Burrillville was beginning to change. The opening of turnpikes from Providence made manufacturing possible at remote hinterland sites, and the lure of better farmland in the Middle West, together with the opening of the Erie Canal, helped siphon off those farm families disinclined to exchange farm loam for factory loom. The result was a change in the components of Burrillville's population, with Yankee farmers of English descent replaced first by Irish and then by French Canadian mill workers. Concurrently, Baptist, Methodist, and Quaker meetinghouses began to give way to Roman Catholic parishes.

In these changes, Burrillville was sharing phenomena common to the towns of the Blackstone Valley. There were other similarities as well. One of these was the location of the new mills. In Burrillville, as in the other towns, most (if not all) of these mills were built on sites that had previously been used by sawmills

and gristmills, the service facilities of the agricultural community. Although textile manufacturing required larger reservoirs, greater control over water flow, and more extensive engineering than sawmills and gristmills, harnessing the necessary waterpower was still relatively easy: it had been done before, though in a simpler fashion. From Wallum Lake to Slatersville Pond, the Branch River offered considerable power in a descent of about 325 feet (by contrast, the Blackstone drops only about 450 feet from Worcester to Providence, a far greater distance). Burrillville had many excellent sites for waterpower.³

Another development that Burrillville shared with the other Blackstone Valley towns in Rhode Island was the growth of company-owned mill villages. Almost all the new mills in the meadows along the Branch and the Blackstone rivers were built on private mill estates where sawmills and gristmills had previously stood. The owners of these tracts had status and standing with their town meetings, but the landless, propertyless factory operatives who resided in company-provided rented housing on the estates did not. Town officials, for their part, had little control or influence over the way the estates were run. Usually functioning as self-contained villages, the estates were thus virtually independent enclaves within the towns, totally under the control of the factory owners. Not only did these magnates govern the operation of their mills; they also governed almost every aspect of life in the mill villages. The millowners established the villages' schools, churches, and stores and took a major role in their management. The millowners' builder-architects designed the village residences, public places, and workplaces. Those who lived on these private estates were regulated in every part of their day, from the bell that roused them from sleep to those that called them to the mill, released them for meals, and dismissed them at night.⁴

Also characteristic of the towns of the Blackstone Valley was Burrillville's pattern of textile mill clusters at every possible source of waterpower. These sites were called mill privileges. One wonders if the term *privilege* signified a legal recognition that someone was granted the right to the exclusive use of something—the bank of a river—that was originally accessible to all. In any event, the damming of streams and the enhancing of natural waterfalls for power were a familiar story throughout the Blackstone Valley.

Equally familiar were the successive waves of population in the work force of the factories. During the first decades of the nineteenth century, the mills drew their operatives from nearby farms. In Burrillville, farming had been a marginal enterprise; the stony, wooded land—"a rough and barren land," early writers called it—was regarded as difficult and unappealing. The independent American-born farmers and their families in the region had a substantial adjustment to make in moving from their farms to the regimented life of the mill villages. Soon they were joined or replaced there by Irish workers, many of whom had arrived in the valley as laborers to build the Blackstone Canal and the Providence and Worcester Railroad. Then, by the 1860s and 1870s, large numbers of French Canadians came to work in the mills. Many were recruited to replace Irish workers who had gone off to fight in the Civil War. These ethnic changes, evident in Burrillville, were common throughout the region.

But for all its similarities, Burrillville differed from the other towns of the Blackstone Valley in a significant and interesting way: although important as a textile-manufacturing town, it did not follow the trend towards cotton-goods

manufacture, but instead became the state's center of production for woolen goods. This industry owed its origin to one of Rhode Island's main agricultural enterprises in the seventeenth century: sheep raising. According to a noted historian of the colonial period, the late Carl Bridenbaugh, the islands of Narragansett Bay were the premier location for sheep raising in New England. Easily adapted to pasture, the islands were ditched and planted with imported English grass seed, and the surrounding water kept the sheep safe from the predators of the forest. So productive were these pastures that sheep, mutton, and wool were among the colony's first export products when Rhode Islanders turned to the sea.⁵

Although these exports became less important in succeeding years, and could not by themselves provide sufficient profit for the merchants of colonial Newport, the trade in sheep and sheep products remained a familiar enterprise on the Rhode Island scene. When the sons and daughters of the Newport merchants developed the Narragansett Country of South County, sheep raising was an established part of the agricultural pattern. Among those who prospered and became prominent in the Narragansett Country was the Hazard family. During the state's transformation from a farming to a manufacturing economy in the early nineteenth century, the Hazards drew on their sheep-raising background to become producers of woolen products at Peace Dale, thus establishing the state's woolen industry in South County. By mid-century, however, the center of woolen production had moved to Burrillville (see accompanying table).

Woolen Mills in Burrillville and Four Selected Towns, 1832-1860

TOWN	1832	1836	1840	1850	1860
Burrillville	1	3	3	11	15
South Kingstown	7	10	21	7	NA
Providence	0	2	1	2	4
Smithfield ^a	0	1	1	3	2
Cumberland ^b	1	1	1	2	2

Source: Peter S. Coleman, *The Transformation of Rhode Island, 1790-1860* (Providence, Brown University Press, 1963), 98, 135, 137, 140.

Note: Figures include spinning, weaving, and fulling mills.

^a Included all of the present Smithfield, North Smithfield, Lincoln, and Central Falls and half of the present Woonsocket.

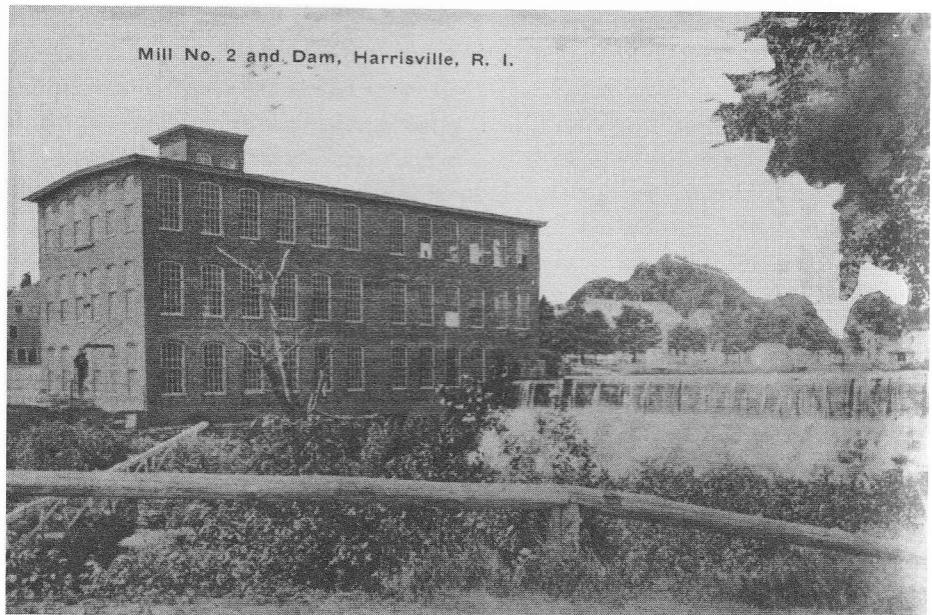
^b Included half of Woonsocket.

The processing of wool from sheep to shuttle required the cleaning, degreasing, and fluffing of the fibers. Some cleaning was accomplished by washing or scouring, but to remove the oil the wool was taken to fulling mills, where fuller's earth (a powdered absorbent clay) was first beaten into the wool to absorb the oils and then beaten out. The fibers were then curried or teased to raise the nap. The fabric was also stretched on frames and dyed as part of the fulling process.

All of these operations were carried out in Burrillville. By the time the town replaced South Kingstown as the woolen manufacturing center of Rhode

Island, however, the "clip" of locally raised sheep was no longer the principal source of raw wool. Most came from elsewhere. In 1855 Burrillville farms produced only 463 pounds of wool, while 2,400,000 pounds were consumed by the town's factories, with the additional wool arriving in Providence from northern New England, from the western states, and even from Australia.⁶ The wool was usually carted out to Burrillville on the Powder Mill and Putnam turnpikes (Route 44) to Chepachet or the Douglas Pike to Nasonville, and the finished product returned to Providence the same way. Transportation was also available by way of Woonsocket via the Blackstone Canal and, after 1847, the Providence and Worcester Railroad. After 1873 Burrillville had a direct rail connection to Providence in the form of the Providence and Springfield Rail-

Waterpower was a primary component in the development of the manufacturing villages scattered across Burrillville. Shown here is a mill and dam of the William Tinkham Company in Harrisville. Courtesy of Patricia A. Mehrtens.



road, which went to Pascoag. In the 1890s the town was connected by rail to Woonsocket as well.

According to Lloyd Black, it was because direct rail service was rather slow in coming to Burrillville that the town's manufacturing developed the way it did. With waterpower available at numerous sites along the Branch River and its tributaries, Burrillville, like other Blackstone Valley towns, at first had both cotton and woolen establishments. In the middle of the nineteenth century, however, mills in Pawtucket, Central Falls, Valley Falls, Lonsdale, Berkeley, Ashton, Albion, Manville, Hamlet, Bernon, Globe, Woonsocket Village, and other places in the valley were able to shift from waterpower to steam power because of their access to coal delivery by rail. This access made it possible for these mills to expand, and since cotton manufacture was especially profitable in larger-scale operations, it was cotton manufacture that came to predominate along the Blackstone. Places like Burrillville, which were still using waterpower as their main motive force, found woolen manufacturing to be the most economical use of their relatively smaller facilities. When the railroad finally came to Burrillville, the town's mills converted to coal-fired steam power too, but they maintained their commitment to woolen and worsted products.⁷

Until the middle of the nineteenth century the mills of Burrillville produced many types of woolen goods. There was cassimere, a soft-textured fabric used for men's suits, made of carded medium-weight wool, either coarse or fine, with a pattern of checks, plaids, or stripes woven into it on the loom. There was jean, a durable twilled fabric that could be made from a mixture of cotton and wool as well as from lightweight cotton sheeting yarns. There was cassinet, a light cloth of cotton and wool, and kersey, a coarse-ribbed woolen or woolen and cotton cloth with a fine, lustrous nap, heavily fulled and used especially for work clothes and uniforms; both of these fabrics were among the products known as Negro cloth, which was created in the North and sold to southern planters to clothe their slaves. Kerseymere, on the other hand, was a fine wool woven in fancy twill patterns, similar to or identical with cassimere. Linsey was a strong, coarse fabric of linen or cotton warp and wool weft. Satinet, an inferior kind of satin, was a mixture of silk and cotton or wool. Shoddy was a cloth

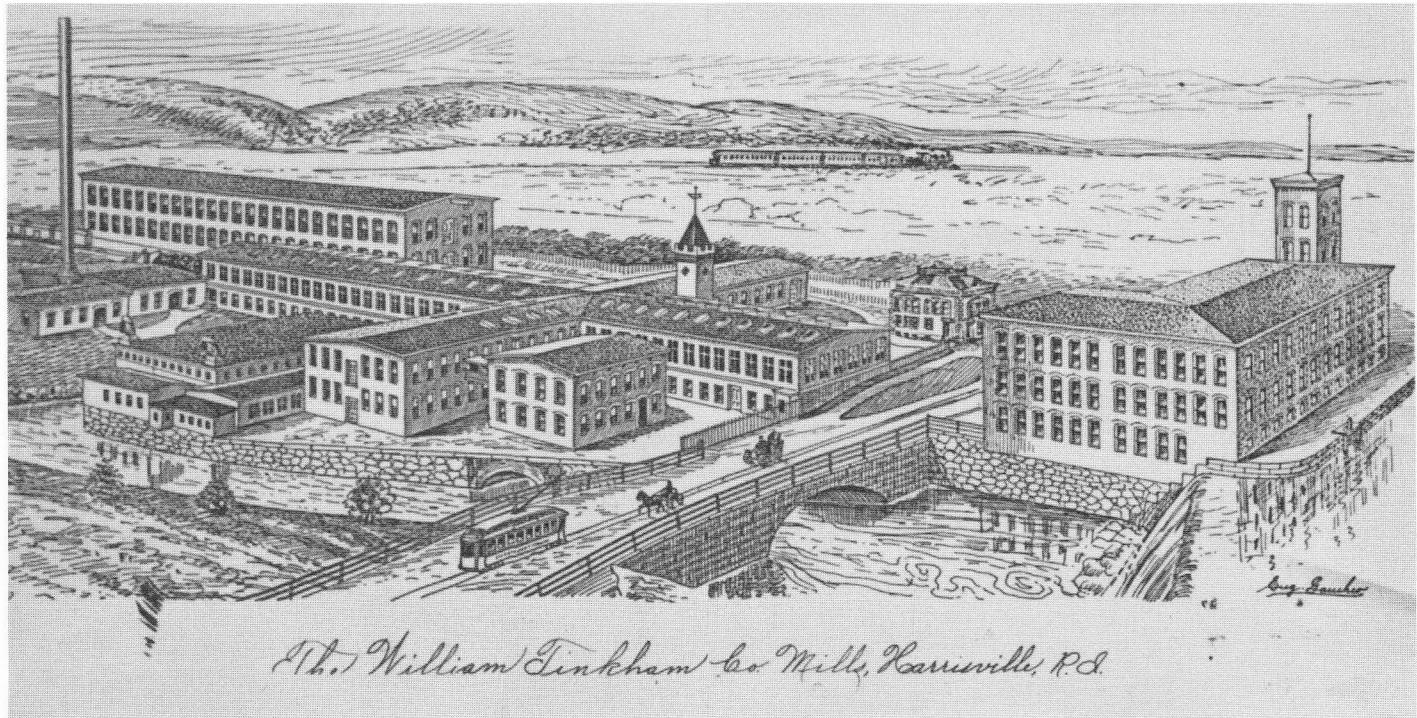
made of reclaimed wool, its threads pulled apart by hand or machine from old rags and rewoven into a new cloth.⁸

In the second half of the nineteenth century virtually all the mills in Burrillville shifted away from these various woolen products to concentrate on the manufacture of worsted cloth. Several factors influenced this shift. After 1865, with the slaves free and the plantation economy in ruins, there was no longer a southern market for Negro cloth. Even more important, the Reciprocity Treaty with Canada (1854-66) permitted the American importation of long-fiber wool, which was the basis for worsted cloth. Combed rather than carded, this wool required a different kind of machinery from what was then in use, but a strong demand for worsted products (Civil War uniforms, for example, were often made of worsted rather than of lesser grades of woolen cloth) made the shift possible. When the Reciprocity Treaty expired in 1866, a high tariff on imported worsteds sheltered the American worsted industry, and advances in technology allowed Argentine wools to be used.⁹

From 1855 to 1895 the number of mills in Burrillville dropped from twenty-eight to eighteen, but their total production increased. Larger factories were created, smaller ones were enlarged, and some destroyed by fire were not rebuilt. The coming of the railroad provided coal for steam power and enhanced the transportation of raw materials and finished products into and out of the town.

After 1895 Burrillville's mills began to consolidate into larger companies. Some of these companies were headquartered out of town, and decisions about the life and death of certain enterprises and the destiny of the local work force were often made by people who had no emotional ties to Burrillville. A significant exception in this regard was the Stillwater Worsted Company and its president, Austin W. Levy. Contrary to the trend toward absentee ownership, Levy not only lived in Harrisville but became Burrillville's chief benefactor, donating a

Larger factories, like the William Tinkham Company complex in Harrisville, were made possible by the coming of the railroad, which carried coal for the mills' steam-powered machinery. Courtesy of Patricia A. Mehrtens.



town hall, a courthouse, a library and assembly hall, a church, an elementary school, and a post office to Harrisville and contributing to community projects in other parts of the town as well.



In its latter stages, Burrillville's worsted manufacturing shared the fortunes of the textile industry throughout the Blackstone Valley. Healthy through World War I, the industry took ill during the 1920s, and by 1935 it was in decline. By that year only a dozen of Burrillville's eighteen mills were in operation. As elsewhere, electricity had joined or replaced steam power as the mills' source of energy, and truck transportation was challenging the railroads. New York City's garment district had by then become the single market for Burrillville's worsteds.¹⁰

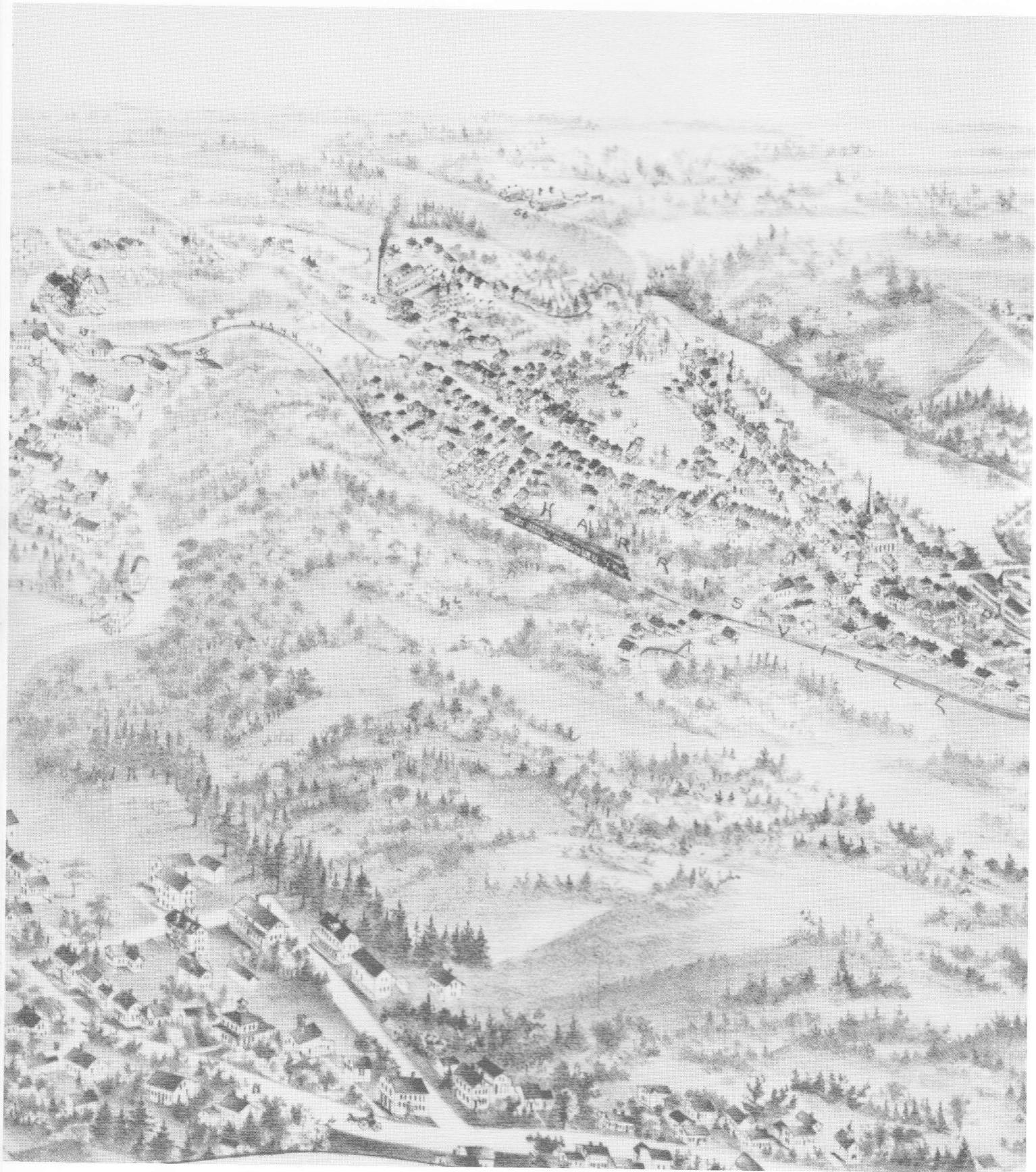
The enormous industrial demands of World War II revived all areas of Rhode Island's Depression-era economy, but the boom ended with an abrupt and widespread decline from 1947 to 1953. Stillwater Worsted closed in 1972. No woolen manufacturers remain in Burrillville today. As in the rest of the Blackstone Valley, mill fires have claimed one site after another, but some of the old buildings survive; a few now house small new industries like plastics manufacture, while others stand idle, waiting for historians to sift out their stories, as visitors stare in awe at the old complexes and ponder the lessons of American enterprise. In many ways the story of the Branch River villages of Burrillville is also the story of the Blackstone Valley.

Notes

1. See Walter Nebiker, *Historic and Architectural Resources of Burrillville, Rhode Island: A Preliminary Report* (Providence: Rhode Island Historical Preservation Commission, 1982), 7-10.
2. Prof. James Conrad, conversation with author.
3. Lloyd D. Black, "The Evolution of Industry in Burrillville, Rhode Island" (Master's thesis, Clark University, 1936), 23. I am indebted to Patricia A. Mehrtens for discovering this study and bringing it to my attention.
4. A topic that needs investigating is the precise status of mill operatives in the towns where they lived. As nonvoting residents, they had no standing at town meetings, which at this stage of history were the all-powerful local governments. However, as yet we do not know whether operatives had any access to the services that the towns provided, or whether they were subject to the authority of town officers. When operatives became ill or injured or were dismissed, were they the responsibility of the millowner, or could they seek assistance from the overseer of the poor or the town council? Did the town constable have any legal standing in dealing with civil or criminal infractions that took place on mill property? A careful review of the town records of Burrillville, Smithfield, Scituate, Johnston, Cranston, Warwick, North and South Kingstown, Charlestown, Westerly, and Hopkinton could be very illuminating.
5. Carl Bridenbaugh, *Fat Mutton and Liberty of Conscience: Society in Rhode Island, 1636-1690* (Providence: Brown University Press, 1974), 27-60, 130.
6. Black, "Evolution of Industry in Burrillville," 35.
7. Ibid., 15, 17.
8. Florence M. Montgomery, *Textiles in America, 1650-1870* (New York: W. W. Norton, 1984) 192, 193, 271, 272, 273, 342, 347-377.
9. Black, "Evolution of Industry in Burrillville," 37-41.
10. Nebiker, *Historic and Architectural Resources of Burrillville*, 13-14; Black, "Evolution of Industry in Burrillville," 55-69.

Detail from a bird's-eye view of Pascoag and vicinity, by O. H. Bailey and Company, 1895. Courtesy of Patricia A. Mehrtens.





Rhode Island History
110 Benevolent Street
Providence, Rhode Island 02906-3152
ISSN 0035-4619

Coleman Auto.

Cover

The Coleman Auto and Cycle Company,
19 Washington Street, Providence. Photo from
the Providence Board of Trade Journal, April
1901. RHHS Collection (RH X3 4614).

