

THE MOUNT SAVAGE IRON WORKS, MOUNT SAVAGE, MARYLAND
A CASE STUDY IN PRE-CIVIL WAR INDUSTRIAL DEVELOPMENT

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ABSTRACT

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All Americans did not spend the two decades prior to 1860 awaiting the outbreak of the Civil War. During this period, heavy industry was among the forces that struck their roots and began a crucial and decided impact upon American life. This study is a microcosmic examination and discussion of the course and impact of heavy industry in Western Maryland. Focusing on the Mount Savage Iron Works of Mount Savage, Maryland, the study traces the course of the company's origins, existence, and decline; and examines the firm's role as America's first producer of heavy iron rails in a national industrial context. In Western Maryland and the community of Mount Savage, the Works' impact was profound. It spawned the regional rail network that helped promote extensive coal trade. It was the focus of a marked degree of contemporary expressions of regional prosperity. In Mount Savage, the company, in effect, began the town's life. Its presence accounted for substantial additions to the community's population, housing, and public facilities.

The character of the community altered to account for the diverse groups of non-Americans that the company brought as a labor force. Strikes and other troubles attributable to the Works were by no means absent, but the thrust of industry's presence seemed to benefit Mount Savage. Though deficiencies of natural resources ended the Works' existence, its influence stretched to the present. The variety of firms spawned by the iron company's existence imparted valuable skills and industries to the continuing life of the community of Mount Savage.

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PREFACE

In a recent lecture at the University of Maryland, Professor Peter Gay discussed the heritage and contemporary endeavors of a school of French historians who work to write so-called total history. Professor Gay was quick to point out, however, that the current efforts of that group of Frenchmen simply did not measure up to the noble standards set by their intellectual and professional progenitors. Rather, Gay argued, their work shifted from an historically comprehensive embodiment of a given topic toward a more narrowly economic treatment, bristling with charts, graphs, and tables. Professor Gay suggested that such a change represented a most unfortunate compromise to the sort of history that really deserves to be written. However, he asserted just as readily that the kind of immersion and involvement which "total history" demands of those audacious enough to undertake it poses difficult problems to historians.

Doubtlessly unknown to their French contemporaries, a number of American historians have recently employed an approach not unlike "total history" in at least one special topic in American history. For, as a professional tool, perhaps even Marc Bloch might admit that "total history" is more applicable to some undertakings than to others. The problem of industrial development in pre-Civil War America

is the particular area in which American historians have employed a technique similar to "total history." The ante-bellum iron industry is one which has come under special focus, and the historians who have undertaken its examination have produced works ranging from the rankest sort of antiquarian rambling to studies which would rank with the best of "total history."¹

For it is in the areas of economic growth and the interplay between industry and its surroundings, both social and physical, that a great potential exists for the exercise

¹Such studies focus upon the industrial development of a region or particular local facility. Pioneering this type of undertaking was Kathleen Bruce's Virginia Iron Manufacture in the Slave Era (New York: 1930). More recent, and of a rambling and anecdotal nature, are Earl Chapin May, Principio to Wheeling, 1713-1945—A Pageant of Iron and Steel (New York: 1945), and James Maxwell Ransome, Vanishing Iron-works of the Ramapos—The Story of the Forges, Furnaces, and Mines of the New Jersey-New York Border Area (New Brunswick, N.J.: 1966). Edward N. Hartley's study Iron Works on the Saugus (Norman, Okla.: 1957) falls short, perhaps, of the comprehensive standards set for work in "total history," but his detailing of technological and economic problems of a local facility within a large-scale environment is admirable. Three other works equal Professor Hartley's economic and technological excellence but enlarge their focus to embody the consideration of an industrial facility's impact upon its social and physical surroundings in vastly different environments: Charles B. Dew, Iron Maker to the Confederacy—Joseph R. Anderson and the Tredegar Iron Works (New Haven: 1966); James D. Norris, Frontier Iron—Maramec Iron Works, 1826-1876 (Madison, Wis.: 1964); and Joseph E. Walker, Hopewell Village—A Social and Economic History of an Iron Making Community (Philadelphia: 1966).

of the broadest range of analytical powers that an historian can bring to bear.²

²Stuart Weems Bruchey, The Roots of American Economic Growth, 1607-1861—An Essay in Social Causation (New York: 1965), xi, xii, 214; Sheppard Bancroft Clough and Theodore F. Marburg, The Economic Basis of American Civilization (New York: 1968) passim; Peter Temin, Iron and Steel in Nineteenth Century America—An Economic Inquiry (Cambridge, Mass.: 1964), 15, 53-54; Norris, Frontier Iron, iii; Walker, Hopewell Village, 14-16.

A very considerable increase has taken place in the make and manufacture of iron since the returns from which the above facts were taken were, made in 1850; and from the energy, enterprise, skill, and industry of all concerned in this manufacture, and the importance attached to it as a permanent source of wealth and prosperity, its future progress will exceed that of the last few years.

Joseph Whitworth and George Wallis—1854
The Industry of the United States in
Machinery, Manufactures, and Useful
and Ornamental Arts

The Manufacture of iron indicates, perhaps more than any other, the march of civilization, and its progress is coeval with those arts which elevate a nation.

E. A. J. Merchant
Hunt's Merchant's Magazine and
Commercial Review
March, 1845

CHAPTER I

THE SETTING—GEOGRAPHICAL AND TECHNOLOGICAL

During the late 1830's, two groups of English capitalists braved the dangers of the economic fallout of the 1837 panic and ensuing depression to employ their means in the industrial development of America's trans-Allegheny West. Neither of the operations was bridled by limited means or expectations. The projects at Brady's Bend in Armstrong County, Pennsylvania, and at Mount Savage in Allegany County, Maryland, were conceived on a grand scale indeed. Both were capitalized to something in excess of \$1,000,000. Both were engaged in iron production, but fired their blast furnaces with coke. This modern anomaly perhaps granted the two facilities the status of research and development institutions rather than pioneers in the effective use of the new material. Most importantly, both firms had a highly specialized purpose for their modern and comprehensively integrated facilities. Both engaged in the earliest production of heavy iron rails in America.¹

¹Witt Bowden, The Industrial History of the United States (New York: 1930), 200; Victor Selden Clark, History of Manufactures in the United States [3 vols.; Washington, D.C.: 1929], 3 vols. (New York, 1949), I, 446; Louis Morton Hacker, The Triumph of American Capitalism (New York: 1947), 230-31; Katherine A. Harvey, Best Dressed Miners—Life and Labor in the Maryland Coal Region 1835-1910 (Ithaca, N.Y., and London:

Today, Western Pennsylvania is one of the country's leading industrial complexes engaged in the production of iron and steel. By contrast, Mount Savage, Maryland, is a quiet little town in the geographic backwater of Western Maryland with a population scarcely higher today than in the 1840's and '50's when its industrial facilities ranked it as one of the country's leading producers of railroad iron. Nothing remains of the once impressive plant but the crumbling and half-buried remains of the blast furnaces and some decaying company houses. And little substantive heritage of Mount Savage's industrial past remains beyond a marker erected by the State Historical Association and some of the same company houses (though not decaying) that are still occupied.

All considered, Mount Savage would seem to be an admirable and worthy arena in which to undertake a study in "total history." Though the historian must properly be guided by his sources and their character, the problem of the impact of industry and technology upon society constitutes an intriguing and exciting topic for research. What were the effects of industry upon both the community of Mount Savage and the region of Western Maryland? What happened to the people? What were the responses, popular, specific, economic, positive or negative, which the presence and growth of industry elicited?

1969), 9; Maryland Geological Survey Allegany County (Baltimore: 1900), 189; Frederick Overman, The Manufacture of Iron in All Its Various Branches (3rd ed.; Philadelphia: 1854), 174; Temin, Iron and Steel, 73-74.

To advance answers to these and other questions, some further attention to economic and industrial conditions is necessary. In addition, the career of the Mount Savage Iron Works itself must be examined. While the study is chiefly local and regional in character, the present-day status of Western Maryland as opposed to that of Western Pennsylvania makes the former a better model in which to study the action of pre-Civil War industrial beginnings. For, while many ante-bellum businessmen drew upon wide resources to establish "little factories in out-of-the-way places which became the foundation for important cities and thriving industries,"² it did not always work out that way.

On the broadest economic scale, an industrial capitalist of the late 1830's who had sufficient acumen (and perhaps a touch of present-day historical hindsight) would find a reasonably good field for endeavor. Though agriculture was still the chief activity in the economic life of America, a burst of territorial expansion and growth signaled the roots of new things. Clearly, transportation was to be a genuine need of America, and industry would play a prominent role. Expansion westward helped promote economic nationalization. The economy began a process of becoming internally self-sufficient, though certain crucial segments retained their ties across the Atlantic Ocean. Perhaps most importantly, an industrial capitalist of the late 1830's

²Harold Underwood Faulkner, American Economic History (6th ed.; New York: 1949), 257.

would be a participant—successful or not—in two decades of industrial growth unprecedented in America up to that time. For the first time large-scale capital found an application in endeavors other than those of a primarily extractive nature. Industry and the economy-at-large between 1840 and 1860 began to create.³

Yet the infant industrial order in which the capitalist of the late 1830's might conceivably accept membership was somehow different. There was an element of reluctance attendant upon such activities as large capital outlay, substitution of mechanical power for muscle power, concentration of labor, and substitution of machine skill for the individual sort. Perhaps it was because so many other opportunities required so much less of the entrepreneur and his efforts. Or perhaps the penetrating and inquiring gaze of Thomas Jefferson could make an entrepreneur restive and hesitant as he betrayed the ideal of an agrarian society. However, the overwhelming opportunity for industrial and entrepreneurial exercise preserved at least some measure of a pastoral ideal. The early conditions of industry in

³Arthur Cecil Bining, Pennsylvania Iron Manufacture in the Eighteenth Century (Harrisburg: 1938), 8; Bowden, Industrial History of the United States, 191; Thomas Childs Cochran and William Miller, The Age of Enterprise—A Social History of Industrial America (rev. ed.; New York: 1961), 52; Katherine Coman, The Industrial History of the United States (New York: 1919), 232; Douglas C. North, The Economic Growth of the United States, 1790-1860 (Englewood Cliffs, N.J.: 1961), 62; Joseph G. Rayback, A History of American Labor (New York: 1966), 49; Fred Albert Shannon, America's Economic Growth (3rd ed.; New York: 1951), 119-40; George Rogers Taylor, The Transportation Revolution, 1815-1860 [New York: 1951] (New York, 1968), 3.

America were in direct contrast with the experiences of Europe. Something, for neither travelers nor historians are explicit here, made industry come to America both gently and well in the ante-bellum years. Europeans did not find the forceful, conflicting, dislocating, and messy counterpart to their own experience in America; though the postwar years of the "Great Barbecue" would fill the continental paradigm admirably. Still, opportunities were available. And in the iron business, the contemporaries proclaimed it.⁴

The iron industry offered attractive possibilities to those with sufficient knowledge, money, and daring. It was a highly competitive industry, and a highly profitable one. Between 1840 and 1860 annual profits in the iron business of from 40% to 60% were not uncommon. Even profits of 100% were not unknown. In fact, the potential for great success and reward in the iron business was equaled only by the potential for failure and ruin. While certain sectors of the industry retained a distinct dependence upon foreign supplies, the number of domestic iron producers dropped as total production rose. Further, as professional knowledge

⁴John Leander Bishop, A History of American Manufactures from 1608 to 1860 [3 vols.; Philadelphia: 1868], 3 vols. (New York: 1967) passim; James Andrew Barnes, Wealth of the American People—A History of Their Economic Life (New York: 1949), 221-22; Clark, History of Manufactures, I, 412-96; Marvin Mark Fisher, Workshops in the Wilderness—The European Response to American Industrialization, 1830-1860 (New York: 1967), 4, 13, 42-45, 90-91; Rayback, History of Labor, 49; Niles' Weekly Register, LXVIII (June 14, 1845 and July 19, 1845), 234-35, 312.

of iron-producing techniques gained wider circulation, both the character of America's demand for iron products as well as the means and techniques of its production were undergoing dramatic change. By 1860 the American iron market had shifted from a demand of an essentially rural, individual, and agricultural nature to one of a distinctly urban and industrial variety. Different kinds of iron were in demand, and the technology to make them was generally known. The still fledgling American iron industry was sorely pressed to adapt.⁵

The change in techniques of iron production fully equaled the magnitude of the shift in the nature of America's demand for iron. Charcoal-fired and water-powered production facilities characterized the typical ironworks in ante-bellum America. Beginning in the late 1830's, however, American ironmasters began the gradual adoption of interdependent and self-reinforcing techniques that had been known in Great

⁵Alfred D. Chandler, Henry Varnum Poor—Business Editor, Analyst, and Reformer (Cambridge, Mass.: 1956), 41; Clark, History of Manufactures, I, 370-78; Arthur Harrison Cole, Business Enterprise in Its Social Setting (Cambridge, Mass.: 1959), 161-64; Douglas Alan Fisher, The Epic of Steel (New York: 1963), 89; Stephen Lincoln Goodale, comp., and James Ramsey Speer, ed., Chronology of Iron and Steel (2nd ed.; Cleveland: 1931) passim; Abraham S. Hewitt, "On the Statistics and Geography of the Production of Iron," A Paper Read before the American Geographical and Statistical Society (n.p., February 21, 1856), 1; Lewis C. Hunter, "The Influence of the Market upon Technique in the Iron Industry in Western Pennsylvania up to 1860," Journal of Economic and Business History, I (Feb., 1929), 242-43, 265, 271; Malcolm Keir, Manufacturing (New York: 1928), 179; Shannon, American Economic Growth, 211, 243; Wolfgang Paul Strassman, Risk and Technological Innovation: American Manufacturing Methods during the Nineteenth Century (Ithaca, N.Y.: 1959), 22-23; Taylor, Transportation Revolution, 226-35.

Britain for decades. Among the most important of these changes was fuel for the blast furnace. The introduction of anthracite coal in Eastern Pennsylvania, and the later extensive use of coke in regions farther west, constituted decided improvements over charcoal. Their use at once cut costs, and improved the yield of the blast furnace. Other changes touched upon the furnace itself. The design and composition of the furnace's firebrick lining underwent improvement. The design of the furnace began to employ a more efficient placement of the blast apparatus' tuyeres and pipes. It was also during the two decades preceding the Civil War that American ironmasters began wider use of techniques used to heat a furnace's blast before introducing it into the smelting process. On this account, utilization of the furnace's waste gases, the material normally passing out of the top of the furnace, became a pivotal factor. Both hot blast and waste gas utilization permitted further economies of production and enhanced output. In addition, the power source for a blast furnace operation underwent a decided improvement. The traditional source of power to drive a furnace's bellows was water. Some firms experimented with a steam-powered supplement to the customary water power. The use of coal, coke, and particularly waste furnace gases permitted the more efficient employment of steam power for a furnace's blast. Indeed, the greater blast pressure achieved with steam power, combined with heating the blast, permitted the effective use of anthracite coal and coke.

Finally, the two decades before the Civil War witnessed both the beginnings of extensive production specialization and the first hints of the employment of scientific chemical analysis in the iron industry.⁶

However, despite the availability of improved means of production and a market for the new range of products, American ironmasters proved to be a recalcitrant and reluctant lot in adopting new techniques. In this respect they proved to be little different from their British counterparts of a few decades before. The inertia of a particular course of industrial development was difficult to overcome for each group. For the Americans, however, the process of adoption of the improved techniques is more difficult to understand. The experience of Britain offered a clear example of success. All the technology was available at once; and indeed the Americans did take a shorter time than the British to effect a changeover. Yet, despite the fact that their British

⁶Alan Birch, The Economic History of the British Iron and Steel Industry, 1784-1879 [London: 1967] (New York: 1968), 179; Bishop, History of American Manufactures, II, 423; Albert Sidney Bolles, Industrial History of the United States from the Earliest Settlements to the Present Time [3rd ed.; Norwich, Conn.: 1881] (New York: 1966), 207; Clark, History of Manufactures, I, 412; Horace Greeley et al., The Great Industries of the United States (Hartford, Conn.: 1872), 353; Hunter, "Influence of Market on Technique," ibid., I (Feb., 1929), 264, 273; Joseph Esrey Johnson, Blast Furnace Construction in America (New York: 1917), 237; The Metallurgical Society; American Institute of Mining, Metallurgical and Petroleum Engineers, History of Iron and Steelmaking in the United States (New York: 1961), 13, 19; John William Oliver, History of American Technology (New York: 1956), 268-69; James Moore Swank, History of the Manufacture of Iron in All Ages [Philadelphia: 1892] (New York: n.d.), 352, 375; Strassman, Risk and Technological Innovation, 8, 21.

counterparts were supplying the market in America which the introduction of improved techniques could meet, American ironmasters generally dragged their feet in ominous suspicion.⁷

The reluctance of America's ironmasters to adopt more advanced techniques seems more confusing in the face of certain segments of public interest and opinion. Contemporary trade and professional publications carried on a continuous dialogue discussing both refinements and applications of iron production. Among the items most closely associated with this phenomenon was the railroad in America. Through the 1830's, '40's, and '50's, reports and studies of engineering and construction problems abounded in trade and scientific literature. Most important for an ironmaster, perhaps, was the ceaseless debate on railroad track design and fabrication. Besides technical interchange and discussion on the merits of numerous designs for rails, one clear drift of professional opinion seems to have desired the development of domestic rail production.⁸

⁷Barnes, Wealth of the American People, 299; Birch, Economic History of the British Iron and Steel Industry, 25-30, 184-85, 279; Bruchey, Roots of American Economic Growth, 139-40; Clark, History of Manufactures, I, 412-13; Lewis Henry Haney, A Congressional History of Railways in the United States to 1850 (Madison, Wis.: 1908) *passim*; Overman, Manufacture of Iron, 171; Taylor, Transportation Revolution, 226; Temin, Iron and Steel in America, 2; Walker, Hopewell Village, 167.

⁸Overman, Manufacture of Iron, 365; Temin, Iron and Steel, 47; Annual Report of the Commissioner of Patents for the Year 1847, Exec. Doc. 54, 30th Cong., 1st Sess., 72; Journal of the Franklin Institute, XV (Feb., 1838) *passim*, (April, 1835) *passim*, VI—3rd series (July, 1843), 1-9; Mechanics' Magazine, XXXVI (Jan. 22, 1842) *passim*; Niles' Weekly Register, LI (Oct. 22, 1837), 123-24, LXIX (Oct. 18, 1845), 112.

Though recent study has done a great deal to impart meaningful precision to the traditionally simple relationship which scholars once thought the railroad had in fostering America's iron industry, the decided impact of the railroad upon certain portions of the industry is undeniable.⁹ An entrepreneur with sufficient available capital could profitably employ it in the construction of facilities for the production of railroad equipment. The middle 1840's saw the first boom in the founding of rolling mills for rail production. Railroad building to match geographical expansion, plus a demand for an improved quality of rails, made the future seem bright. Of no less importance was a move to replace existing strap iron rails, a wooden rail with an iron strap nailed to it that had an unsettling propensity to curl up through the floors of passing trains, with heavy iron rails. In addition, certain elements of improved iron production technique, particularly steam power, constituted important additions to advances in rail production equipment and methods during the 1840's and '50's. However, despite the fact that the industrial needs created by railroad building made its heaviest demands upon American wrought iron production, and promoted its early growth before the Civil War, numerous problems that confronted ironmasters left the demand for

⁹Robert William Fogel, Railroads and Economic Growth: Essays in Econometric History (Baltimore: 1964); Walt Whitman Rostow, The Stages of Economic Growth—A Non-Communist Manifesto (London: 1960). The controversy between these two scholars' works represents a sound exposition of the problem.

railroad iron in America far ahead of domestic production as late as 1860.¹⁰

What, exactly, accounted for the inability of American production to fulfill the demand for rails? An answer dealing strictly with the "hardware" of the problem would say there were simply not enough facilities to produce rails. While doubtless this explanation contains some element of truth, still other problems remain. Why, for instance, were there not more facilities? One important reason for the limited production capacity appears to have been financial. Despite some limited infusion of English capital, money was particularly "tight" in the western Allegheny region. Contractions in the East during the 1840's and '50's resulted in a still greater financial squeeze in the West. Further, any fractional loosening of monetary conditions back East found its way westward with difficulty, and generally arrived in a most diluted condition. This was a decided economic curse upon such an expensive and heavily capitalized undertaking as iron rail production. Lack of sufficient money forced western ironmasters into the position of having to

¹⁰Ernest Ludlow Bogart and Donald L. Kemmerer, Economic History of the American People (New York: 1947), 351; Clark, History of Manufactures, I, 360; Coman, Industrial History, 251; Albert Fishlow, American Railroads and the Transformation of the Ante-Bellum Economy (Cambridge, Mass.: 1865), 132-39; Temin, Iron and Steel, 4-5, 40-41, 46, 114-18; Shannon, American Economic Growth, 243; J. Elfreth Watkins, "The Development of American Rail and Track, as Illustrated by the Collection of the U.S. National Museum," Annual Report of the Board of Regents of the Smithsonian Institution Showing the Operations, Expenditures and Condition of the Institution for the Year Ending June 30, 1889 (Washington, D.C.: 1891), 673-74; Niles' Weekly Register, LI (Oct. 22, 1836), 123-24.

sell their goods on long credit while forced to make cash payments for raw materials and wages. Meanwhile, limited and seasonably unreliable transportation facilities as well as mounting costs seriously undermined Western ironmasters' ability to maintain the constant flow of production necessary for both an equitable financial situation and the most efficient technical operating status. Another problem peculiar to those engaged in rail production was the nature of the payment they received. Their fees were often paid in railroad stocks and bonds whose most redeeming characteristic was speculative volatility. And the spectre of British competition was seldom absent.¹¹ In 1856, Abraham S. Hewitt, a prominent American master engaged in rail production, summed up the industry's problems and needs along a number of lines. Eschewing the use of charcoal, Hewitt placed a high priority upon adequate supplies of "ore, limestone, and mineral coal," so located that they could be brought together easily and cheaply for production. Transportation to the production facility, "a fact too much overlooked in mining projects of the day," was not the sole problem in this respect. Transport to market was no less important. The population in the area of the operation must be adequate to insure labor at a "moderate cost." Both capital and

¹¹Barnes, Wealth of the American People, 228-29; Clark, History of Manufactures, I, 511; Fishlow, American Railroads, 137-39; Taylor, Transportation Revolution, 239; Hunter, "Influence of Market on Technique," ibid., I (Feb., 1929), 248; "Financial Problems of Early Pittsburgh Iron Manufactures," Journal of Economic and Business History, II (May, 1930), 520, 540-41.

skill must be available in sufficient abundance to insure production "in the most economical manner." Finally, Hewitt felt that "there must be indomitable energy and strict integrity in the management; that is to say, the iron business can only exist where people are essentially industrious, intelligent, energetic, and honest."¹² While Hewitt's statement prominently reflected his own position as an Eastern ironmaster, a number of his observations accurately characterize the plight of Western operators making railroad iron. One of their most keenly felt difficulties was transportation.

Both historians of the iron industry and practitioners in ante-bellum America seem generally agreed on the applicability of Hewitt's second and third points. Transportation facilities were indeed crucial in the successful prosecution of iron and rail production. Even if a given ironworks had all the raw materials readily available, its problems were still serious. Once basic pig iron was ready for further treatment, most facilities could go no further. Rolling mills, particularly rolling mills for producing rails, were often not immediately adjacent to iron production facilities. Unity of all materials and production facilities in one location was one advantage which British and Welsh ironmasters enjoyed at the expense of American producers. It was

¹²Abraham S. Hewitt, "On the Statistics and Geography of the Production of Iron," A Paper Read before the American Geographical and Statistical Society (n.p.: Feb. 21, 1856), 16.

a disparity which Americans understood quite clearly.¹³ Even granting the likelihood of a comprehensive production facility with raw materials available, the product, even rails, had to be delivered. This was one factor against which Western Maryland iron rail production and industrial development had to contend.¹⁴

However, despite this difficulty, one recent scholar has defined Western Maryland's coal trade as "commercially significant" by 1820.¹⁵ Indeed, the region's natural resource endowment was substantial enough to provide material for twenty-two surveys and reports between 1824 and 1840. Financed by both the state of Maryland and various private concerns, their authors included John Henry Alexander, the State Engineer, and noted geologists Benjamin Silliman and Charles Lyell. Undoubtedly one important enhancement to the economic opportunities afforded by Western Maryland's mineral wealth was the seemingly bright future for the region's

¹³Bishop, History of American Manufactures, I, 590, II, 423; Bowden, Industrial History, 197; Edward S. Cowdrick, Industrial History of the United States (New York: 1923), 140; Norris, Frontier Iron, 100-4; Hunter, "Financial Problems," *ibid.*, II (May, 1930), 532; Mechanics' Magazine, L (Jan. 26, 1850), 66.

¹⁴Frederick Gutheim, The Potomac (New York: 1949), 224-26; John B. Pearce, A Concise History of the Iron Manufacture of the American Colonies up to the Revolution and of Pennsylvania to the Present Time (Philadelphia: 1876), 147; Rev. Thomas J. Stanton, A Century of Growth or the History of the Church in Western Maryland (Baltimore: 1900), 19; William McAlpine Richards, "An Experiment in Industrial Feudalism at Lonaconing, Maryland, 1837-1860" (M.A. thesis, University of Maryland, 1950), 1-18.

¹⁵Harvey, Best Dressed Miners, 5.

transportation facilities. The middle 1830's witnessed surveys for both rail and canal systems in Western Maryland. The potential for the region seemed most rich and promising for exploitation.¹⁶ An observer writing in Niles' Weekly Register in 1842 brought together a great deal of the sentiment:

Altogether, this region [Western Maryland] unites more of the advantages of a mineral and manufacturing country than are to be found, in the same extent in any place in the world. The coal is equal, for all manufacturing purposes, to the best mines of Wales. The iron ore is rich and abundant, and the appearance of the county, and the facility of obtaining the minerals with which it abounds is said to bear a strong resemblance to the coal and iron regions of Wales.¹⁷

This, of course, is the kind of tract worthy of the most ardent and eager promoter or chamber of commerce. Some regions and states were not above deliberate misrepresentations of their natural resources. At the very least, subsequent history, historiography, and more modern geological analysis have proved that the "strong resemblance" between Western Maryland and Wales was more hopeful than actual.¹⁸

¹⁶Ibid., 8; John Henry Alexander, Report on the Manufacture of Iron; Addressed to the Governor of Maryland (Annapolis: 1840), 91-93; Annual Report of the Geologist of the State of Maryland—1839, 8; Maryland Geological Survey—Allegany County, 62-63, 70-75; Hunt's Merchant's Magazine and Commercial Review, IV (Jan., 1841), 71; Niles', LXI (Oct. 26, 1841), 71, LXIII (Oct. 22, 1842), 123, LXV (Jan. 6, 1844), 297.

¹⁷Niles', LXIII (Nov. 26, 1842), 207.

¹⁸Norris, Frontier Iron, 3; Maryland Geological Survey—Allegany County, 165.

But no one who visits Cumberland should fail to see the Mount Savage Iron Works, distant, by rail, ten miles. It is an immense establishment . . . in the very heart of the wilderness, where only 5 years ago grew the mountain oak and sugar maple, a scene which almost realized the enchantment of eastern fable. . . . The works, as you may imagine, are really stupendous, and there are about 200 tons of iron manufactured a week. It is the only American establishment extensively engaged in the manufacture of heavy railroad iron. . . .

The Cumberland Alleganian
September 27, 1845

The making of rails may be considered the most pleasant and easy branch in the whole extent of the iron manufacturing business.

Frederick Overman—1854
The Manufacture of Iron in All Its
Various Branches

CHAPTER II

THE CAREER OF THE ENTERPRISE

An ante-bellum industrial entrepreneur was hardly in a position to benefit from either historical or geological "enlightenment." Accordingly, several groups pushed ahead with the development of Western Maryland's mineral wealth during the middle and latter 1830's. Besides coal mining, which had a continuing existence in the region, at least one group began a more comprehensive sort of development. The George's Creek Coal and Iron Company combined the power of the British capitalization with the prestige and considerable talent of John Henry Alexander, Maryland's state engineer and president of the firm. The company's facilities were located near the middle of the George's Creek coal basin in Lonaconing, Maryland, several miles south of Mount Savage. Their operations included mines for both coal and iron ore, and a large blast furnace for the production of pig iron. The furnace and facilities are of particular note as they were probably the first in the country to produce coke and employ it in the smelting of iron ore on an industrial scale. The ambitions of the company ran very high, for besides considerable brick-making machinery, which was in operation by 1840, their plans included the eventual production of iron

rails.¹ These important developments helped to foster the industrial climate which eventually supported the Mount Savage Iron Works.²

The community of Mount Savage was founded during or shortly after the Revolutionary War. It remained a small, rural farming community until 1838 when the Maryland and New York Iron and Coal Company began construction of the iron-producing facilities that would be among the largest in the country—the Mount Savage Iron Works. Again, the original capitalization of the concern was English though the corporate creation struck roots ten years deeper into the past in the Maryland Mining Company. The firm's plant eventually comprised one of the most impressive industrial arrays in ante-bellum America. There were several thousand acres of land for mining operations; coal, iron ore, and fire-clay. Three blast furnaces, among the largest in the country, comprised the smelting sector of the operation, though only two of them were ever in blast. The third "stack," larger than the 50 foot height and 15 foot "bosh" measurements of the two original furnaces, was begun in 1845, but never lined for use. The rolling mill and refinery

¹Undated handwritten report, John Henry Alexander, Alexander Papers, Box 1, Maryland Historical Society, Baltimore.

²Clark, History of Manufactures, I, 413; Gutheim, The Potomac, 201, 221-23; J. Russell Smith, The Story of Iron and Steel (New York, 1922), 53; Strassman, Risk and Technological Innovation, 24-25; Richards, "Industrial Feudalism," 8-11; Joseph T. Singewald, Jr., "Report of the Iron Ores of Maryland, with an Account of the Iron Industry," Maryland Geological Survey, Volume IX (Baltimore: 1911), 133-34; Alexander, Report on the Manufacture of Iron, 123, 181.

boasted the best equipment of the day. Its facilities consisted of three trains of rolls, seventeen puddling furnaces, six reheating furnaces, and three special refineries for sheet iron production. The company had their own coking and brick-producing facilities. Its foundry was a fully equipped specimen of its contemporaries. The entire plant was powered by two very large steam engines. The firm's facilities also included a road constructed between Mount Savage and Cumberland. After it began rail production, the company built a rail line over the same nine mile distance, though both the management and rolling stock were apparently the property of the Baltimore and Ohio Railroad. Nor was this all, for the over three hundred houses which the company constructed for its workers began the "real life" of the industrial community of Mount Savage.³

Construction of the works began bravely enough, despite at least one contemporary warning which cast some measure of doubt upon the quantity and reliability of Western

³Charles E. Beachley, comp., History of the Consolidation Coal Company, 1864-1934 (New York: 1934), 8; Bishop, History of American Manufactures, I, 591; Charles C. Carney, "The History of Mount Savage" (May, 1967) Study Prepared under the Direction of Project Number 67-014-005, Community Service and Continuing Education Program—Title I of the Higher Education Act of 1965 (Mimeographed.), 1; J. Peter Lesley, The Iron Manufacturer's Guide to the Furnaces, Forges, and Rolling Mills of the United States (New York: 1859), 83-84, 244; John Thomas Scharf, History of Western Maryland (Philadelphia: 1882), 1, 429-30; Swank, History of Iron, 256; James Walter Thomas and T. J. C. Williams, History of Allegany County, Maryland (Cumberland, Md.?: 1923), 489-90; Hunt's, IV (Jan., 1841), 53; XXI (Nov., 1849), 460.

Maryland's iron ore resources.⁴ The building at Mount Savage was evidently pushed ahead with amazing vigor. The operatives' living quarters were apparently of only slightly less concern than the actual productive facilities of the Works. Numerous pieces of correspondence between Robert Graham, superintendent of the George's Creek Works, and various agents for the company in Mount Savage attest to this. The principal concern was for lumber to construct dwelling houses in Mount Savage. As the George's Creek concern operated a sawmill in addition to its other interests, it could fulfill the larger firm's demands.⁵ Though the principal commerce between the two firms was in lumber, Graham's desire to "unload" surplus materials to the Mount Savage firm is evident.⁶ Subsequent correspondence does not indicate whether Mount Savage's superintendent purchased the candles and gunpowder which Graham offered. The exchange between the two was not without its difficulties, however. Low water in Lonaconing prevented the George's Creek company from making a delivery of lathes on schedule.⁷ On the other

⁴William Alexander to John Henry Alexander, Aug. 14, 1838, Alexander Papers, Box 1, Maryland Historical Society.

⁵Robert Graham to Benjamin B. Howell, Sept. 19, Oct. 1, Nov. 13, 27, 1840, George's Creek Coal and Iron Company Letterbook, 106, 109-10, 119, 123, Maryland Historical Society [Hereafter cited George's Creek Letterbook.].

⁶Robert Graham to Superintendent, Mount Savage Iron Works, Dec. 4, 1840, George's Creek Letterbook, 125-26.

⁷Unnamed, though in Graham's handwriting, to Superintendent, Mount Savage Iron Works, Nov. 6, 1840, George's Creek Letterbook, 117.

hand, the Mount Savage Works manifested some tendency to miss its assigned monthly payments; a characteristic which would eventually contribute to its undoing.⁸ However, the two firms' business was apparently of an even-handed nature, and beneficial to both. By 1845, Henry Thomas Weld, the agent in Mount Savage of the company's British backers could write to Graham in Lonaconing concerning characteristics and construction hints on various kinds of company housing in service at Mount Savage.⁹

In addition to strictly local business impact and interchange, the operations and intentions of the Mount Savage firm came to occupy a clearly defined place on the national level as well; for the domestic production of iron rails was a warmly-debated issue. As late as 1842, an editorial in the American Railroad Journal could state with complete truth that the United States had no firm capable of manufacturing heavy-edged rail. Nor did American business commentators unanimously favor the development of domestic rail production. Many factors impressed contemporaries as prohibitive. The sythe of growing rail demand cut with a double edge. The crucial problem of transportation in efficient iron production remained constant. The special demands of unusually heavy costs and highly skilled labor posed special obstacles for rail manufacturing. All these

⁸Graham to William Alexander, March 27, 1842, George's Creek Letterbook, 201.

⁹Henry Thomas Weld to Graham, July 20, 1845, George's Creek Letterbook, 255.

led some editorialists and ironmasters to conclude that the future of American railroad iron production lay exactly there—sometime in the future.¹⁰ The operations at Mount Savage began to attract wide public attention during the fall of 1842. An article in a British publication took note of the work's pioneering efforts in the use of coke in iron smelting.¹¹ A number of articles in American trade publications also took extensive account of the developments in Mount Savage. Apparently the company was undertaking its operations with the clear intention of meeting the westward-advancing railroads of America. More fanciful projections of the Works' future envisioned the erection of as many as twelve blast furnaces.¹² Indeed, one writer described the Mount Savage Works with breathtaking optimism:

The facilities here for manufacturing cheaply cannot be surpassed, if equalled—with the exception of the cost of labor—even in England. The furnaces are situated at the base of the hill, and so far below the entrance to the mines and ore beds, and limestone quarry, which require no effort to drain them, that the cars with these materials may be brought to the mouth of the furnaces by gravity; and the rolling mill is still lower than the furnaces, so that the "pigs" may be taken out in the same manner. The descent from these works to Cumberland is nearly 100 feet to the mile, so that a locomotive will take down more loaded cars than it can bring back empty ones.¹³

When the first rails passed through the rolling mill at Mount Savage sometime during the summer of 1844, no

¹⁰American Railroad Journal, XV (Sept. 15, 1842), 161-64.

¹¹Mechanics' Magazine, XXXVII (Oct. 15, 1842), 362.

¹²Niles, LXVII (Sept. 14, 1844), 20.

¹³Ibid.

immediate attention greeted them. Later in the fall, however, specimens of the works' products were exhibited at many cities throughout the eastern United States.¹⁴ The Works' initial production went to fulfill two immediate demands. First, the firm completed a nine mile rail line to Cumberland to link with the Baltimore and Ohio Railroad's tracks which had reached Cumberland two years before. Apparently their first contracted rails were for the lines of the Fall River Railroad Company of Massachusetts.¹⁵ The price of the 1,000 tons of rails, \$59 per ton delivered in Fall River, was well within the company's claim "to deliver any quantity of bars 10% cheaper than they can be obtained from Europe under the present tariff."¹⁶ The chief commerce with the Baltimore and Ohio upon the immediate completion of the works' railroad to Cumberland was not in rails but rather in coal transportation.¹⁷ Perhaps the most notable accolade accorded the works during their initial production of rails was from Philadelphia's prestigious Franklin Institute. Subsequently the beginnings of Eastern Pennsylvania's anthracite-fueled rail production facilities would remove the Institute's

¹⁴Niles', LXII (Nov. 2, 1844), 133.

¹⁵Journal of the Franklin Institute, 3rd series, VIII (Dec., 1844), 382-83; Niles', LXVIII (Nov. 2, 1844), 133.

¹⁶American Railroad Journal, XVIII (July 10, 1845), 446; Niles', LXVI (July 20, 1844), 336.

¹⁷Niles', LXVII (Sept. 14, 1844, 20; American Railroad Journal, XVII (Oct., 1844), 319-20.

spotlight from coke-burning Mount Savage.¹⁸ However, a review of the fourteenth Exhibition of American Manufactures in December, 1844, praised its product with enthusiasm:

No. 2705 a bar of edge railroad iron of the U form, rolled by the Mount Savage Iron Works, near Frostburg, Maryland, forwarded by Col. Young, the manager. This bar, 18-1/2 feet long, weighs 40 pounds to the yard lineal. . . . This bar is amongst the first edge rail yet rolled in the United States, and it demonstrates beyond the reach of cavil, that edge railroad iron can be well manufactured in America. This bar is well-proportioned, sound, and well finished; it is the first ever exhibited here of American make; we hail it with pleasure as the beginning of a new manufacture, and award to it A Silver Medal.¹⁹

The ensuing two years witnessed prosperity for the medalist works. Both rail production and coal mining enjoyed much success. Some accounts discussed the Mount Savage facility as the most heavily capitalized operation of its kind in America—a figure in the neighborhood of \$1.5 million.²⁰ The community of Mount Savage swelled to nearly 3,000 under the influence of the works' 500 employees and their families, while local observers anxiously noted the uncomfortable direction of Congress on the iron tariff.²¹ In March, 1846, the board of directors elected J. M. Howe of Boston president to replace William Young, who had resigned.²² Except for a

¹⁸Journal of the Franklin Institute, 3rd series, X (Dec., 1845), 377-78.

¹⁹Journal of the Franklin Institute, 3rd series (Dec., 1844), 382-83.

²⁰Niles', LXVIII (Nov. 15, 1845), 172.

²¹The Cumberland Alleganian, Sept. 27, 1845; Niles', LXVII (Sept. 14, 1844), 20.

²²The Cumberland Alleganian, Mar. 6, 1846.

vague indication that his salary had been reduced,²³ nothing remains to account for the departure of Mr. Young, who brought experience from several American ironworks as well as management and engineering experience from the Utica and Schenectady Railroad to the Mount Savage operation.²⁴ Young's dissatisfaction becomes even more mysterious as the company's subsequent career indicated no break in its prosperity and success. Later the same month, the Mount Savage concern signed a contract to furnish one-half the rails to the Baltimore and Ohio Railroad necessary to relay the thirty miles of track between Baltimore and Harper's Ferry. The company's share of the contract amounted to between two and three thousand tons of rails, and seemed to hold the promise of greater things. However, the developing tariff policy of Congress was a most ominous sign indeed.²⁵

Whether or not the duty reduction on iron effected by the Walker Tariff manifested itself immediately at Mount Savage is not clear. Operations continued through the winter of 1846, though in December a Cumberland editor saw fit to squelch some current rumors concerning the closing of the works.²⁶ However, by March, 1847, some degree of financial

²³Undated and unsigned memo in J. H. Alexander's handwriting, Alexander Papers, Box 1, Maryland Historical Society.

²⁴Niles', LX (Aug. 28, 1841), 416, LXVII (Sept. 14, 1844), 20.

²⁵American Railroad Journal, XIX (April 18, 1846), 251; Niles', LXX (March 28, 1846), 64.

²⁶The Cumberland Civilian, Dec. 11, 1846.

difficulty began to manifest itself at the works. The problem lay in dissatisfaction of the workers with the company's payroll policy. The firm was unable to pay its men in full each payday. Though for a time the possibility of a strike seemed imminent, the operations continued while Benjamin Howell journeyed to England to negotiate a loan to pay off the wages due.²⁷ A work stoppage occurred at the end of June, with wages again the issue, but operations quickly returned to normal.²⁸ However, very rapidly the situation took an unexpected turn as a Cumberland editor regretfully stated "that on Wednesday morning a new difficulty occurred [at the Mount Savage works] not connected with the subject of wages, which has again thrown matters into confusion."²⁹

Though the relationship of the wages problem to the confusion is by no means as clear as the editor would have it, there was no denying that the Mount Savage Works was in serious financial trouble. An 1847 contract for grapeshot with the government found the company with insufficient credit to secure iron.³⁰ Among the several judgments standing against the company,³¹ the most crucial dealt with a series of defaulted notes. In June, 1846, the board of directors

²⁷The Cumberland Civilian, March 12, 1847.

²⁸Ibid., June 24, 29, 1847.

²⁹Ibid., July 2, 1847.

³⁰Beachly, History of Consolidation Coal, 11.

³¹The Cumberland Civilian, Aug. 17, 1847.

negotiated a loan of \$30,000, secured on six notes of \$5,000 each. The board scheduled repayment of two notes per month on the fourth, fifth, and sixth month following June 24, 1846. The loan apparently failed to right the company's finances.³² In August, 1847, the local press announced that on the seventh of October the Mount Savage Works would be sold at public auction. In this respect the experience of the firm differed little from that of the iron business nationally.³³ In Eastern Pennsylvania between 1840 and 1850, 120 of the region's 364 iron-producing facilities "passed through the sheriff's hands" for public sale.³⁴ Few firms, however, could boast the kind of high-level experience and expertise of the new group which came into control of the Mount Savage Works.

Indeed, the company's new ownership and management represented outstanding figures in ante-bellum transportation and industrial development. The group had struck quite a bargain, as their purchase was a bit over \$200,000, something less than one-fifth of the works' capitalized value.³⁵ Erastus Corning, perhaps the most prominent of the purchasers, had enjoyed a long and prosperous career as a merchant and railroad man in New York State. Most notably, Corning had

³²Samuel M. Semmes vs. The Maryland and New York Iron and Coal Company, Vol. 171, Chancery Record of Allegany County, Maryland, 1847, 744-46.

³³The Cumberland Civilian, Aug. 17, 1847.

³⁴Clark, History of Manufactures, I, 373.

³⁵American Railroad Journal, XX (Nov. 20, 1847), 737.

served as president of the Utica and Schenectady Railroad from 1823 to 1853 and was instrumental in the organization of the New York Central system in the mid-1850's.³⁶ John Murray Forbes of Boston was Corning's close associate on the firm's new board of directors. The product of business experience in both Europe and the Orient, where he developed ties with Britain's powerful House of Baring, Forbes was most active in the promotion of railroads in America's opening trans-Allegheny West. He served as president of both the Michigan Central and the Chicago, Burlington and Quincy Railroads. Apparently Forbes was somewhat dissatisfied with the new Western Maryland holdings, but his skill and experience were no less valuable than his vast business connections and acquaintances.³⁷ Undoubtedly, the railroad interests of the Mount Savage Works' new ownership helped to assure the firm some measure of business. However, the mercantile activities of both Corning and Forbes in importing rails brought them into competition with themselves.³⁸

Contending against his partners' "divided interests" was the firm's new president, John Flack Winslow. Winslow brought a rich store of experience as an inventor, engineer,

³⁶Irene D. Neu, Erastus Corning, Merchant and Financier, 1794-1872 (Ithaca, N.Y.: 1960), 30.

³⁷Chandler, Poor, 108-11; Sarah Forbes Hughes, ed., Letters and Recollections of John Murray Forbes (Boston and New York: 1899), 121-22; Henry Greenleaf Pearson, An American Railroad Builder—John Murray Forbes (Boston and New York: 1911), 9.

³⁸Neu, Corning, 84.

and ironmaster to Mount Savage. Previously he had been employed in various business houses in Albany, New York, an ironworks in New Jersey, and as the manager of the Albany Nail Works, one of Corning's firms. Winslow's efforts must have been of a high quality, for in 1837 Corning invited the still-young man into partnership. At Mount Savage, Winslow's aggressive and hard-headed approach brought the facilities into working condition, as he relentlessly sought a rail contract with the Baltimore and Ohio for their extension to the Ohio River.³⁹

Though Winslow's negotiations with the Baltimore and Ohio brought no results, preparation work at Mount Savage continued unabated through the last years in the 1840's. Immediately after the New York group's purchase of the Works, the name of the facility underwent a series of changes.⁴⁰ The original chartering legislation for the new group of capitalists was carried out under the name of the Lulworth Iron Company. Their charter entitled the group to a capitalization of \$500,000 with the power to increase the stock to \$1,000,000—all at \$100 per share. Also the company gained the right to survey for and lay railroad track with the understanding that their operations would interfere with the routes of neither the Baltimore and Ohio Railroad nor

³⁹Neu, Corning, 39-49; Report of the Commissioner of Patents for 1852, Part I, Arts and Manufactures, Exec. Doc. 65, 32nd Cong., 2nd Sess., 348.

⁴⁰The Cumberland Civilian, Nov. 12, 1847, Jan. 21, 1848.

the Chesapeake and Ohio Canal.⁴¹ However, the legislature's subsequent enactment changed the firm's name to the Mount Savage Iron Company.⁴² Whatever its name, the firm maintained limited operations in its smelting, rolling, and brick-making facilities into the early 1850's.⁴³ At the same time, the company brought in additional skilled labor⁴⁴ and improved the transportation facilities by extending its rail lines in Cumberland into better juxtaposition with local warehouse and wharf facilities.⁴⁵

These measures placed the Mount Savage Works in a strong position to take advantage of the railroad construction boom of the middle 1850's. The works' particular engineering contribution to the campaign was a widely hailed development, the design and production of what contemporaries referred to as the "compound rail." The rail was an attempt to achieve the hope of all railroad travelers in history—one continuous rail. Winslow sought to achieve this by laying two longitudinally split rails together, secured with rivets and bolts, while advancing each successive "half rail" a

⁴¹Laws of Maryland, December Session, 1847, ch. 297, Law to Incorporate the Lulworth Iron Company (passed March 1, 1847).

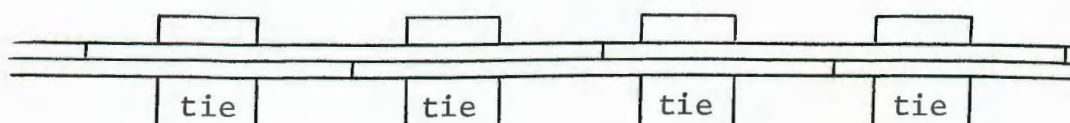
⁴²Laws of Maryland, 1847-48 Session, ch. 57 (passed Feb. 7, 1848).

⁴³The Cumberland Civilian, Aug. 11, 1848, Aug. 23, 1850, Jan. 17, 1851.

⁴⁴Ibid., May 19, 1848.

⁴⁵Ibid., Oct. 18, 1850.

distance of about one-half its length.⁴⁶ The view looking down on one rail laid in the compound form would probably be something like this:



Though subsequent developments in both engineering and metallurgy made Winslow's development obsolete, contemporary opinion praised the compound rail highly. Both editorial and engineering authorities seemed to agree that the rail represented a solid technological advance that eased maintenance demands and made rail travel more comfortable.⁴⁷ The use of the rail on no less than twelve roads in the northeast and midwest forecast a future of prosperity for the works.⁴⁸ A Cumberland editor expressed the region's mood and hopes in this connection during the spring of 1851:

We are gratified to learn that the Blast furnaces at this important place [the Mount Savage Iron Works] are now in full operation, and that on Monday next the Rolling Mill will again go into operation for the manufacture of the celebrated Compound Rail that has already won so much reputation throughout the country. We trust that Mount Savage and the surrounding region will now experience a substantial change for the better and that

⁴⁶Watkins, "Development of American Rail and Track," Smithsonian Institution Annual Report, 1889, 677-79.

⁴⁷The Cumberland Civilian, March 14, April 25, Aug. 22, 1851; The Cumberland Miners' Journal, Dec. 12, 1851; American Railroad Journal, XXIV (April 12, 1851), 233-34, (Aug. 9, 1851), 409.

⁴⁸Neu, Corning, 84; American Railroad Journal, XXIV (Aug. 9, 1851), 409.

prosperity will hereafter prevail in that interesting region of the country.⁵⁰

The decade of the 1850's was the period of the Mount Savage Works' greatest prosperity. Under Winslow's management, the firm's labor force grew to more than 900 hands, and the population of Mount Savage approached 5,000.⁵¹ Crucial to the continued success of the works was a contract secured at last from the Baltimore and Ohio Railroad for new rails.⁵² Another important customer for the works' rails was the Cumberland and Pennsylvania Railroad. This road, chartered in 1852 and based in Mount Savage, was an important industrial partner to the Ironworks. Under identical management, their operations were to work a decided impact upon the region's coal trade.⁵³ The works were shut down in December, 1857,⁵⁴ but resumed operations of both the smelting and rolling operations in the spring to make rails and fulfill a government contract for cannonballs.⁵⁵ Intermittent runs of rail contracts and shutdowns alternated through the remainder of the decade. The shutdowns must have been particularly severe, as they sent people from Mount Savage to seek other employment. This sort of existence was most expensive

⁵⁰The Cumberland Civilian, April 18, 1851.

⁵¹The Cumberland Miners' Journal, Feb. 25, March 11, 1853.

⁵²The Cumberland Telegraph and Maryland Mining Register, Jan. 15, 1857.

⁵³Ibid., Jan. 15, 1857.

⁵⁴Ibid., Dec. 24, 1857.

⁵⁵Ibid., April 22, May 27, 1858.

to an industrial enterprise in which continuous operations were the most economical and beneficial. The works carried on this intermittent schedule in a context of growing British competition and local worry about America's tariff policy.⁵⁶

Early in 1860, the Works began operation after a considerable period of inactivity. Apparently times had been hard in the region, and the reopening of the Mount Savage facilities was hailed with relief as a prominent force to aid in returning prosperity to Western Maryland.⁵⁷ Later in the year the influence of John Murray Forbes helped to secure the services of a new plant manager for the facilities. Charles Russell Lowell, a nephew of the poet, had experienced a wide variety of industrial and railroad employment for his twenty-five years. Following graduation from Harvard, he had worked for Abraham Hewitt at his rolling mill in Trenton. Subsequently, he found employment with Forbes and spent several years in Burlington, Iowa, serving in the management of the Chicago, Burlington, and Quincy Railroad. Letters Lowell wrote during his brief residence in Mount Savage indicated that the works were again operating at far from their capacity. Apparently, Lowell yearned for a more involved sort of life, for after four months in Mount Savage he volunteered for service in the United States cavalry

⁵⁶The Cumberland Telegraph and Maryland Mining Register, June 3, 10, Aug. 19, Sept. 9, Oct. 14, Nov. 25, Dec. 16, 1858, March 3, 1859; The Cumberland Democratic Alleganian, Oct. 9, 1858; The Cumberland Civilian and Telegraph, June 9, 1859.

⁵⁷The Cumberland Democratic Alleganian, Feb. 4, 1860.

and found a distinguished career and a hero's death in the Civil War.⁵⁸

The Civil War years at Mount Savage are difficult to trace. The rolling mill was in operation in 1862, and a newspaper county business directory listed the Works in 1863.⁵⁹ However, the most significant event in the company's history of the war years had little to do with the conflict. In 1864, the recently incorporated Consolidation Coal Company acquired title to the firm in Mount Savage. All the Works' facilities, machinery, tenement accommodations, as well as the entire equipment and rolling stock of the Cumberland and Pennsylvania Railroad, passed into the Consolidation Company's hands for the payment of 22,000 shares of capital stock.⁶⁰

After a period of idleness which put several hundred out of work during the summer and fall of 1865, the Works began operations in January, 1866. Later that same month, the Works acquired a new president. James T. Milholland had previously seen extensive service as an engineer and railroad engine builder with the Reading Railroad in Pennsylvania. His new position in Mount Savage placed him in charge of the operations of both the Ironworks and the facilities

⁵⁸Edward W. Emerson, Life and Letters of Charles Russell Lowell (Boston and New York: 1907), 1-16, 191-96, 399.

⁵⁹The Cumberland Civilian and Telegraph, Sept. 18, 1862, Jan. 10, 1863.

⁶⁰Beachly, History of Consolidation Coal, 13-17; The Cumberland Civilian and Telegraph, May 5, 1864.

⁶¹Ibid., Aug. 10, 1865, Jan. 11, 1866.

of the Cumberland and Pennsylvania Railroad.⁶² By the summer of 1866, Milholland apparently was directing the business of the two firms with aggressive gusto. The Cumberland and Pennsylvania began an extensive expansion of its machine shop facilities at Mount Savage.⁶³ To meet a long-expressed need in the community, a four-story hotel with accommodations for 150 guests began to take shape.⁶⁴ Nor did Milholland neglect the Ironworks' operations. In July, 1866, he successfully negotiated with John W. Garrett, president of the Baltimore and Ohio Railroad, for the re-rolling of several thousand tons of rails.⁶⁵

Apparently operations in all sections of the Works continued on through the summer of 1867.⁶⁶ The facilities of the Cumberland and Pennsylvania system continued to grow to the stage where locomotives and railroad cars were under construction during the summer of 1867.⁶⁷ During the fall the rolling mill began production of rails for the replacement

⁶²Mechanics' Magazine, 2nd series, IX (May 8, 1863); The Cumberland Union, Jan. 27, 1866.

⁶³Ibid., June 15, 1866.

⁶⁴Ibid., Ele [sic] Bowen, Rambles in the Path of the Steam Horse (Philadelphia: 1855), 255; Hughes, Letters and Recollections, 121-22.

⁶⁵James Milholland to John W. Garrett, July 21, 1866; Printed memo, Garrett to Milholland, July 23, imprinted stock dated 1865, Baltimore and Ohio Papers, Maryland Historical Society.

⁶⁶The Cumberland Civilian and Telegraph, July 4, Aug. 22, 1867.

⁶⁷Ibid., Aug. 15, 1867.

of the existing iron on the Cumberland and Pennsylvania tracks.⁶⁸ In the spring of 1868 the Works completed a contract for both railroad iron and rolling stock for a firm in Kentucky, but in April the Mount Savage company announced the closing of its rolling mill facilities, the furnaces having been out of blast for some time.⁶⁹

Following the 1868 shutdown, the Works' parent company no longer found it profitable to operate the iron production facilities or the rolling mill at Mount Savage. However, the Consolidation Company did lease the facilities to at least two Pennsylvania-based firms for the production of pig iron only.⁷⁰ The furnace was in blast at least once during the late winter and early spring of 1870.⁷¹ After prolonged inactivity, the rolling mill facilities were dismantled in 1875.⁷² Today all that remains of the once extensive facilities are the half-buried and crumbling remains of two blast furnaces, a few hundred yards from the successor to the Works' brick factory, the still-prosperous Union Manufacturing Company.

Numerous causes contributed to the eventual abandonment of iron and rail production at Mount Savage. The

⁶⁸The Cumberland Union, Oct. 1, 1867.

⁶⁹The Cumberland Civilian and Telegraph, March 12, April 2, 1868.

⁷⁰Ibid., Dec. 10, 1868, Aug. 26, Sept. 16, 1869, Feb. 1, 1872.

⁷¹Ibid., March 10, 1870.

⁷²Neu, Corning, 51.

available data suggests a number of them operated over the entire span of the company's existence. From the beginning, transportation difficulties plagued its operations. Through the late 1840's and most of the 1850's, a tangled pattern of high labor costs in a highly competitive market, nationally and internationally, posed severe problems to the Works' management. The management was highly competent and almost too practical under tight conditions. Of necessity they made their decisions on the basis of practical considerations, and this helped bring the end of iron production at Mount Savage. In the final analysis, however, the shortcomings of the region's natural resources proved the most telling. Neither local iron ore nor coal had sufficient quality (nor the iron ore suitable quantity) to produce the best grade of iron or compete with improved production techniques elsewhere and the opening of the Lake Superior ore beds and Connellsville coke region of Pennsylvania.

We can do it, and shall do it. Let those who have already done so much to elevate American character, in improvement of American machinery, give their attention to the manufacture of railroad iron, as they have to other important subjects, and we shall ere long be able to supply the demand for railroad iron in this country from our own mines.

American Railroad Journal
March, 1843

In spite of temporary checks and adverse legislation, the Anglo-Saxon steadily widened the circle of his enterprises, until the sound of his hammers rung throughout the whole extent of the populated portion of the republic. . . .

John Leander Bishop
History of Manufactures in the
United States

Is he [the editor of a local pro-tariff newspaper] still in favor of the low duty on Iron, which has almost destroyed the manufacture in Allegany county?

The Cumberland Civilian
March 17, 1848

CHAPTER III

THE TARIFF—THE INDUSTRY—THE COMMUNITY

During the nineteenth century, it is doubtful whether any national legislative issue concerning American industry and manufacturing was the subject of closer scrutiny or wider attention than the tariff. This is particularly true of the ante-bellum years, before land subsidies, direct financial aid from the federal government, or the peculiarly positive and benevolent American hybrid of "laissez-faire" economic policy became the cornerstones for the construction of industrial and transportation empires. Though the most common sort of opinionated division on the tariff question found industrial interests opposing agriculturally oriented groups, the situation of the Mount Savage Iron Works and the tariff on railroad iron represented a more curious alignment. The fierce opponents who confronted one another over the rail iron duty were none other than American ironmasters and rail producers on one hand, and American railroad men on the other. The issue seemed to be chiefly of an interindustrial nature.¹

American travel on the "permanent way" until after the Civil War found the country moving upon rails that were

¹Chandler, Poor, 181.

usually of British fabrication.² Indeed, the vital need which the railroad could fill in speeding economic development was recognized to the extent that a contemporary could observe with some truth that even the Mount Savage Works "owes its existence to the Baltimore and Ohio railway of imported iron."³ The commentator's remark encapsulated the situation quite well. An ante-bellum ironmaster, engaged in rail production or not, was part of a newly self-conscious and professional group of men whose operations on a large scale were complex, expensive, and exacting. They were trying to succeed. In "opposition" to these were the no less self-conscious or professional railroad men. At once vital to economic development and potentially of a most remunerative character, the railroads were in a much stronger position to vie for congressional favors than ironmasters. Seemingly, such items as passes and stock helped enhance the public value of railroads in the eyes of politicians dedicated to an economic philosophy in support of improvements beneficial to the people at large.⁴

Indeed, it was fortunate that American tariff policy was so hard on ante-bellum rail producers. Had protection for them been at all effective, the cost of railroad

²Fogel, Railroads and Economic Growth, 150; Hacker, The Triumph of American Capitalism, 257.

³Hunt's, XII (March, 1845), 234.

⁴Bruchey, Roots of American Economic Growth, 137-38; Cochran and Miller, The Age of Enterprise, 78-79; Cole, American Business Enterprise, 213; Haney, Congressional History of American Railroads, 315.

construction would have soared far above the astronomical level it attained, thus discouraging further building and slowing or retarding economic development. This difficult and basically unfavorable situation posed serious problems to large-scale American ironmasters, particularly those engaged in rail production. Their perceptions and responses show them to have been a self-conscious and professional group in a frustrating position. The tariff and the somehow commensurate machinations of British rail manufacturing became industrial "bogey men." The situation in Mount Savage and Western Maryland was mirrored in various degrees at other rail producing towns in ante-bellum America. Though the perspective of history and economic analysis make it clear that often early ironmasters attributed far too much of their own bad situation to the tariff's influence, a social treatment of industry's impact must understand this rather than condemn it. In general it is very difficult to draw exact or precise parallels between tariff levels and industrial development. Clearly, their influences of diverse character were important, and it is very doubtful whether the structure of American tariff policy has either increased or inhibited the growth of any important American industry.⁵

⁵Fishlow, American Railroads, 134; Benjamin Franklin French, History of the Rise and Progress of the Iron Trade of the United States from 1621 to 1857 (New York: 1858), v; Taylor, Transportation Revolution, 366; Temin, Iron and Steel, 24; The Bulletin of the American Iron Association (Philadelphia: 1856), 1.

The ante-bellum relationship among American rail producers, American railroad builders, and British rail manufacturers presented a strange picture indeed. They were all attempting to develop a pattern for success in the relatively new arenas of heavy industry and transportation. Though their goals and expectations were more or less identical, their tactics, means, and perceptions of each other differed widely. British heavy industry was the most extensive in the world by the 1840's. Geographically concentrated, technologically mature, and financially secure, Britain's iron industry was everything that America's was not. The British did not really have to compete. During the ante-bellum years, they held all the industrial cards.⁶

The ante-bellum American railroad builder was a prime customer for the English manufacturers in a number of respects. Perhaps most significant at first was the availability of capital and credit from across the Atlantic to finance railroad ventures. The Yankee railroad men were strange indeed when compared to their British cousins. Quite distinct from the English pattern of exact and precise design and construction that achieved the most measured and efficient use of steam power on a most rationalized and stable road, the American performance in ante-bellum railroading was an engineering circus. When compared to the English roads, those in America seemed to be literally thrown

⁶Harry Scrivenor, History of the Iron Trade from the Earliest Records to the Present Time [London: 1854] (New York: 1963) passim.

together. The premium was on speed in all respects.⁷ The financing was only a step or two behind the engineering of ante-bellum American railroads. Precursing in some sense the post-Civil War experience, the railroad men were worried principally by the initial costs of their operations. Maintenance was not a factor of particular worry, nor were long-term considerations a factor for serious attention. This set of business operating perimeters made the American railroad men liable to the use of less than the best materials. This was acutely irksome to their fellow countrymen who were attempting to supply their needs in this respect. Abraham Hewitt fulminated over the fact that "the vilest trash which could be dignified by the name iron went universally by the name of the American rail."⁸ American ironmasters were often prone to defend their more expensive production as therefore somehow better than the English. The case was often as groundless as it was vehement. Through it all, John Bull sat with equanimity; for he had his own explanation:

That rails made for the American market were inferior to all others is easily explained by the fact that they were often paid for in bonds of even greater inferiority in value. American railways, that is to say, many of them, have been constructed of a material which the Japanese have adapted to even more purposes of utility than we have done, viz. paper. Portmanteaued and coat pocketed with paper, its surface variegated with various written characters of a promisory significance, the financial representatives of many American lines have performed in England feats little short of alchemy, for

⁷Fishlow, American Railroads, passim; John H. White, Jr., American Locomotives: An Engineering History, 1830-1880 (Baltimore: 1968) passim.

⁸Quoted in Temin, Iron and Steel, 22.

they have very, very often transmitted their paper into iron, and sometimes even into gold.⁹

Though apparently the English rail producers shared some measure of the financial disability imparted to their American counterparts, their overwhelming technical and financial superiority remained. Conditions and developments in both America and Europe reinforced this. Since early railroad construction in America did not strike deeply into the West, American rail producers, whatever their location, were rendered vulnerable to English competition. The timely coincidence of the end of the boom in British railroad construction with the outbreak of the revolutions of 1848 and the resulting cessation of European internal improvements depressed the price of English rails. This made them even more attractive to American buyers.¹⁰ The status of American production facilities coupled with these developments could well give an American ironmaster cause for concern. Indeed, one observer perceived a well-developed scheme of events that seemed almost like a conspiracy.¹¹ However, within the comprehensive pattern of shortcomings which characterized ante-bellum iron manufacturing in America, a problem which

⁹Bulletin of the American Iron and Steel Association, III (Feb. 3, 1869), 169.

¹⁰Neu, Corning, 50; Temin, Iron and Steel, 115.

¹¹French, History of the Iron Trade, 54-55, passim.

stood out for particular attention was the price of American labor.¹²

Contemporary sources and some subsequent observers defined the scarcity of labor, and its attendant high price as the principal reason behind the iron interests' cry for tariff protection. Other reasons the iron producers cited in their plea for higher tariffs were lower interest rates in England which permitted easier building and experimentation in industry, the British backlog of necessary experience and expertise, and the more immediate character of economic and political developments. Despite the fact that labor-saving techniques gained a quick and wide acceptance in American manufacturing as a whole, the iron business seems to have been industry's "ugly duckling." Some doubted whether America would ever be able to attain a competitive position in iron production chiefly on the basis of the scarcity of American labor. Though the obvious course in this situation would be to pay lower wages, this was difficult for several reasons. An American might still find employment in another remunerative pursuit. Apparently nothing much would prohibit a puddler from leaving employment in the iron business to dig on a canal or even farm. But perhaps more significantly, the sort of degradation which low wages imparted to labor was something Americans were fond of foisting off upon the British. American contemporaries

¹²Bishop, History of American Manufactures, II, 423; Swank, Iron in All Ages, 498-501.

theorized that the starvation, nakedness, and lack of hope which universally characterized British labor should not find a counterpart in this country.¹³

Whatever the complexities underlying its enactment, a tariff of some kind was the solution which ante-bellum Americans settled upon to help ease the difficulties of the iron industry and its rail producers. This, despite the facts that for the most part tariffs were not the answer to the problems of the ante-bellum iron industry and American rail manufacturers were not able to supply the article as cheaply as it could be imported—even with a duty.¹⁴ Strangely enough, America had a duty on imported railroad iron long before the erection of the first rail producing facilities at Mount Savage and Brady's Bend. This was the case until 1832 when legislation in effect exempted incorporated concerns from the duty by permitting a refund of the fees provided that the iron was laid in three years' time. Opposition to this "duty free" entry apparently grew through the late 1830's and early 1840's. This sentiment found legislative form in the Tariff of 1842 whose schedules imposed a duty of \$25 per ton on railroad iron imported

¹³Bishop, History of American Manufactures, II, 423; Bolles, Industrial History, 200; Bruchey, Roots of American Economic Growth, 166-67; Clark, History of Manufacturing, I, 383-84; French, History of the Iron Trade, 108-9; Scrivenor, History of the Iron Trade, 79; Hunt's, XXI (Nov., 1849), 461; Bulletin of the American Iron and Steel Association, V (Sept. 7, 1870), 1.

¹⁴Haney, History of Railroads, 300-1; Shannon, American Economic Growth, 214-18.

into the United States. Railroad interests, among many others, were quick to oppose the tariff. The significance for American railroad builders lay in the fact that American rail producers were now roughly competitive with their English rivals. A change, however, occurred with the Walker Tariff of 1846, which provided a 30% "ad valorem" rate for railroad iron. This would add a cost of 30% of the rails' market value. The provision proved vexing to American rail manufacturers because it was considerably lower than the earlier \$25 a ton. In addition, the duty reduction of 1846 on rails was part of a much larger pattern of successive duty reductions on all forms of iron in tariff enactments from 1842 to 1862. However, the controversy in which the Mount Savage Works was most involved dealt with the shift from the rate of 1842 to the rate of 1846.¹⁵

On the broadest scale, the Tariff of 1846 attempted to lend some further measure of stability to industry and commerce in America. Its enactment coincided with England's repeal of the Corn Laws; and her reorientation toward a more responsible international economic policy of free trade. Though the duty which the Walker enactment placed on iron may well have served to speed modernization in the American iron industry, the matter is by no means crystal clear.¹⁶

¹⁵Bishop, History of American Manufactures, II, 624-25; Haney, History of Railroads, 302-16; Scrivenor, History of the Iron Trade, 276; Hunt's, IX (Nov., 1843), 476; Niles', LXVIII (Nov. 8, 1845), 152-56.

¹⁶Shannon, American Economic Growth, 181-82, 222.

The provisions of the 1842 tariff had increased the number of iron and rail producers, and the change in policy aroused a long-lasting debate of considerable complexity.¹⁷

Supporters of the Walker tariff could muster an impressive brace of arguments. The nature of the iron business, most particularly that involved in producing rails, was simply beyond the means of American manufacturing—financially and technologically. What tariff proponents defined as the "uncertainty" of the market, a possible reference to railroad construction policy, further mitigated against domestic rail production. In addition, the more or less favorable policy which the Tariff of 1842 upheld had promoted too great a rush into iron and rail production. Despite their obvious scarcity, facilities were established without sufficient planning. Their locations often did not account for the practical consideration of raw material availability and transportation. The whole affair lacked the requisite hard-headed responsibility and acumen which was necessary for sound iron production.¹⁸

As the importance of railroad iron imports increased during the railroad construction boom of the 1850's, the tariff position of American iron rail producers grew weaker.¹⁹

¹⁷Bishop, History of American Manufactures, II, 448; French, History of the Iron Trade, 65; American Railroad Journal, XXII (March 24, 1894), 184.

¹⁸Hunt's, XII (Jan., 1845), 66-69, (March, 1845), 233; Mechanics' Magazine, LII (Jan. 26, 1850), 65; Niles', XVIII (Nov. 8, 1845), 156.

¹⁹North, Economic Growth of the United States, 78-79.

Many people came to believe that even the duty of the Walker tariff was imposing too severe a burden upon the growing American railroads. Groups who favored the admission of railroad iron duty-free had little sympathy for American producers, and argued that these companies simply could not meet the demands of domestic railroads. Yet the duty which was to protect them really did not do so, but served only to raise the price of rails and impose an unnecessary burden upon railroad men. While the same groups could favor raising duties upon common bar iron, their stand on railroad iron persisted. The construction of a railroad, besides constituting a decided improvement to economic development and transportation, created a consumption of iron that exceeded twice the tonnage devoted to rails. This could hardly provide comfort, satisfaction, or customers to a contemporary American rail producer. The importance of railroads to the United States was simply too great to permit the interests of domestic rail manufacturers to stand in their way economically.²⁰ Groups opposing American rail manufacturing found an enthusiastic ally in British rail producers. "Why," they pointedly inquired, "do you tax your railway companies by raising the prices [of rails] upon them, for the support of your trade?"²¹

²⁰American Railroad Journal, XXV (Oct. 9, 1852), 441-42, (Oct. 16, 1852), 644, (Nov. 13, 1852), 722, (Dec. 25, 1852), 817-18.

²¹Mechanics' Magazine, 2nd series, V (May 3, 1861), 300.

Sentiment and action favoring domestic iron production and rail manufacturing varied in both form and appeal. Contemporary arguments ranged from a measured assessment of a difficult set of circumstances,²² through essentially sound technical works whose analysis broke down completely when confronting the tariff problem and British competition,²³ to cheerleading tracts whose content and delivery bordered on fiction.²⁴ As the economic conditions surrounding rail imports began to change in the early 1850's, supporters of the iron interests outside their own community found it harder and harder to maintain a realistic position. Even some who had once advocated a tariff came to favor the free entry of rails.²⁵ Within the iron producing ranks, the results of numerous conventions, meetings, and memorials indicated a substantial self-consciousness and self-interest. The arguments and rhetoric of these gatherings assumed a number of distinct postures. Future success of the country demanded that America have her own rail producing facilities. The spectre of continued dependence upon Great Britain, especially, was most galling. Many iron producers felt that the "ad valorem" duty was at least partially at fault; and doubly dangerous in that it could damage both American

²²Hewitt, Statistics and Geography of Iron Production.

²³French, History of the Iron Trade.

²⁴James Dunwoody Bronson DeBow, The Industrial Resources, etc., of the Southern and Western States (New Orleans: 1853).

²⁵Chandler, Poor, 181-86; American Railroad Journal, 1850-1853.

rail manufacturers and railroad builders. Brisk demand would raise rail prices, thus sending the duty skyward with the ad valorem system to injure companies importing rails. Conversely, sly British manipulation contrived to undercut American ironmasters by confusing prices and falsifying documents to make imported rails seem cheaper than they were. Some contended on this account that the tremendous impact of American export demand upon British rail production would so tax its capacity as to raise the price (and hence the duty in this case) to a point above that which rails could be produced in America. As usual, the high cost of labor formed another prominent part of the ironmasters' arguments as did the somehow superior "character" of both American iron producers and production. The producers also continued to argue that American iron was of a quality superior to the imported British product.²⁶

The position of the Mount Savage Works on the national level of the controversy was most anomalous. There is no positive evidence that anyone from the Works was involved with a convention of Maryland ironmasters which met in Baltimore during November, 1849.²⁷ Winslow was apparently

²⁶Bruce, Virginia Iron Manufacture, 264; Proceedings of a Convention of Iron Workers Held at Albany, New York on the 12th Day of December, 1849 (Albany, N.Y.: 1849), 4, 12, 16, 17, 40-41; American Railroad Journal, XXII (March 24, 1849), 184, (May 26, 1849) passim, (Sept. 1, 1849), 540-51, (Dec. 1, 1849), 752-54; Hunt's, XXV (Sept., 1851), 299-302; Niles, LXVII (Feb. 1, 1845), 339, LXVIII (Nov. 8, 1845), 152-56.

²⁷French, History of the Iron Trade, 131; American Railroad Journal, XXIII (Feb. 21, 1850), 68-69.

a prime mover in organizing the Albany convention earlier in 1849. However, the "divided" character of Mount Savage's management and ownership may have contributed to the Works' lack of convention representation as well as its position on other issues relevant to the life of its industrial community. Erastus Corning was actively involved on both sides of the tariff issue. As a prominent stockholder in the Mount Savage Works and president of the New York Ironmasters' Association, he had no small interest in the maintenance of a duty on railroad iron. Yet, as a railroad man, he imported thousands of tons of railroad iron through the agency of his own concern, Erastus Corning and Company. The problem stood revealed in bold relief during January and February, 1855, as congress debated the remission of duties on railroad iron for its importers. Winslow was in Washington arguing against the issue, while Corning employed a professional lobbyist to favor it!²⁸ And in Allegany County, the problem was debated with warm interest indeed.

The tariff controversy in Western Maryland coalesced most sharply around the election of 1848. Editorial sparring began early in 1848 and continued intermittently through the first half of the year. The principal issue besides that of the tariff itself seemed to revolve around the price of labor and the understandable reluctance of labor to accept

²⁸Neu, Corning, 52; Proceedings of the Albany Convention, 1.

a cut in pay.²⁹ The first overt political appeal for the tariff occurred in August. Clearly, the company felt, a vote for Cass was tantamount to bequeathing the county to industrial oblivion.³⁰ Very shortly, the issue gained its most partisan expression. After discussing the distressing effects of the tariff policy upon a number of ironworks in Pennsylvania, the Whig editor in Cumberland truculently asserted that:

The same cause that stopped these works prevent the Mount Savage Iron Works in our own county from going into operation. The propriators are men of great capital and mature experience, and yet the want of protection makes the works idle, and throws thousands of the laboring men of Allegany out of employment. CASS AND BUTLER, WE ARE FORCED TO SAY, ARE INFAVOR OF KEEPING THE LABORING MEN OF ALLEGANY OUT OF WORK AT THE ROLLING MILL AND FURNACE. CASS AND BUTLER WOULD SEE EVERY MAN, WOMAN AND CHILD, WHO DEPEND ON THE IRON WORKS AT MOUNT SAVAGE FOR SUBSISTENCE, PERISH OF STARVATION, SOONER THAN ELEVATE THE DUTIES ON IRON AND COAL!³¹

The effect of such rhetoric cannot be measured precisely. In this election, however, Mount Savage may have deserted the Democratic camp for perhaps the only time in its history.³² In 1848 the Frostburg election district, which included Mount Savage, returned a narrow majority of 15 for Taylor and Filmore.³³

²⁹The Cumberland Civilian, Feb. 18, March 3, 17, May 5, June 23, 1848.

³⁰Ibid., Aug. 25, 1848.

³¹Ibid., Sept. 1, 1848.

³²Carney, "The History of Mount Savage," passim.

³³The Cumberland Civilian, Nov. 10, 1848.

After the election concern for the tariff slackened to only occasional references through the 1850's. Throughout the remainder of the ante-bellum years, coal began to assume a more prominent position than iron in the views of editors concerned with the region's economic prosperity. There persisted, however, a peculiar sensitivity against railroad men so unpatriotic as to import foreign rails when the Mount Savage Iron Works could turn them out in a "superior style." In 1859 Mount Savage, curiously enough, favored a free trader in an election for the state legislature.³⁴ Perhaps the most interesting local commentary upon the tariff's influence occurred in 1852. John Flack Winslow, the works' president, was in England to negotiate the purchase of an order of foreign rails for a company in Indiana. What made the situation so unsettling was that a significant portion of the order was of the compound rail of Winslow's own design! A Cumberland editor sadly complained that:

The policy of our Government, in refusing protection to our own manufactures, has thus forced the President of one of the most splendid Rolling Mills in the country, to purchase rails in England, of a form, the patent for which is held exclusively by himself.—With sufficient protection these 5000 tons of Compound Rail might have been manufactured in a superior style at Mount Savage in this county. To what extent our farmers, merchants, mechanics and operatives generally, would be benefitted thereby, we leave the people of the county to calculate. . . .³⁵

³⁴The Cumberland Civilian, July 6, 13, Aug. 31, 1849, Nov. 22, 1850, Dec. 26, 1851, July 23, 1852; The Cumberland Telegraph and Maryland Mining Register, Nov. 18, 1858; The Cumberland Civilian and Telegraph, Sept. 22, 1859.

³⁵The Cumberland Miners' Journal, March 26, 1852.

You alight [from the train] among the smoking furnaces and forges and vast heaps of cinders at Mount Savage, near the foot of the mountain range of that name, a village of 4000 inhabitants, gathered from various nations, mostly employed in the iron works and the mines, and living in cottages.

William Cullen Bryant—1860

Fire in every horrible form: pits of flame waving in the wind; liquid metal flames writhing in tortuous streams through sand; wide cauldrons filled with boiling fire, over which bent ghostly wretches stirring the strange brew; and through all, crowds of half clad men looking like revengeful ghosts in the red light hurried, throwing masses of glittering fire. It was like a street in Hell.

Rebecca Harding Davis
"Life in the Iron Mills"
Atlantic Monthly—April 1861

Mount Savage is, in the best sense of the word, a prosperous town, whose people, socially and intellectually, are not surpassed by the people of any section of Maryland, and if we view the commercial side of Mt. Savage life, we find a perfect hive of activity.

Rev. Thomas F. Stanton
The History of the Church in
Western Maryland

CHAPTER IV

THE IMPACT—REGION AND COMMUNITY

It is perhaps unfortunate that the foregoing editor did not himself proceed with the calculation of the Mount Savage Works' benefits to the region's "farmers, merchants, mechanics, and operatives generally."¹ Most of the existing evidence about the impact of the Works on the people of the area comes from the press. While this is not altogether undesirable, a rigorous examination of industrial technology's impact upon a community and region must seek to go beyond the impressions of editorial commentators. The Works made its most decided impact on the very lives of many people, and this part of the investigation is at once the most rewarding and meaningful. The relatively isolated town of Mount Savage provides an opportunity for a microscopic study of technology's impact on ante-bellum America by industry's involvement with its immediate community. Also, both the nature of the problem and the relevant source material suggest other considerations. Beyond the facility's purely local effects upon Mount Savage, larger scale topics such as a region's perception of its potential for economic growth, as well as the growth's nature and patterns become relevant.

¹The Cumberland Miners' Journal, March 26, 1852.

Indeed, it was precisely this kind of interplay which industry seemed dedicated to fostering in its literature and propaganda. Iron and rail production were tremendous benefits to America's still primarily agricultural population. Or, so the iron industry liked to believe. Iron workers had to be fed, and railroads brought farm goods to market. Both groups would profit.² The post Civil War American Iron and Steel Association pointed this out clearly in alleging that "the best customer the American farmer has is the American iron worker, and some day he [the farmer, presumably] will recognize this fact."³ Both observers in ante-bellum Western Maryland, and subsequent commentators seem basically agreed upon a prominent element of self-conscious industrial potential and a pivotal role for the Mount Savage Works in regional economic prosperity. They accomplished this principally by reinforcing crucial transportation and economic links with the East through local transportation development and their Baltimore commercial connections.⁴ Despite an allegation by the Baltimore and Ohio Railroad that the character of the demand for coal and

²Hunt's, XXV (Sept., 1851), 301; Niles', LXIV (July 15, 1843), 320.

³Bulletin of the American Iron and Steel Association, I (Feb. 6, 1867, Supplement).

⁴Stanton, History of the Church in Western Maryland, 86; Swank, Iron in All Ages, 434; James Walter Thomas and T. J. C. Williams, History of Allegany County, Maryland (Cumberland, Md.?: 1923), 453-54; Maryland Geological Survey, 141; The Cumberland Civilian, Nov. 20, 1846; The Cumberland Telegraph and Maryland Mining Register, July 23, 1857.

iron made resource development in Allegany County a "precarious undertaking,"⁵ local observers held an understandably contrary opinion. In 1846 a Cumberland editor undertook to calculate the benefits the people had derived from the Works. Mount Savage's 9,000 ton annual iron production capacity yielded approximately \$45,000 when marketed at the rather low figure of \$50 per ton. Deducting about \$4,500 for ore and fuel costs, a substantial figure remained. Without citing the evidence for his claims and clearly ignoring some important cost factors, the editor continues his paeon:

Thus we see a single rolling mill pays to the laboring men of Allegany, the Amount of forty thousand dollars per annum, for their services in the various processes of manufacturing railroad iron. . . . As multiplied as are the ramifications of society, so must be the modes in which the laborer expends the wages of his labor. Thus, all are benefitted, and for the most part, to a similar extent.⁶

Perhaps the largest scale impact which the Mount Savage facility helped work upon Western Maryland dealt, not unexpectedly, with transportation. In 1847, the commissioners of Allegany County examined the feasibility of altering the county's road system. The course of the road running from Mount Savage to the National Pike was to be altered so as to pass through the Ironworks and reach the Pike at a different point.⁷ Whether or not the change was ever affected cannot be determined. The Mount Savage Works' presence may also

⁵American Railroad Journal, XVII (Dec., 1844), 362.

⁶The Cumberland Civilian, Nov. 13, 1846.

⁷Ibid., Sept. 3, 1847.

have caused the George's Creek company in Lonaconing some trepidation as a competitor for transportation access. Constantly saddled by poor transportation facilities, the Lonaconing firm petitioned the Maryland Legislature for strong consideration of their needs when that body undertook studying an extension of the Chesapeake and Ohio Canal beyond Cumberland. The memorialists argued that the water shipped by Will's Creek offered far better opportunity for canal engineering than a course along Jennings' Run which would lead to the Mount Savage Works. Coincidentally, the Will's Creek course would tap the southern portion of the George's Creek basin at Westernport, Maryland; a decided benefit for the George's Creek company.⁸

However, it was in connection with the development of rail transportation allied to the region's coal trade that the Works promoted their principal effects upon Western Maryland. The nine miles of track that the firm laid down between Mount Savage and Cumberland were only a beginning for both passenger service and coal hauling.⁹ After the chartering of the Cumberland and Pennsylvania Railroad in 1850, the Works was in a better position to be active and instrumental in the development of the region's rail transportation, but apparently the Ironworks did not obtain a

⁸A non-dated memorial to the Maryland Assembly, Alexander Papers, Box 1, Maryland Historical Society.

⁹Niles', LXVII (Nov. 16, 1844); The Cumberland Alleganian, Aug. 16, 1845.

controlling interest in the railroad until 1853.¹⁰ The two firms carried this out in a number of different ways. They undertook construction of additional spur lines to open coal deposits to mining operations. The two were also active in promoting the interests of railroads in the surrounding regions. These were apparently undertaken with the idea of tapping the Western Maryland coal trade. Finally, hoping to promote and gain advantage from the coal trade, they prosecuted an ambitious building program to extend the lines of the Cumberland and Pennsylvania from Mount Savage to Frostburg and on into the northern end of the George's Creek basin. Particularly, the Cumberland and Pennsylvania formed a vital link in the excellent transportation system that permitted the rapid growth of the Western Maryland coal trade.¹¹

During 1857 two key episodes in the Ironworks' involvement in regional transportation occurred, and reaction to them prominently highlighted the decided effect of the Mount Savage company upon the region's economy. In April, 1857, a tunnel pierced the ridge of a foothill of Big Savage

¹⁰Beachley, History of Consolidation Coal, 12; The Cumberland Miners' Journal, June 10, 1853.

¹¹Carney, "The History of Mount Savage," 5; Harvey, Best Dressed Miners, 12, 165; Scharf, Western Maryland, 429-30; Stanton, History of the Church in Western Maryland, 89; Thomas and Williams, History of Allegany County, 452-53; American Railroad Journal, XXV (Sept. 11, 1852), 586; The Cumberland Civilian, Nov. 23, 1849, Oct. 18, 1850; The Cumberland Miners' Journal, Dec. 12, 1851; The Cumberland Telegraph and Maryland Mining Register, March 11, 1853, Jan. 8, 1856.

Mountain to bring the rails of the Cumberland and Pennsylvania under the town of Frostburg. The line reached Frostburg as early as 1852, greatly improving coal hauling in the county. A number of proposals for tunnels and routes around the town were discussed at that time.¹² A report of the opening of the tunnel in 1857 illustrated perfectly the brand of economic expansion observers hoped the region would enjoy as a result of this engineering achievement and transportation improvement:

In this connection we might remark that a large force of laborers are pouring into that neighborhood [Frostburg]. They all find ready employment at high wages, and we discover no diminution either as to the demand for hands, or in the rate of pay. An immense amount of work is to be done at the new mines about to be opened up and on the line of the extension of the Cumberland and Penna. Railroad. . . . This road is of great importance. It penetrates a region hitherto locked up for want of an outlet. It is rich in mineral resources, and their development will be hastened by the early completion of this road.¹³

Work on the line must have been pushed ahead as vigorously as the summer's editorials,¹⁴ for by December the lines of the Cumberland and Pennsylvania stretched south through the George's Creek Valley to Lonaconing. Again, contemporary observers linked the advancement of the rails to their hopes for a boost of the region's prosperity. The role of the Ironworks was clear:

¹²The Cumberland Miners' Journal, Sept. 14, 1852.

¹³The Cumberland Telegraph and Maryland Mining Register, April 9, 1857.

¹⁴Ibid., July 30, Aug. 13, 1857.

This road [the Cumberland and Pennsylvania], though operating under a separate and distinct charter, belongs to the Mount Savage Iron Works, and the work upon the extension involving a very heavy expenditure of means has been carried on without interruption all through the severe money pressure with which the country has been so grievously afflicted; and this has been done, too, at the same time the company was carrying on heavy operations at its Iron Works at Mount Savage. . . . The completion of this road will mark a new era in the coal region, and impart a new and invigorating impetus to mining operations at the threshold of the coming season.¹⁵

However, enhanced rail transportation also brought less materialistic benefits to the region. The Cumberland and Pennsylvania was lauded for such contributions as special efforts in transporting people when Saint Michael's Church was dedicated in Frostburg during the summer of 1870.¹⁶ For a revival meeting held near Lonaconing, the railroad put five special daily trains into service to insure adequate access to the services.¹⁷

Still, coal sounded the dominant note in transportation's association with the region, and the Cumberland and Pennsylvania's link to coal's success was widely recognized. With the addition of railroads to the developing mining complex in Western Maryland, the question of coal transportation costs attained a measure of importance, even during the antebellum years. Undoubtedly, the fact that the Cumberland and Pennsylvania Railroad was the property of the Mount Savage

¹⁵The Cumberland Telegraph and Maryland Mining Register, Dec. 17, 1857.

¹⁶The Cumberland Civilian and Telegraph, Aug. 18, 1870.

¹⁷Ibid., Sept. 10, 1868.

Iron Works and had no direct interest in concerns exclusively engaged in the coal business made mine managers uncomfortable. More concretely, there was a gradually increasing concern over the level of coal shipping rates, as editors pointed out the rising cost of mining operations even though wages paid to miners remained stationary. The burden of transportation costs, said the editors and mine managers, was causing the rise in the cost of mining coal.¹⁸

The connection between Mount Savage's production of iron and further progress in the region's coal mining was not nearly as crucial for the region as the firm's transportation undertakings. Though some contemporaries insisted that the Works' 150-ton-per-day coal consumption was the factor that held the fate of the region's coal mining, it simply was not so. Coal served the Mount Savage Works for a far shorter time and to a far less degree than the county's railroad system served coal.¹⁹

In the community of Mount Savage, perhaps the greatest impact of the Ironworks was the tremendous growth and change of the town's population. The opening of the Ironworks demanded a labor force far larger than the small Catholic

¹⁸Lowdermilk, History of Cumberland, 366; American Railroad Journal, XXV (April 17, 1852), 249; The Cumberland Civilian, June 29, 1849; The Cumberland Telegraph and Maryland Mining Register, June 21, 1855; The Cumberland Civilian and Telegraph, Dec. 24, 1868.

¹⁹Carney, "The History of Mount Savage," 3; Harvey, Best Dressed Miners, 3; The Cumberland Civilian, Sept. 21, 1849, Nov. 22, 1850; The Cumberland Telegraph and Maryland Mining Register, June 21, 1855.

farming community could muster. The original English management of the concern met this problem by importing laborers from England, Wales, and Ireland. Apparently the more skilled workers such as puddlers, rollers, or machinists were primarily from England and Wales. Most of the Irishmen were evidently classed as laborers. Though the building of the Baltimore and Ohio Railroad brought a significant number of people to Allegany County in 1842, the Mount Savage Works also contributed substantially to an even greater portion of the county's population increase. Between 1840 and 1850 the population of Allegany County rose from 15,690 to 22,769, and the presence of "outside" stock was striking: 3,273 of the county's residents were born outside Maryland and 5,095 were not native Americans. The increase of more than 7,000 people was three times that experienced by any other county in Maryland except Baltimore city and county. An informal count in Mount Savage during 1847 turned up some 4,000 residents, and the Ironworks was clearly the dominant factor. At least 2,500 people resided in housing that belonged to the Mount Savage Works.²⁰ Many of them could claim a record

²⁰Carney, "The History of Mount Savage," 1; Seventh Census of the United States (Washington, D.C.: 1853), 248-49; The Cumberland Civilian, Jan. 29, 1847; Washington, D.C., National Archives, Record Group 29, National Archives Microfilm Publications, "Population Schedules of the 6th Census of the United States—1840—Maryland" (Photocopy 704, Roll 484), 48-50, 68-77; "Population Schedules of the Seventh Census of the United States—1850—Maryland" (Microcopy 432, Roll 222), 30-53; "Population Schedules of the Eighth Census of the United States—1860—Maryland" (Microcopy 653, Roll 456, 106-113 [Cited subsequently as Manuscript Census Records].

of past residences that bordered on the cosmopolitan. In 1860 Samuel Danks was the Works' superintendent. He and his wife were natives of England. Their first son was born in Scotland, and the first daughter in New Jersey. Their five later children were native Marylanders.²¹ The superintendent's singular fecundity was apparently a characteristic of the employees as well. In 1847 the company-owned houses contained 800 children under the age of 10 years, and the births were averaging 1-1/2 per day. "That will do," wrote one editor.²²

The company housing for the employees was another very concrete example of industrial technology's impact upon Mount Savage. Contemporary observers count Mr. Bryant's "cottages" as between 200 and 320, though most estimates clustered around the lower figure. Apparently, the company's original construction program included at least two distinct types of dwellings. For its miners, the company generally provided dwellings of a log construction. They contained one room with a garret above, and cost about \$70 or \$80 to build. The better sort of houses which the company built for its employees were much more satisfactory and comfortable. Each side of the double block design had a two or three room basement of stone construction. The upper two floors on each side contained a kitchen, hall, and two rooms downstairs, and two rooms upstairs with a garret above. Today eleven

²¹Manuscript Census Records (1860), 113.

²²The Cumberland Civilian, Jan. 29, 1847.

examples of this "better housing" still stand in Mount Savage along one side of the valley that held the Ironworks. These presently-occupied homes, which are in excellent repair, were an enduring contribution to the community. Also, a number of the larger homes in present-day Mount Savage owe their origins to the residence requirements of the early industries' owners and management.²³

Within the dwellings, the particular pattern of residence is by no means clear. Ideally, perhaps, one family would occupy each half of one of the houses and this was the case in some instances. However, the overwhelmingly male and bachelor character of the Irishmen, coupled with the large numbers of families in general, pressed for other arrangements. Apparently as many as twenty single men often occupied a single dwelling, though the census records do not indicate whether this was in one side of the house or both. Two and three families also occupied a single dwelling in Mount Savage. Obviously large numbers of people living in a limited number of houses dictated the inevitable combinations. One and two families often shared a dwelling with various numbers of single men.²⁴

²³Bowen, Rambles in the Path, 254-55; Carney, "The History of Mount Savage," 7, passim; Thomas and Williams, History of Allegany County, 490; Hunt's, XXI (Nov., 1849), Thomas Weld to Robert Graham, July 20, 1845, George's Creek Letterbook, 255; Writer's personal inspection of the presently existing houses in Mount Savage in April, 1969.

²⁴Manuscript Census Records (1840), 47-50; (1850), 50-53; (1860), 106-13.

Within the community of Mount Savage, the relations between the company's labor and management were understandably pivotal to the town's economic life. During the ante-bellum years, the general position of labor was in a decline. Despite the general industrial prosperity and expansion, the laborer was losing ground. His limited gains did not nearly match those of industry. Among labor's responses to this—land reform, political activism, production cooperatives, unionization, and strikes—the workers at Mount Savage apparently preferred strikes.²⁵

Labor and management relations at Mount Savage were novel in a number of respects. A very close and perhaps personal relationship between laborer and supervisor was the pattern at smaller ironworks, but the very magnitude of the Mount Savage company signaled the beginnings of a new era in industrial and labor relations history. The size and scope of the operation advanced it beyond the intimate and total control which a manager had once been able to exercise.

Predictably, wage rates formed the nub of labor-management problems at Mount Savage. Led by the puddlers, at once the traditional "aristocrats" of iron production and a group chronically troublesome to early management,

²⁵Hacker, Triumph of American Capitalism, 257; Rayback, History of Labor, 71, 104; Philip Sheldon Foner, History of the Labor Movement in the United States (New York: 1947), 208; Norman Ware, The Industrial Worker, 1840 to 1860—The Reaction of American Industrial Society to the Advance of the Industrial Revolution [Boston: 1924] (Chicago: 1964), ix-xiv, 6, 27-30, 193-94.

labor troubles blossomed at Mount Savage on at least two occasions. The chief issue was apparently the maintenance of the customary wage level rather than an advancement. This was a clear response to Winslow's general policy of cutting pay levels to meet rising production costs.²⁶ A contemporary observer captured the stubborn and uncompromising spirit of the laborers of Mount Savage very well in 1849 in this management-biased description of their behavior:

These men [the workers at Mount Savage] are so banded together amongst themselves, and with the workmen at other establishments, that they will remain idle, or work at other business for 1/2 what the Company could afford to pay them, rather than abate one cent from their wages. Puddlers, for instance, who formerly received from \$3 to \$5 per ton, could now earn \$2 50 per ton, but prefer to work in the mines, or on the canal, for one half the amount. It is astonishing how successful they are in embuing all other workmen with the same obstinacy about coming to terms. In no other business do we find men preferring idleness, or scanty employment, to a remunerative compensation at their legitimate occupation, simple because they have been accustomed to receive more. . . . It is to be hoped that ere long, a peace in Europe, an alteration in the tariff, or a return to reason on the part of the workmen, will bring the superior article made at Mount Savage into general use on our Railroads.²⁷

The welter of non-American groups that found their way to Western Maryland during the 1840's and 1850's did not have an especially easy life. A lack of cooperation between groups as well as a measure of native prejudice were retarding influences. However, because of the influence of the Catholic

²⁶Birch, Economic History of British Iron and Steel, 191, 263; Clark, History of Manufactures, I, 393; Cole, Business Enterprise, 194-97; Neu, Corning, 47-50; Walker, Hopewell Village, 255-57; Richards, "Industrial Feudalism," 76.

²⁷Hunt's, XXI (Nov., 1849), 461.

Church, Mount Savage appears to have achieved a considerable degree of harmony. The substantially Irish immigration apparently integrated itself into the already Catholic community with little evident friction. Still, problems of another character remained. Mount Savage's original church, Saint Ignatius', was constructed in 1825, near the initial center of the community. The erection of the Ironworks some distance away necessitated a substantial migration for services. During the early 1840's, the Mount Savage parish was serviced as a mission by priests from Cumberland in spite of the fact that the company town's congregation outnumbered that of their "parent" parish. By the early 1850's the bulk of the congregation lived in the immediate vicinity of the Ironworks. The tremendous crush of parishioners must have made mass at tiny Saint Ignatius' a crowded affair indeed. In 1856, substantial discontent with the situation was current in the congregation. Apparently, the company resolved a serious set of problems when its management donated one-half an acre of ground closer to the Works as a site for the construction of a new church building. Excavation for the new church began in 1862. In 1865, Saint Patrick's, a massive English gothic structure of stone, was formally dedicated, and still serves the Mount Savage community. Industry helped provide the means to make the change which

its presence demanded; and a new name for the parish reflected its Celtic shading.²⁸

Indeed, the Irish of the Ironworks accounted for other significant alterations in the life of Mount Savage. The coming of a substantially new kind of population necessitated the evolution and expansion of a community's facilities for recreation. In Mount Savage, entrepreneurial initiative apparently was quick to confront the historic association of the Irish with alcoholic consumption.²⁹ Though neither the Ironworks nor Irishmen were directly in evidence, some concern for the proliferation of saloons in Mount Savage gained expression on July 29, 1853, in a Cumberland newspaper.³⁰ The editor's concern obtained at least one sympathetic ear in Mount Savage, for the next edition carried the following letter, fully bristled with additional information and at least a potential reformer's zeal:

In your last paper you say there are 27 grog shops at this place [Mount Savage], and that at but two, man and horse can be accommodated. It is, alas, truer than you stated it. As far as can be counted there are 32, and only two afford accommodations for man and beast, other than bald-face whiskey, beer, and pipe smoke. If all these places pay licenses, where are the accommodations their licenses call for? In one of the licenses of a regular tavern keeper, I find the following: "ordinary keepers are directed within two months after the date of their license to provide 6 feather beds, covering,

²⁸Carney, "The History of Mount Savage," 6; Richards, "Industrial Feudalism," 53; Scharf, History of Western Maryland, 20-21, 86-88; The Cumberland Civilian and Telegraph, April 13, 1865.

²⁹Nathan Glazer and Daniel Patrick Moynihan, Beyond the Melting Pot (Cambridge, Mass.: 1963), 217-87.

³⁰The Cumberland Miners' Journal, July 29, 1853.

etc., and stabling and provinder for 10 horses at least." Now I would like to know if the officers of the law are aware of these facts? And if they are, why do not they perform their duty?³¹

Whether or not drinking was ever a problem among the workers at Mount Savage is uncertain. In Lonaconing, however, employee intoxication was one of the management's major problems.³²

Of a potentially far more serious nature was the problem of industrial accidents. Here the impact upon individual families is as unquestionable as it is tragic. There were at least two fatal accidents concerned directly with the Ironworks' operations during the early 1850's when the Works were coming back into full operation.³³ Either the Mount Savage system of safety precautions was noteworthy in the ante-bellum years, or the newspapers considered accidents unworthy of notice. When the Baltimore and Ohio Railroad opened its own rolling mill facilities in Cumberland after the Civil War, the record of killings and disabling occurrences was gruesome.³⁴ Industrial fatalities did not necessarily have to be attributable to revolving rolls or a ruptured boiler, however. Following the shutdown of the works during the summer of 1847, a miner named Thomas left

³¹The Cumberland Miners' Journal, Aug. 5, 1853.

³²Richards, "Industrial Feudalism," 42-43.

³³The Cumberland Miners' Journal, May 13, June 10, 1853.

³⁴The Cumberland Civilian and Telegraph, Feb. 23, May 18, June 1, Dec. 14, 1871, Oct. 23, 1873, Sept. 24, 1874.

his wife and two children in Mount Savage and went to find work elsewhere. Mrs. Thomas and the children had not been seen for several days when an infant's wails in the Thomas house attracted neighbors. Breaking in the door, they confronted a scene of both tragedy and horror. Mrs. Thomas had died several days previously, leaving her children unattended and starving; one of them attempting to suckle a breast of the mother's partially decomposed body.³⁵

In a far more positive and beneficial sense, the Ironworks in Mount Savage aided in setting the community apart from much of the rest of Allegany County with respect to the acquisition of industrial trades and skills. While the coal trade brought general prosperity to the region through the nineteenth century, it was not the sort of activity which developed skill and expertise for things besides mining. In Mount Savage the situation offered far wider opportunities. The extensive industrial complex that included the ironworks, rolling mill, foundry, and brick-making operations gained a valuable addition, and eventual substitute, when the Cumberland and Pennsylvania Railroad began the expansion of its railroad construction and repair facilities. All these contributed to the development of an extensive apprenticeship system which promoted an entire range of industrial skills in the town's population. This

³⁵The Cumberland Civilian, Oct. 17, 1847.

was a phenomenon not without precedent in the history of industrial development.³⁶

While the company's presence in the region provided employment to large numbers of workers, its economic benefit could and did assume other forms. As an institution, the works contributed materially to charitable causes such as the County Alms House in Cumberland.³⁷ Since the Works' management drew very good salaries, the industrial plant in Mount Savage provided a limited number of individuals with substantial economic means. At least one high level manager engaged in direct philanthropy, and was properly rewarded by the press:

Generous Conduct—John A. Graham, Esq., President of the Mount Savage Iron Works has always hitherto been very liberal in his donations to the poor of this city—giving large amounts of wood and coal to relieve their wants during the inclemency of the weather. He now has very generously contributed 50 tons of coal for the same purpose.³⁸

When innovative and progressive benefits of any kind come to society, their effects are seldom of a wholly beneficial nature. This is particularly true in their early phases of interaction. Industrial development in ante-bellum America illustrated this process very well indeed. The interaction was both necessary and obnoxious. The position of heavy industry in pre-Civil War America was at once vital

³⁶Carney, "The History of Mount Savage," 4-8; Hartley, Iron Works on the Saugus, 14-15.

³⁷The Cumberland Civilian and Telegraph, July 7, 1859.

³⁸The Cumberland Telegraph and Maryland Mining Register, Jan. 29, 1857.

and peripheral; vital in that it established a base for subsequent industrial development, and peripheral in that it existed in a society which was still primarily agricultural. Yet, industry in this period was far from impotent. It made significant contributions of an enduring nature. The history of the Mount Savage Iron Works, and its community, illustrated this pattern admirably. The facility made a substantial impact upon its immediate surroundings while its significance in a national pattern of industry remained marginal at best. Though plagued by difficulties related to tariffs, transportation, and natural resources, the Works contributed prominently to the development of a railroad system that helped make Western Maryland a major coal producing area.

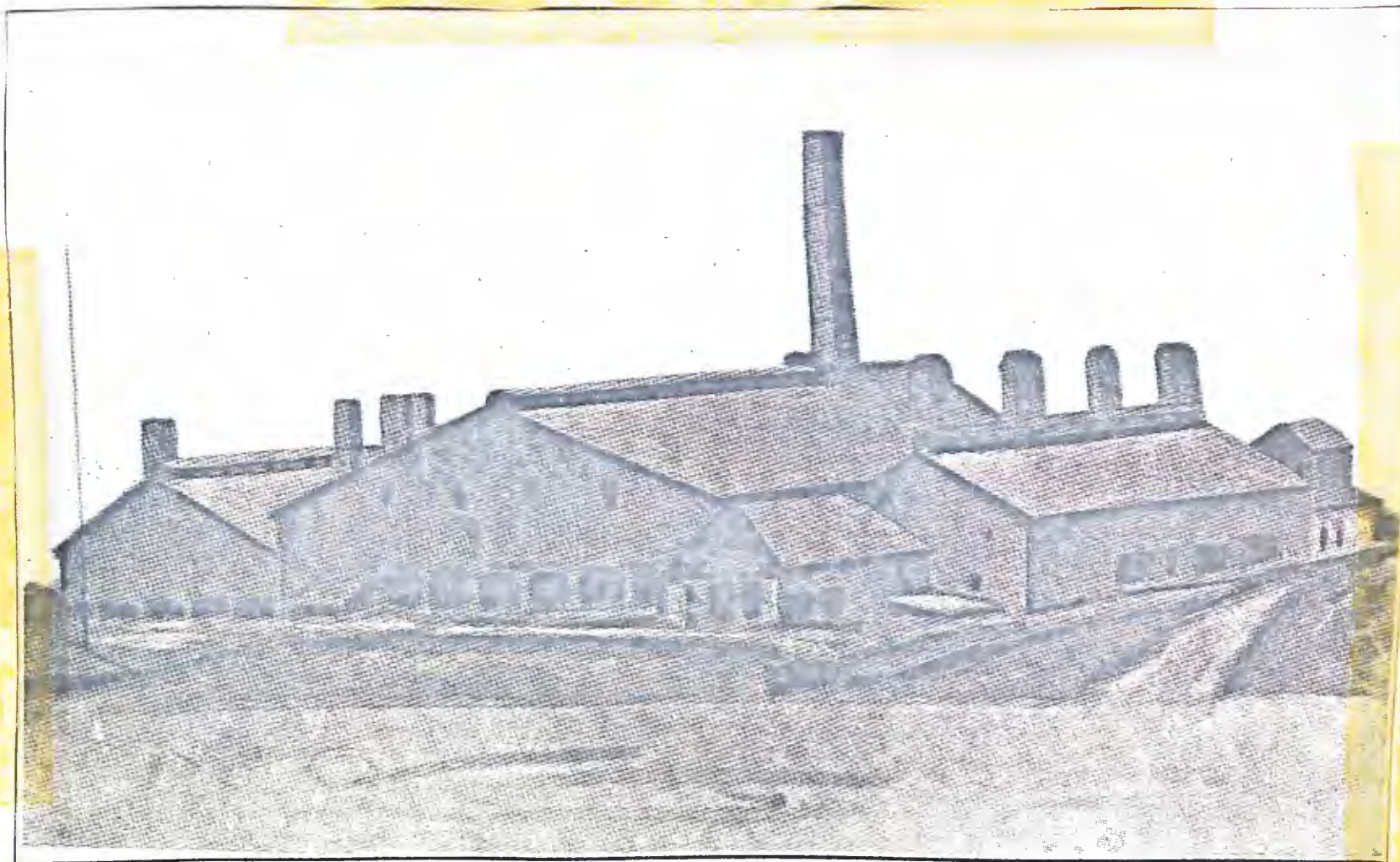
The company's impact on the life of the people of Mount Savage had its unhappy moments, but the favorable results were more numerous and they endured. Though work stoppages and accidents occasionally brought deprivation and sadness, the company's payroll enriched the community immeasurably. Under the company's influence, Mount Savage also received a great increase to its population, its housing, and its public facilities. Its industrial plant spawned a variety of firms in Mount Savage whose training provided the population with a range of manufacturing skills far wider than the region's normal activities of farming or mining. The brick-making industry of present day Mount Savage struck its roots with the opening of the Ironworks.

Saint Patrick's Church still serves the Mount Savage community—a physical and spiritual monument to the presence of industry in a corner of ante-bellum America.

APPENDIX

ILLUSTRATIONS

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The date of the original picture is uncertain. (From Thomas' and Williams' <u>History of Allegany County, Maryland.</u>)	
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Though dated 1854, this picture may be a copy of a lithograph prepared in 1852. (From Harvey's <u>Best Dressed Miners.</u>)	
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(Photographs by the writer.)	



OLD RAIL MILL

Erected at Mt. Savage, Allegany County, Md., in 1843. The first solid track rail made in America was rolled in this mill in 1844



Mount Savage Iron-Works, 1854

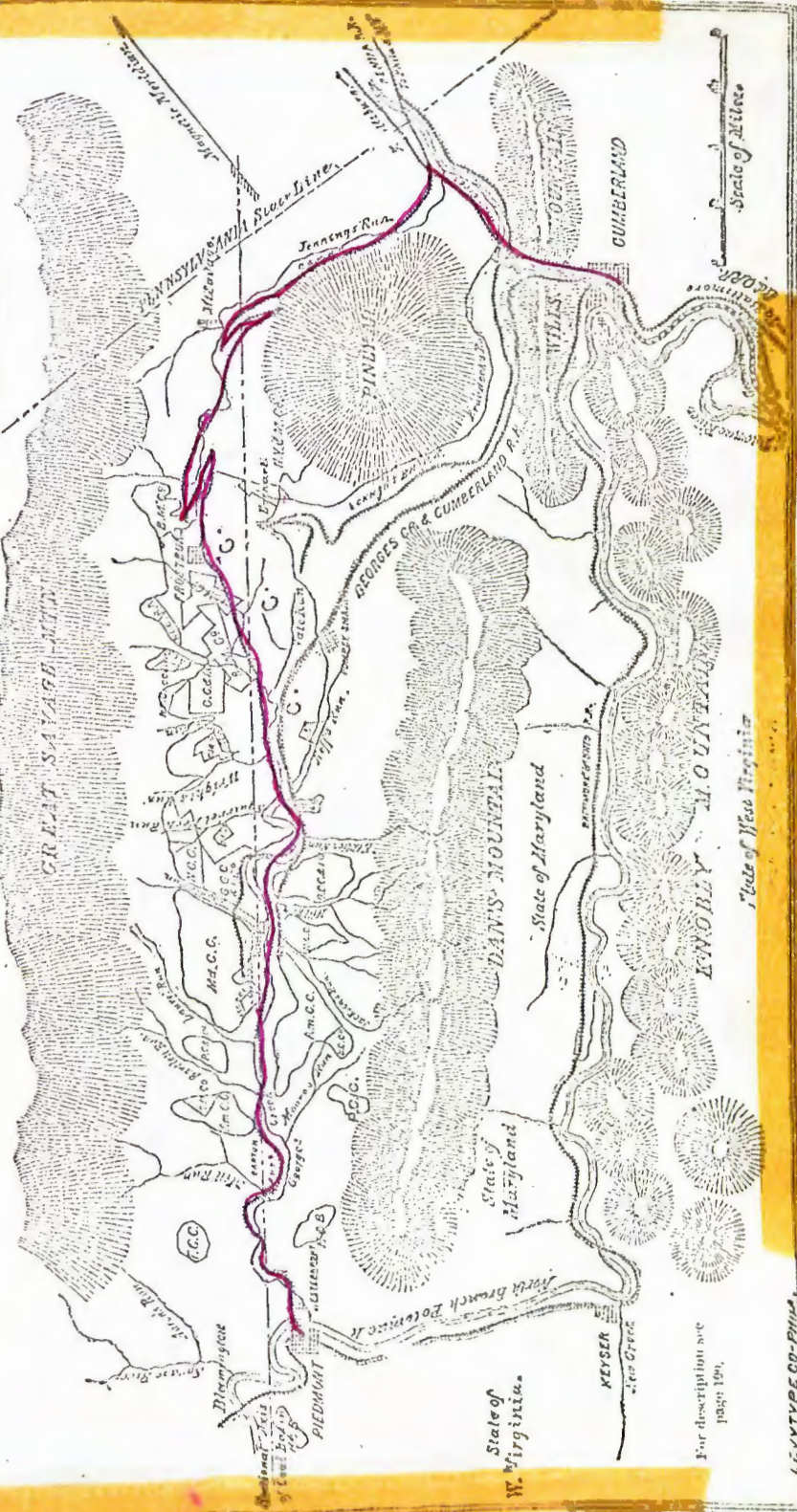
MAP OF THE CUMBERLAND COAL BASIN.

Showing the proportions of
THE GREAT COAL SEAM
OWNED BY VARIOUS COAL COMPANIES.

1880

Am. C. Co. American Coal Company.
A. C. Co. American Coal Company.
C. C. Co. Consolidated.
C. C. Co. New Central.
H. C. Co. Hampshire & Deale.
F. C. Co. F. C. Co. Coal.
B. C. Co. Blountsville.
B. C. Co. Barton.

G. C. Co. George's Creek Coal & Iron Co.
C. C. Co. Cumberland.
C. C. Co. Piedmont.
C. C. Co. Coal Iron & Oil Co.
H. C. Co. Horden Mining.
H. C. Co. Union.
S. C. Co. Sugarloaf.
A. C. Co. Atlantic & Georges Creek Coal Co.
J. C. Co. Jackson Coal Co.



For description see
page 191.

LEVY TYPE CO. - PHILA.





BIBLIOGRAPHIC ESSAY

Undoubtedly the best source of information concerning the Mount Savage Iron Works and its community would be the firm's records. These, however, have apparently vanished. At least research to this point has discovered no trace of them. The best single source for this study has been the files of the newspapers from Cumberland, Maryland, at the Library of Congress. The runs of the papers are intermittent from 1845 to 1875. With minor exceptions, however, at least one paper exists to cover the period other than a major gap running from the summer of 1853 until January 3, 1855. It is perhaps fortunate that Mount Savage had no newspaper, for the coverage that emerges in the sheet of another community serves as a kind of testimony in itself on the impact of the Works in the region.

Trade, industrial, and scientific periodicals were also of immense value in this study. Hunt's Merchants' Magazine and Commercial Review and Niles' Weekly Register were the best. Their pages represent a substantial distillation of a great deal of contemporary thought on industry, manufacturing, and engineering as well as an excellent source of statistical data. The Journal of the Franklin Institute, The Bulletin of the American Iron and Steel Association, more typically specific journals, were of less overall value, but

significant. Mechanic's Magazine provides a penetrating British commentary upon the course and nature of American industrial development.

Works on the history of Allegany County and Western Maryland have until recently suffered from being only of a local or official character. They are useful in obtaining an insight into local events, though the presentation is in an historical vacuum. Though old, the most satisfactory general work is still John Thomas Scharf's History of Western Maryland. James Walter Thomas and T. J. C. Williams' History of Allegany County is of a far more superficial nature, and contains factual errors. It should be used with care. The History of Cumberland, Maryland by Will H. Lowdermilk is much more reliable factually. The superficiality persists, however. Charles Beachley's History of the Consolidation Coal Company is admirable for a company history. His remarks on the industry and transportation of pre-Civil War Western Maryland are found nowhere else. The volume is not documented, however, and the present archivist of the Consolidation Coal Company was unable to locate for the writer any materials which Mr. Beachley might have used in writing his book. Father Thomas Stanton's volume on The History of the Church in Western Maryland is as filiopietistic as it is suggestive. His material on the church in Mount Savage is valuable, but the absence of explicit documentation prohibits further delving into his observations. Katherine Harvey's recent study, The Best Dressed Miners, is a valuable contribution

to the history of Western Maryland. In her generally careful and judicious book, the author examines the life of the region's coal miners. Her bibliography provided invaluable suggestions for further work on this study. The experience of the Mount Savage Works may eventually provide dramatic exceptions to some of the conclusions she makes about the region's industrial development. More research is necessary on this topic.

Few other sources directly touch either the life of the Works or the community of Mount Savage. An essay whose value is equaled only by its brevity is Charles Carney's "The History of Mount Savage." This piece by a lifelong resident of the community digests much of the relevant secondary literature and suggests further problems for investigation within a brief narrative of Mount Savage's history. The manuscript census records for 1840, 1850, and 1860 are at once valuable and disappointing. Sloppy work in gathering the original data makes their use difficult. Three collections in the archives of the Maryland Historical Society in Baltimore provide illuminating material in small doses. They are the Alexander Family Papers, the early Baltimore and Ohio Railroad Papers, and the George's Creek Coal and Iron Company Letterbook. Irene Neu's biography, Erastus Corning, has good material bearing upon Corning's association with the Works in the 1850's. Miss Neu's bibliography is especially valuable.

Opportunities and sources for further research on the Works and its involvement with the Mount Savage community seem abundant. The fruitfulness of the sources, their ability to add meaningfully to an expanded presentation of the present study is problematic—very much in the spirit of research yet to be completed. A more judicious search would bring additional local newspapers to light. Examination of other newspapers in the state of Maryland—particularly Baltimore and perhaps Annapolis—would be essential. A thorough sifting of the Pottsville (Pennsylvania) Miner's Journal would probably prove useful. This sheet is constantly referred to in contemporary publications and widely drawn upon for their seemingly excellent coverage of mining and industrial events.

Further documentary sources are not absent and would in all likelihood prove invaluable. The Erastus Corning Papers at the Albany Institute of History and Art in Albany, New York, would be highly significant. Besides general business correspondence concerning Corning's involvement with Mount Savage, there are several hundred letters from John Flack Winslow. Some of these were written while Winslow was in Mount Savage, and their commentary would add a sorely needed additional dimension to the present study. The papers of the Forbes family are in the custody of the Baker Library at Harvard Business School in Cambridge, Massachusetts. John Murray Forbes' impressions and correspondence would be no less valuable than those of Corning and Winslow. Resources

available in the community of Mount Savage remain an historical cipher. Undoubtedly the potential of any records in the community would be vast.

Specific problems and episodes which would bear additional investigation are abundant. The role of government involvement in the Works' career is inticing. Several references to contracts with and stockholding by the United States government would bear extensive probing. The matter of organized labor's presence and probable impact needs a more complete assessment in the community of Mount Savage. The influence of both reform and the Catholic Church as they bear upon the lives of people living with the industrial revolution requires careful attention. It is at precisely that point, the lives of the people of the Mount Savage community, where the greatest potential remains. For it is in the intimate involvement with the process of human existence that the aspiration of "total history" is the most meaningful for industrial history.

SELECTED BIBLIOGRAPHY

PRIMARY SOURCES

Manuscript Collections

Maryland Historical Society, Baltimore.

Alexander Papers.

Baltimore and Ohio Railroad Papers.

George's Creek Coal and Iron Company Letterbook.

Government Documents

Annual Report of the Board of Regents of the Smithsonian Institution Showing the Operations, Expenditures, and Condition of the Institution for the Year Ending June 30, 1887. "The Development of the American Rail and Track, as Illustrated by the Collection of the U.S. National Museum," by J. Elfreth Watkins. Washington, D.C.: Government Printing Office, 1871.

Annual Report of the Commissioner of Patents for the Year 1847. Exec. Doc. 54, 30th Cong., 1st Sess., 1848.

Report of the Commissioner of Patents for the Year 1852, Part I, "Arts and Manufactures." Exec. Doc. 65, 32nd Cong., 2nd Sess., 1853.

The Seventh Census of the United States: 1850. Embracing a View of the States and Territories, Arranged by Counties, Towns, etc. Washington, D.C.: Robert Armstrong, 1853.

Court Records

Samuel M. Semmes vs. The Maryland and New York Iron and Coal Company, Chancery Record of Allegany County, Maryland, 1847, Vol. 171.

Public Laws

Law to Incorporate the Lulworth Iron Company, ch. 297. Laws Made and Passed by the General Assembly of the State of Maryland at a Session Begun and Held at Annapolis on Monday, the 28th Day of December, 1846, and Ended on the 10th Day of March, 1847. Annapolis: William McNeir, 1847.

, ch. 57. Laws Made and Passed by the General Assembly Begun and Held at the City of Annapolis, on Monday the 27th Day of December, 1847, and Ended on Friday, the 10th Day of March, 1848. Annapolis: William McNeir, 1848.

Unpublished Materials

Carney, Charles C. "The History of Mount Savage." Study Prepared under the Direction of Project Number 67-014-005 Community Service and Continuing Education Program—Title I of the Higher Education Act of 1965, May, 1967. (Mimeographed.)

"Population Schedules of the 6th Census of the United States—1840—Maryland." National Archives Microfilm Publications, Photocopy 704, Roll 156.

"Population Schedules of the Seventh Census of the United States—1850—Maryland." National Archives Microfilm Publications, Microcopy 432, Roll 222.

"Population Schedules of the Eighth Census of the United States—1860—Maryland." National Archives Microfilm Publications, Microcopy 653, Roll 456.

Richards, William McAlpine. "An Experiment in Industrial Feudalism at Lonaconing, Maryland, 1837-1860." M.A. thesis, University of Maryland, 1950.

Printed Documents

Alexander, John Henry. Report on the Manufacture of Iron; Addressed to the Governor of Maryland. Annapolis: William McNeir, 1840.

Annual Report of the Geologist of Maryland—1839.

Hewitt, Abraham S. "On the Statistics and Geography of the Production of Iron." A Paper Read before the American Geographical and Statistical Society, Feb. 21, 1856.

Maryland Geological Survey—Allegany County. Baltimore: The Johns Hopkins Press, 1900.

Proceedings of a Convention of Iron Workers Held at Albany, New York on the 12th Day of December, 1849. Albany: Published for the Convention, 1849.

Singewald, Joseph T., Jr. "Report on the Iron Ores of Maryland, with an Account of the Iron Industry." Maryland Geological Survey. Vol. IX. Baltimore: The Johns Hopkins Press, 1911.

Newspapers

The Cumberland Alleganian.

The Cumberland Civilian.

The Cumberland Civilian and Telegraph.

The Cumberland Democratic Alleganian.

The Cumberland Miners' Journal.

The Cumberland Telegraph and Maryland Mining Register.

The Cumberland Union.

Periodicals

American Railroad Journal (title varies).

Bulletin of the American Iron and Steel Association.

Bulletin of the American Iron Association.

Hunt's Merchants' Magazine and Commercial Review.

Journal of the Franklin Institute.

Mechanics' Magazine (title varies).

Niles' Weekly Register (title varies).

SECONDARY SOURCES

Barnes, James Andrew. Wealth of the American People—A History of Their Economic Life. New York: Prentice-Hall, 1949.

Beachley, Charles E., comp. History of the Consolidation Coal Company, 1864-1934. New York: The Consolidation Coal Company, 1934.

Bining, Arthur Cecil. Pennsylvania Iron Manufacturing in the Eighteenth Century. Harrisburg, Pa.: Pennsylvania Historical Commission, 1938.

Birch, Alan. The Economic History of the British Iron and Steel Industry, 1784-1789. [London: Frank Cass and Co., Ltd., 1967] New York: A. M. Kelly, 1968.

Bishop, John Leander. A History of American Manufactures from 1608 to 1860: Exhibiting the Origin and Growth of the Principal Mechanic Arts and Manufactures from the Earliest Colonial Period to the Adoption of the Constitution, and Comprising Annals of the Industry of the United States in Machinery, Manufactures, and Useful Arts, with a Notice of the Important Inventions, Tariffs, and the Results of Each Decennial Census. 3 volumes, [Philadelphia: Edward Young and Company, 1868] New York: Johnson Reprint Corporation, 1967.

Bogart, Ernest Ludlow, and Kemmerer, Donald L. Economic History of the American People. New York: Longmans, Green and Company, 1947.

Bolles, Albert Sidney. Industrial History of the United States from the Earliest Settlements to the Present Time: Being a Complete Survey of American Industries Embracing Agriculture and Horticulture; Including the Cultivation of Cotton, Tobacco, Wheat; The Raising of Horses, Meat Cattle, etc.; All the

- Important Manufactures, Shipping and Fisheries, Railroads, Mines and Mining and Oil; Also a History of the Coal-Miners and the Molly MacGuires; Banks, Insurance, and Commerce; Trade Unions, Strikes and the Eight-Hour Movement; Together with a Description of Canadian Industries. [3rd ed., Norwich, Conn.: Henry Bell Publishing Company, 1881] New York: Augustus M. Kelly, 1966.
- Bowden, Witt. The Industrial History of the United States. New York: Adelphi Publishers, 1930.
- Bowen, Ele [sic]. Rambles in the Path of the Steam-Horse. Philadelphia: William Bromwell and William White, 1855.
- Bruce, Kathleen. Virginia Iron Manufacture in the Slave Era. New York: The Century Company, 1930.
- Bruchey, Stuart Weems. The Roots of American Economic Growth 1607-1861—An Essay in Social Causation. New York: Harper and Row, 1965.
- Chandler, Alfred D., Jr. Henry Varnum Poor—Business Editor, Analyst, and Reformer. Cambridge: Harvard University Press, 1956.
- Clark, Victor Selden. History of Manufactures in the United States. 3 volumes. [Washington, D.C.: Carnegie Institution, 1929] New York: Peter Smith, 1949.
- Clough, Sheppard Bancroft, and Marburg, Theodore F. The Economic Basis of American Civilization. New York: Thomas Y. Crowell, 1968.
- Cochran, Thomas Childs, and Miller, William. The Age of Enterprise—A Social History of Industrial America. Revised edition. New York: Harper and Row, 1961.
- Cole, Arthur Harrison. Business Enterprise in Its Social Setting. Cambridge: Harvard University Press, 1959.
- Coman, Kathrine. The Industrial History of the United States. New York: MacMillan Company, 1919.
- Cowdrick, Edward S. Industrial History of the United States. New York: The Ronald Press, 1923.
- DeBow, James Dunwoody Brownson. The Industrial Resources, etc., of the Southern and Western States. New Orleans: Office of DeBow's Review, 1853.

- Dew, Charles B. Ironmaker to the Confederacy—Joseph R. Anderson and the Tredegar Iron Works. New Haven: Yale University Press, 1966.
- Emerson, Edward W. Life and Letters of Charles Russell Lowell. Boston and New York: Houghton and Mifflin Company, 1907.
- Faulkner, Harold Underwood. American Economic History. Sixth edition. New York: Harper Brothers, 1949.
- Fisher, Douglas Alan. The Epic of Steel. New York: Harper and Row, 1963.
- Fisher, Marvin Mark. Workshops in the Wilderness—The European Response to American Industrialization, 1830-1860. New York: Oxford University Press, 1967.
- Fishlow, Albert. American Railroads and the Transformation of the Ante-Bellum Economy. Cambridge: Harvard University Press, 1965.
- Fogel, Robert William. Railroads and Economic Growth: Essays in Econometric History. Baltimore: Johns Hopkins Press, 1964.
- Foner, Philip Sheldon. History of the Labor Movement in the United States. New York: International Publishers, 1947.
- French, Benjamin Franklin. History of the Rise and Progress of the Iron Trade of the United States, from 1612 to 1857. New York: Wiley and Halsted, 1858.
- Glazer, Nathan, and Moynihan, Daniel Patrick. Beyond the Melting Pot. Cambridge: M.I.T. Press, 1963.
- Goodale, Stephen Lincoln, comp., and Speer, James Ramsey, ed. Chronology of Iron and Steel. Second edition. Cleveland: The Penton Publishing Company, 1931.
- Greeley, Horace. The Great Industries of the United States: Being an Historical Summary of the Origins, Growth, and Perfection of the Chief Industrial Arts of This Country. Hartford, Conn.: J. B. Burr and Hyde, 1872.
- Gutheim, Frederick. The Potomac. New York: Rinehard and Company, 1949.
- Hacker, Louis Morton. The Triumph of American Capitalism. New York: Columbia University Press, 1947.

- Haney, Lewis Henry. A Congressional History of Railways in the United States to 1850. Madison, Wis.: 1908, reprinted from the Bulletin of the University of Wisconsin, No. 211; Economics and political science series. Vol. III, no. 2.
- Hartley, Edward N. Ironworks on the Saugus—The Lynn and Braintree Ventures of the Company of Undertakers of the Ironworks in New England. Norman: University of Oklahoma Press, 1957.
- Harvey, Katherine A. The Best Dressed Miners—Life and Labor in the Maryland Coal Region, 1835-1910. Ithaca and London, England: Cornell University Press, 1969.
- Hughes, Sarah Forbes, ed. Letters and Recollections of John Murray Forbes. Boston and New York: Houghton, Mifflin and Company, 1879.
- Johnson, Joseph Esrey. Blast-Furnace Construction in America. New York: McGraw-Hill, 1917.
- Keir, Malcolm. Manufacturing. New York: The Ronald Press, 1928.
- Lesley, J. Peter. The Iron Manufacturer's Guide to the Furnaces, Forges, and Rolling Mills of the United States. New York: John Wiley, 1859.
- Lowdermilk, Will Harrison. History of Cumberland (Maryland), from the Time of the Indian Town, Caiuctucuc, in 1728, up to the Present Day. Washington, D.C.: James Anglim, 1878.
- May, Earl Chapin. Principio to Wheeling, 1715-1945—A Pageant of Iron and Steel. New York: Harper Brothers, 1945.
- Metallurgical Society; American Institute of Mining, Metallurgical and Petroleum Engineers. History of Iron and Steelmaking in the United States. New York: The Metallurgical Society of AMIE, 1961.
- Neu, Irene D. Erastus Corning—Merchant and Financier, 1794-1872. Ithaca: Cornell University Press, 1960.
- Norris, James D. Frontier Iron—The Maramec Iron Works 1826-1876. Madison: The State Historical Society of Wisconsin, 1964.
- North, Douglas C. The Economic Growth of the United States, 1790-1860. Englewood Cliffs, N.J.: Prentice-Hall, 1961.

- Overman, Frederick. The Manufacture of Iron in All Its Various Branches. Third edition, revised. Philadelphia: Henry C. Baird, 1854.
- Pearse, John B. A Concise History of the Iron Manufacture of the American Colonies up to the Revolution and of Pennsylvania up to the Present Time. Philadelphia: Allen, Lane and Scott, 1876.
- Pearson, Henry Greenleaf. An American Railroad Builder—John Murray Forbes. Boston and New York: Houghton Mifflin Company, 1911.
- Ransome, James Maxwell. Vanishing Ironworks of the Ramapos—The Story of the Forges, Furnaces, and Mines of the New Jersey-New York Border Area. New Brunswick, N.J.: Rutgers University Press, 1966.
- Rayback, Joseph G. A History of American Labor. New York: The Free Press, 1966.
- Rostow, Walt Whitman. The Stages of Economic Growth—A Non-Communist Manifesto. London, England: Cambridge University Press, 1960.
- Scharf, John Thomas. History of Western Maryland. Philadelphia: Louis H. Everts, 1882.
- Scrivenor, Harry. History of the Iron Trade from the Earliest Records to the Present Period. [London, England: Longman, Brown, Green, and Longmans, 1854] New York: A. M. Kelly, 1968.
- Shannon, Fred Albert. America's Economic Growth. Third edition. New York: MacMillan Company, 1951.
- Smith, J. Russell. The Story of Iron and Steel. New York: D. Appleton and Company, 1922.
- Stanton, Rev. Thomas J. A Century of Growth or The History of the Church in Western Maryland. Baltimore: John Murray Company, 1900.
- Strassman, Wolfgang Paul. Risk and Technological Innovation: American Manufacturing Methods during the Nineteenth Century. Ithaca: Cornell University Press, 1959.
- Swank, James Moore. History of the Manufacture of Iron in All Ages and Particularly in the United States from Colonial Times to 1891. [Second edition. Philadelphia: The American Iron and Steel Association, 1892] New York: Burt Franklin, n.d.

- Taylor, George Rogers. The Transportation Revolution, 1815-1860. [New York: Holt, Rinehard and Winston, 1957] New York: Harper and Row, 1968.
- Temin, Peter. Iron and Steel in Nineteenth Century America—An Economic Inquiry. Cambridge: M.I.T. Press, 1964.
- Thomas, James Walter, and Williams, T. J. C. History of Allegany County, Maryland. Cumberland, Md.: L. R. Tittsworth and Company, 1923.
- Walker, Joseph E. Hopewell Village—A Social and Economic History of an Iron Making Community. Philadelphia: University of Pennsylvania Press, 1966.
- Ware, Norman. The Industrial Worker 1840-1860—The Reaction of American Industrial Society to the Advance of the Industrial Revolution. [Boston: Houghton Mifflin Company, 1924] Chicago: Quadrangle Books, 1964.
- White, John H., Jr. American Locomotives; An Engineering History 1830-1880. Baltimore: Johns Hopkins Press, 1968.
- Whitworth, Joseph, and Wallis, George. The Industry of the United States in Machinery, Manufactures, and Useful and Ornamental Arts. London, England, and New York: George Routledge and Company, 1854.

Articles

- Davis, Rebecca Harding. "Life in the Iron Mills." Atlantic Monthly, VII (April, 1861), 430-451.
- Hunter, Lewis C. "Financial Problems of Early Pittsburgh Iron Manufacturers." Journal of Economic and Business History, II (May, 1930), 520-542.
- . "The Influence of Market upon Technique in the Iron Industry in Western Pennsylvania up to 1860." Journal of Economic and Business History, I (Feb., 1929), 241-273.

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