

EBER BROCK WARD
PATHFINDER OF AMERICAN INDUSTRY

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By
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EBER BROCK WARD

PREFACE

Too often history is written around the lives and activities of public officials - The Politicos - who in the final analysis do not shape the destinies of the Nation, but merely reflect the growth, unrest and aspirations of the great masses. Real leadership comes from the ranks of the people, comes from those who in their daily pursuits effect a gradual change in the civilization of the age. No government brought about the industrial revolution. Kings and their satellites were forced to wait for a Watt or a Hargrave. Whitney and McCormick did more to change agricultural economy than did all of the congressmen in Washington. And big cities, with their skyscrapers, and their bridges, and their maze of railways, did not appear until the cheap production of steel made them possible. Steel more than any other product built the mighty America of today.

In one generation the United States was transformed from a nation using primitive methods of agriculture into an industrialized country which shipped its manufactured products to every corner of the world. In the years following the Civil War, the growth of communications and the development of inventions revolutionized farming, built giant industry, raised the standard of living. Here was a new America, an America that was to assume leadership of the civilized nations.

This mighty transformation was directed not by men seated in legislative halls, but by pioneers working in their fields and in their little shops and seeking better ways to do the old things. Unhonored and unsung they worked, often opposed by lawmakers and even by their fellow citizens, since for many the old ways were good enough. Gradually, yet rapidly, a change was setting in. A new economy was being born. And in the rush for the new riches, those who were responsible for it all were forgotten.

One such forgotten man was Eber Brock Ward. He had been a part of that westward surge which populated the shores of the Great Lakes. Always interested in communication and transportation, he came to know every hamlet, every settlement; came to understand the pioneers who were hewing civilization out of the wilderness, came to recognize their desires and their aspirations. He knew that there could be small hope for the future of these tiny settlements unless they could be tied to the markets of the East. He knew, too, that there could never be an independent economy in the new country unless industry was developed along with farming. Shipping lines and railroads broke the isolation of these westerners. Cheap steel provided the necessary industries. Eber Ward, more than any other man, met the needs of the Middle West and in meeting those needs he set into motion forces which were to have a lasting influence upon the development of the entire country. He embodied the spirit of a new day, and in his life are mirrored all of those trends which changed the United States from an agricultural to an industrial state.

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Since Eber Ward was one of the masses, since he never entered the national political arena, historians have passed him by. Practically nothing about him has found its way into the published literature of the period. No reservoir of collected materials survived in any of the archives. Yet everywhere in the Middle West there are evidences of his life and work. The newspapers carry his name time and again; here and there manuscripts of his speeches or memoranda of his orders can be found; pioneers who worked with him and for him are still alive and are ready to talk in glowing terms of his ambitions and achievements. It is slow work piecing together materials on the life of Eber Ward, but it is instructive and interesting work.

Of inestimable value were the small collections of original materials found in the vaults of Midwest historical societies, and of even greater importance was the kindly interest and invaluable aid given by the curators of these institutions. Without the continued and hearty assistance of Dr. Milo M. Quaife of the famous Burton Historical Collection in Detroit this work could not have been carried on. No less valuable was the help given by Mrs. Grace S. McClure, State Librarian of Michigan, who not only made available the much needed records in the Ward will contest, but who likewise arranged for meetings with many pioneers of Michigan who possessed manuscripts relating to the period or who had first hand information on the subject under discussion. Helpful too, were Dr. George N. Fuller of the Michigan Historical Commission and Mrs. Stella M. Drumm of the Missouri Historical

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Society, who made available materials relating to the establishment of the Crystal City Glass Works. Many manuscripts in the Wisconsin Historical Society collection were studied through the courtesy of the late Dr. Joseph Shafer and of Dr. Louise Phelps Kellog, senior research associate of the Society.

Grateful acknowledgment is made to William Downie, pioneer of Detroit, who has assembled a large collection of materials relating to his neighbors, the Wards; to George W. Oaks, superintendent at Crystal City and Lewis W. Roop of that plant, who supplied much information relating to the founding of the glass works; to Herman G. Runge, Milwaukee, whose invaluable collection on Great Lakes ships supplied much needed information; to John Lawler of Detroit for many items relating to the Silver Islet venture; and to those members of the History Department of Marquette through whose encouragement the work was undertaken and carried to completion despite many obstacles. Appreciation must also be expressed to the many people who opened family treasures for the inspection of the author, and to those contemporaries of Ward who so willingly shared their reminiscences. For many suggestions while the work was in progress, as well as for the careful editing of the text, the author's thanks go to Miss Hazel I. Roberts. Without the cooperation of so many different people the story of Eber Brook Ward could not have been written.

Bernhard G. Korn

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Chapter I

INAUSPICIOUS BEGINNINGS

On the afternoon of September 6, 1864, in the little community of Wyandotte on the Detroit River, on the spot where the Public Library now stands, a little group of men gathered around an egg shaped receptacle which had just been filled with molten iron. A waiting worker turned a valve and immediately there was a loud, rushing, hissing sound. A stream of cold air, under high pressure, was being forced into the molten mass of iron and the receptacle, trembling from the conflict of the elements within, became a roaring volcano. From its crater shot forth flames perhaps a hundred feet high, lighting up the river bank for miles around. Sparks of vivid hue showered to the ground. The phosphorus, the sulphur, the silicon and the carbon in the iron were belched forth in a pyrotechnic display of unequalled splendor. Leaping flames, red at the outset, turned to a dazzling yellow and then, as the battle continued, turned again to a thick, full white.

A heavily-bearded man with graying, tousled hair, who had been watching the proceedings intently, gave a signal. The air stream was shut off by ready workmen and into the boiling caldron was dumped a definite quantity of manganiferous pig iron, long called Spiegeleisen by the Europeans. Again the war of the elements was resumed in that iron receptacle. But

not for long. The flames gained a higher intensity, molten iron erupted from the jaws and then, as suddenly as it all began, an oppressing stillness settled over the scene.

Workmen, who had been watching anxiously, jumped forward. Iron arms tipped the egg shaped receptacle and quantities of the molten mass, seething and groaning in protest, were poured into oblong containers resting on the ground. There was a momentary sputter and then, once again, all was quiet.

The first Bessemer commercial steel billets had been poured in the United States. 1

1. Van Alstyne Papers.

Through it all a short, stocky man, wearing the plug hat of the day, a cut-away coat and baggy trousers, stood by stoically. His had been the vision, a vision of cheap steel that would build railroads and skyscrapers and huge bridges. He had backed that vision with a large part of his fortune. And there, in those cooling forms on the floor, lay the answer to his dream.

But Eber Brock Ward was not one to spend much time in dreaming. He had complete confidence that the pneumatic process for making steel was feasible. He had confidence in his engineer, bearded and tousle-haired William F. Durfee, who had supervised every detail of this record-making experiment. He had confidence, too, in his vision which pictured the Age of Steel completely changing the way of life not only of his own country but of the world.

That complete confidence, which was so characteristic of

the man, was not misplaced. Subsequent events were to prove that the pneumatic process was swift, cheap and effective. In that little Wyandotte experimental yard was laid the foundation for what was to become the gigantic steel empire. Once again Eber Brock Ward had gambled and had won.

Taking chances, experimenting, plunging in where others stood by hesitatingly, was nothing new for this industrial giant. His entire life had been a challenge and the success which was his had not come without hardship and effort.

Eber Brock Ward came, in fact, from a hardy stock. His forebears had been buffeted about on the economic and religious currents of history. They had tilled the soil in Scotland, where eking out a meager existence proved a difficult task. When the religious wars were raging throughout Europe, they listened to the preachings of John Knox and, because their life was hard, they embraced the new religion in the hope that it might bring them upon better days. So fervent did they become in their new beliefs, so dissatisfied were they with the conditions under which they lived, that they were quite ready to migrate to Ireland, there to aid in winning that country for Protestantism. 2

2. Quimby Papers.

But life in Ireland failed to still a restless spirit. And so it came to pass that when John Winthrop issued his call for a settlement in the New World, Andrew and Esther Ward answered that call. They were carried across what seemed a

boundless ocean in one of those seventeen little sailing vessels that were tossed about an angry sea in 1630. Late in the fall they landed at Salem, there to become part of the thriving Massachusetts Bay colony.

Soon more settlers came and ere long the community became too densely populated for the Wards. The valleys of Vermont beckoned, and here, for the next hundred years, the Ward family took up its abode and prospered. They were all just ordinary folks, these Wards, tillers of the soil who were happy in their little hut-like home. Their acres provided the food for the table, their cow the milk, their pigs the juicy bacon. The Indians gave some trouble, but after the French and Indian wars had driven the French from the country, the settlers soon learned how to get along with the Indians. Life was peaceful, life was happy, here in Rutland County, Vermont.

So peaceful was it in this valley, cut off from the rest of the world, that the Wards knew little of the bickering and strife that was going on at the seaboard. An occasional traveler, seeking lands even farther west, would relate how England was placing taxes upon the colonists, how settlers were being taken to England for trial, how the demand for representation was growing. But all this meant little to Asael Ward, now the head of the Vermont clan. Taxes could not effect his life, for the Wards raised what they needed, spun their own yarn, made their own clothes and if Massachusetts, Pennsylvania and the Old Dominion wanted to make war upon the mother country, if they were setting up a shout for Independence, only a very faint echo of that shout reached the peaceful Vermont valley.

Then, one day--it was in 1777--word went through the valley that an army was marching into this peaceful country. It was an army that was coming down from Canada by way of Lake Champlain. It was an English army that would cut through Vermont on its way to the seaboard, there to subdue those American colonists, many of whose forebears had come with John Winthrop even as had Andrew and Esther Ward. Here was a challenge. Asael Ward could see no reason why Englishmen from England should fight Englishmen in America. He could see no reason why the Old Country should try to dictate to those who were building the new. The warrior spirit boiled in the blood of Asael Ward, and, though nearing the half century mark, he shouldered his musket and hastened to join the forces of John Stark, one of the heroes of Bunker Hill. His son David, just turned seventeen, marched in the army by the side of his father.

Washington, upon hearing that Burgoyne was marching down Lake Champlain with an army of eight thousand men, had exclaimed: "Now let the New Englanders turn out and crush Burgoyne". Asael Ward and his son David were first of all New Englanders and so were ten, yes, twenty thousand others. A force of Brunswickers split from the main Burgoyne column and pushed into Vermont. But the Vermonters under Stark were ready and at Bennington, after a short but bloody battle, the invaders were routed. Vermonters had stopped the march upon their state, but in the battle, Asael, great grandfather of Eber Brock Ward, was killed. 3

3. David Ward, Autobiography, 8.

There was deep sorrow in the little town of Wells in Rutland County when the news of Asael's death was received. When John Stark's soldiers were demobilized, David Ward returned to the old family homestead to take over. He married Abigail Pray, and their union was blessed by three sons, Samuel, Eber and David. Once again life was peaceful in the Vermont valley.

At an early age the three boys were taken into the fields to help in the farming. Boys, in that day, did not have to be very old to be assigned to definite chores. But farming made small appeal to Samuel and to Eber. The trading fever was in their blood and as soon as they reached their majority, they left Vermont and went first to Syracuse and then to Rochester, New York, doing odd jobs here and there and ultimately engaging in the infant salt industry. 4

4. William L. Bancroft, Memoirs of Captain Samuel Ward, 337.

Perhaps it was this experience of Eber Ward which was, at a later period, to bring his son back into the salt business. The venture into salt failed to prove as effective as the two young men had anticipated. Both were now married and both needed to support their families. Since farming was not to their liking, Samuel, who had heard much of the western country, decided that he would seek his fortune in Ohio, while Eber took his wife Sally and his two-year-old daughter, Emily, who had been born at Manlius, near Syracuse, New York, during the salt experience, and headed north into Canada.

On Christmas Day, 1811, in the little town of New

Hamborough, near the larger city of Toronto, Eber Brock Ward was born to Eber and Sally Ward. 5

5. As told to Mrs. E.M.Sheldon by Eber Ward. MS. in Michigan State Historical Society, Lansing, Michigan.

The Ward household enjoyed little more than a bare existence. The father had not yet found his place in life, had tried his hand at a variety of occupations, had been content as long as he eked out enough to keep his wife and two children from actual want. Hardy and strong, without interest in farming which was the principal pursuit of the day, restless and continually seeking new fields of endeavor, Eber Ward had managed to secure little more than the scant necessities, had managed even so little only because he followed the lead of his far shrewder, more versatile, older brother, Samuel.

It was into a home of this nature that Eber Brock Ward made his unobtrusive entrance, a typical, humble American household, one of the many which made the America of that day, and one not greatly different from thousands of typical American homes today. There was nothing in the surroundings that would indicate that the young Eber would inherit the restless business spirit of his father, the piety of his grandfather, the patriotism of his great-grandfather, and the pioneering instinct which had beset the Wards since that day in Scotland when the family first migrated to Ireland. Nor was there anything that would mark this child as the one who would establish the economy of the entire Middle West, establish it effectively and permanently along the lines which he envisioned. It is typical of America

that those who are to wield the greatest influence in the development of the country come from humble and inauspicious beginnings.

Scarcely had the event of Eber Brock Ward's birth been fittingly observed when rumblings of the second war with England were heard. Sailors were being impressed on the high seas, the Northwest forts had not been turned over to the United States as the treaty of peace had provided, the Vermonter was no longer welcome in Canada. So Eber Ward prepared to move his family once more and since there was no better place to which to go, he started back, in his covered wagon, with the few family possessions piled high, to the old homestead in Rutland, Vermont. Others of the Wards had remained in Rutland, had worked the farms which Asael Ward of Revolutionary fame had laid out. They had grown to be a prosperous clan, but farming, even in time of need, held no allurements for Eber Ward, even as it made no appeal to his brother Samuel.

Shortly after the return of Eber Ward to Rutland, the War Hawks succeeded in leading an unprepared United States into the second war with England. An untrained army of seven thousand men, poorly equipped and dispersed in petty garrisons along the extended border, was to face the might of England, was, in fact, as Jefferson would have it, to defeat the larger foe "by merely marching". Thinly-manned outposts of the American forces were to be found on Lake Ontario and on Lake Erie, but the supplying of these forces had become a difficult task. The transportation of munitions and supplies through the wilderness and across the

swamps was so precarious that it cost sixty dollars to carry a barrel of flour from New York to Detroit. 6

6. Based on Edward Channing, A History of the United States, IV, 488 et seq.

It was natural that Samuel Ward, the business head of the Ward clan, should see in this situation an excellent opportunity for the display of his talents. It would not be too difficult a task to gather the produce from the Vermont farms of the Wards and their neighbors and transport them to the western limits of New York. Here a boat could be secured and it would be a simple matter to supply the outlying posts on the shores of Lake Erie. Carrying supplies to the forces of the United States in the western country would be aiding the war effort and would prove remunerative as well. So thought Samuel Ward, and for him to think was to act.

Because his enterprise would require the help of others, Samuel Ward soon found a place for his brother Eber in his new organization. Headquarters were established at Sackett's Harbor near the point where Lake Ontario connects with the mighty St. Lawrence. Several United States gunboats were operating from this harbor and these boats needed supplies. Then, too, there were several garrisons, most important being the ones at Fort Owego and at Fort Niagara. The Wards built a small boat, one just large enough to sail along the coast of Lake Ontario and do business with the small communities which had grown up along the shore, as well as with the two United States forts. Eber directed the business at Sackett's Harbor. Samuel sailed

his boats. The venture proved most profitable, but not for long. Sir George Prevost and Commodore Yeo, operating for the British on Lake Ontario, noted that the American fleet and army were busily employed at Niagara. On May 29, 1813, they landed at Sackett's Harbor, burned the barracks and burned, too, all the vessels which they found in the harbor. Samuel Ward's boat was tied up at the dock at the time. It was not spared by the English invaders and the rapidly growing, profitable coastal trade of the Wards came to an end. Samuel and Eber Ward joined Jacob Brown, who lived in the neighborhood and who was to prove himself a good general, and in the battle which followed, the British were driven back to their own side of the lake. The Ward brothers returned to Rutland happy in the thought that at least they had been able to aid Jacob Brown in driving Sir George Prevost out of the country. They were happy, too, that Lieutenant Thomas Madsenough had defeated the British squadron on Lake Champlain. At least Vermont would not be threatened by an invasion as it had been during the Revolution. 7

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7. The story of the Ward enterprise during the War of 1812 is taken from the E.M. Sheldon Stewart MS. and from William L. Bancroft, op.cit., 337.
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Eber Brock Ward knew nothing of the war. While his father was supplying the American troops in the Great Lakes regions, his mother was getting along as best she could on the old Vermont homestead. Samuel Ward made three thousand dollars out of his war enterprise. His brother made slightly less. But Samuel Ward had found the kind of work he liked best while his brother con-

tinued to shift from occupation to occupation. His experiences along the shores of the inland lakes caused the older brother to believe that there would be good business here even after the war. Settlers were moving into this western country, and Samuel Ward knew that there were communities along the shores of Lake Erie and even up at Green Bay on Lake Michigan, communities which would have to depend upon coastal ships for their contact with the East. So he would build another boat, would seek to establish trade with New Salem and with Cleveland on Lake Erie, with Detroit and with Green Bay. Easterners had but recently settled at all of these points, easterners who were his own kind of people and whom he understood.

So Samuel Ward determined to become a part of that westward surge, and in that decision was settled, too, the future of little Eber Brock Ward, now playing on his grandfather's farm in Rutland. For just as Eber Ward had always followed his brother in all things, so the young Eber was to follow him, was to take up where Samuel Ward left off, was to point the way to the building of a mighty Middle West.

Chapter II
THE LURE OF THE WEST

The spirit which carried the Wards from Scotland to Ireland and ultimately to the New World was the same as that which was causing thousands of other families to leave their known heritage in the Old World for the uncertainties of the New. Mingled motives brought these pioneers to the western hemisphere, motives of religion and of government. Economic difficulties played their part, and not the least important urge was the spirit of adventure which had driven the Anglo-Saxon on the Crusades and which now drove him upon voyages of discovery and exploration and, ultimately, of settlement. 1

1. Causes for the migrations from England are ably discussed in G.L.Beer, The Origin of the British Colonial System, Chaps. I and II.
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Nor was this urge for new lands, for adventure, for betterment, stilled after the eastern coast of America was reached. The same motives which had impelled migration from England, now drove the coastal settler inland. The lure of the West continued to fascinate the mind of man. Just as the forebears of Eber Brock Ward had migrated from Salem to Vermont, so hundreds of other families packed their belongings and turned westward because they thought the distant fields more fertile. No sooner had the Revolution been won than the stream of settlers

coming from Europe overflowed the boundaries of the original thirteen states and spilled into the new lands using the Mohawk Valley, or the old Braddock Road, or the Ohio River as their highways. By raft and by wagon they came, these New Englanders, seeking their fortunes in the unknown and the unbroken wilderness. They were beset by many hardships but they were used to living the hard way. Here in the West they would find no succor for themselves, but they would find opportunity, opportunity to build a heritage for their children. 2

2. A.B.Hulbert, Historic Highways of America, gives details of the many routes used by the pioneers in going westward. See also Lois Kimball Mathews, The Expansion of New England, 174.
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The War of 1812 stopped the westward surge for the time being. Indians in the West, incited by the English, were often hostile; invasion by the English was threatened; the farmer found an outlet for his produce in the demands made by the war. Times and conditions were not auspicious for migration. There was little reason for leaving the home community.

But as soon as the Treaty of Ghent was signed, the search for adventure and a new life again manifested itself. Distant lands again beckoned, and since there had been several poor crops during the war causing prices to rise materially, many, especially the debtor class, sought to face life anew in the West. Ohio was now the frontier. Those who had been in the country returned with glowing tales. Here was the place where a fortune could be carved from the wilderness. The "Ohio Fever" swept the New England States and thousands set out for the promised land. 3

3. Lois Kimball Mathews, op.cit., 180 et. seq.
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Here in Ohio were fertile lands, fertile lands that could be had for little money. Here, too, were vast stretches of timber, timber that would serve for building the cabin and that would serve equally well to keep that cabin warm. So to Ohio came the New Englanders. Those coming from old Salem established a little settlement in the north-easternmost corner of the new country and, as had always been the custom of the English, they retained a part of the old name by calling it New Salem. They came "with a load of furniture, a gun, and a dog" seeking their fortune in a country where hard work alone could win success.

To this settlement of New Salem in Ohio came Samuel Ward. He came not to seek his fortune for, by the standards of the day, he was already a rich man because of his business venture during the war. He came because he saw in the West an opportunity to carry on what had now become his chosen occupation. He would build another sailing vessel and carry on trade between the many little towns which were being established along the shores of the Great Lakes.

Samuel Ward was no stranger to New Salem. He had visited the little settlement during the days that his brother, Eber, was in Canada. He had visited it again during the war days. He knew that the little community had been established by New Englanders in 1796 and he knew that those first settlers had built well. He knew, too, that New Salem had grown in population immediately after the war, for his friends in old Salem kept him informed. Samuel Ward considered New Salem an excellent center from which to continue his business activities. From its

snug little harbor he could sail to the many little towns on Lake Erie, could reach Detroit and settlements on the St. Clair, could, if he so desired, reach the land of the great "Leaping Waters". New Salem would provide an ideal base for his operations, reasoned Samuel Ward.

Eber Ward did not follow his brother when he left for the West. Eber Ward had heard of Kentucky. New Englanders had penetrated into that wilderness as well as into Ohio, had, in fact, gone there at an even earlier date. They too had brought back tales of the marvelous living which Kentucky provided. In fact, Eber Ward thought Kentucky a far more promising land than Ohio and, because he was by nature of a roving disposition, he announced to his family, two years after the Second War for Independence, that he was moving west of the Allegheny Mountains.

Two little sisters, Sallie and Abbie, had by this time joined Emily and Eber Brock. Mother Ward thought the family too large and too young to attempt the hardships entailed by a trip through the mountains to the promised land of Kentucky. But father Ward refused to change his mind. In Kentucky, he felt, fortune awaited him and to Kentucky the family would move. As a concession to his good wife he promised that there would be no further moves. There would have to be none, for Kentucky would provide a good living.

In the middle of winter, on December 15, 1817, the family started the trek to Kentucky. They traveled in a covered sleigh drawn by two sturdy horses. There would be ample snow and the going would be easy in a sleigh. Mother Ward rode on the front seat beside her sturdy, blue-eyed husband. Emily,

ready to observe her ninth birthday, Eber Brock, just turning six, Sally, aged three, and baby Abbie, aged eighteen months, rode under the canvas cover of the sleigh, hemmed in by such household goods as the Wards were taking along. 4

4. Details of this trip are taken from William L. Bancroft, op.cit., 368; Stewart MS., Silas Farmer, A History of Detroit and Michigan, II, 1235.

The migration was to carry the Wards along the Mohawk Valley as far west as Rochester, after which the sleigh was to turn south until it reached the Allegheny River. This river was to be followed through Pennsylvania and Ohio until it reached the anticipated fertile fields of Kentucky. Eber Ward, who still had a little money left from his war enterprise, had no thought of purchasing any of these fertile fields. He had heard of many thriving communities in this new land south of the Ohio, and surely, he reasoned, there would be ample opportunity for business endeavor. Happiness and comfort would come to the family in Kentucky.

Such were father Ward's thoughts as he drove his horses along the Mohawk trail. Such were the hopes of the pioneer whose restless spirit was ever driving him to new lands. But those hopes were not to be realized. Two days out from Rochester, Eber Ward suddenly became sick. The illness was said to be pleurisy and faithful mother Ward, during the next six weeks, ministered to her ailing husband in addition to caring for her four children.

It was during the cold, stormy days of February that Eber

Ward felt that he had recovered sufficiently to withstand the hardships of travel. So southward they struck with their well-filled sleigh in an effort to reach the Ohio. That, too, was not to be. The rigors of the winter journey and the strain and stress of caring for her sick husband and four children, proved too much for Sally Ward. In an unpopulated section of central Pennsylvania illness overwhelmed her. She could go no farther. No aid was near at hand and while Eber Ward administered to her as best he could, it was not enough. On the third day of her illness Sally Ward died. She paid the supreme price of the pioneer.

The father was grief-stricken. Far from any settlement, with no help near, there was nothing to do but find a final resting place for the brave mother out there in the wilderness. Similar situations were all too common in the lives of those early pioneers, continued to be common during the next two decades when other hardy souls beat their way across the prairies to distant California and Oregon. Under a stately oak Eber Ward built a large fire, for it was cold and the ground was frozen. The four motherless children huddled near by. When the ground had been thawed, the saddened father dug the grave, each blow of his pick ax, each thrust of his shovel, searing his very soul. Finally the heart-breaking task was completed. With Emily cuddling warmly wrapped baby Abbie and with Eber and Sally, who had not yet realized the full import of the tragedy, standing by, the body of a pioneer mother was laid to rest. A short prayer was said. Then, brushing away the tears, the lonely father filled the grave with earth, erected a crude

wooden cross to mark the spot, gathered his children in his covered sled, and, with a last lingering glance, drove on.

Long was young Eber to remember this scene. He was living the life of the pioneer West, was suffering as the pioneers suffered, was paying the price that had to be paid by those who build a new country. Many years later, after he had amassed wealth, Eber Brock Ward returned to this lonely spot in Pennsylvania. He wanted to find the body of his mother, wanted to bring it to Detroit, there to place it next to his father on the family burial plot. But civilization had progressed through the years. What had once been a wilderness had now become a teeming farm community with large cities near by. The wooden cross had long since rotted, the oak tree had been cut down to make room for progress. Eber Brock Ward could not locate the grave of Sally Ward. She slept there, somewhere beneath the throbbing new development which she and her family had helped to build. 5

5. As told by Mrs. Quimby, Marine City, a direct descendant of the Ward family.

With his helpmate sleeping beneath the Pennsylvania snows, Eber Ward lost all interest in his Kentucky dream and it was but natural that he should think, in his hour of grief, of his brother Samuel. Emily, only nine years old, would now have to take the place of the mother, would have to raise young Eber, Sally and Abbie. And Eber Ward thought that she could do that better among friends. So the covered sleigh was again headed northward toward Lake Erie. At New

Salem, where Samuel Ward was already doing a thriving coastal business and where many Easterners from old Salem had settled, there would be rest and peace for the sorrowing family. When the little town of Erie was reached, the horses and the sleigh were sold; and the motherless family waited until Samuel Ward, in his small, flat-bottomed schooner, the Salem Packet, arrived at this port of call. On that little boat the trip was made to New Salem.

Yet here, in Ashtabula County, despite the fact that many New Englanders now called it home, life was dull for Eber Ward. He picked up odd jobs wherever he could find them and eked out an existence such as it was. He had lost all interest in pioneering and when his brother suggested that they go even farther West, he refused to give heed. But for Emily life was anything but dull. Young as she was, she became a real mother to the little family. She kept house for her father and did what she could toward rearing the other three children. For the next four years life was as active for little Emily as it was dull for her father.

It was after Eber Ward saw that his family was well cared for by his daughter Emily, who had already become known as "Aunt Emily", that he decided to follow his brother to the new country in the West. Michigan at the time had a few settlers along the Detroit River and in the vicinity of Mackinac, but beyond that little interest had been shown in the district. Government agents, returning from inspection tours, brought back unfavorable reports. The land, they said, was not good

for farming, there were no roads, only Indian trails leading off into dense forests. There was no reason why settlers should go to such a country. 6

6. Lois Kimball Mathews, op.cit., 221.

But Samuel Ward cared nothing for the opinion of Government agents. He had sailed his twenty-seven ton Salem Packet along the Detroit River, had sailed it out into Lake St. Clair, and had even traversed to the head of Lake Huron, there to visit Mackinac. He knew of the great lake which lay beyond the "Leaping Waters" in the St. Mary's River; and he knew, too, of that other mighty arm which stretched down to Green Bay and even further south to Fort Dearborn. Only two other ships sailed the lakes in competition with his Salem Packet, one out of Buffalo and the other out of Cleveland. He believed in this new country, believed that it would soon be filled by new settlers, believed that there was need here for his expanding shipping business. Already he had heard rumors that a canal was to be built connecting the Atlantic with the Great Lakes; and Samuel Ward knew that a canal would hasten the settlement of Michigan and even of Wisconsin, knew also that such settlement would bring additional business to his ships.

Half way measures were not for this Uncle of young Eber. He had seen the new country, he believed in it, he would move to Michigan with his family. With his wife and his household goods he embarked upon his Salem Packet and headed for the Michigan shores. Eber Ward, for want of anything better to do, went along. He was not so certain of the new country, was

willing to let time tell whether Samuel had been correct in his surmise. He left his family in New Salem in charge of little Emily.

The trip through Lake Erie was uneventful. At Port Au Chien the flat-bottomed vessel became wind-bound, and the ever-active Samuel went ashore, where he found several young apple trees which had been planted by the Indians. Apples would be a delicacy in his new Michigan home so the trees were uprooted and placed on the ship. Eber Ward reports that after the trees had been transplanted "they lived and bore fruit". ?

7. Stewart MS.

Thus, as far as is known, were the first fruit trees brought to the banks of the Detroit River.

Because he had fully intended to make his home on the river, Samuel Ward had made a careful inspection of the country on his many previous trips. In Detroit he had met the Catholic priest, Gabriel Richard, and with him he had tramped through the swampy lowlands to the north of the city. Some thirty miles to the north, in a fork made by the St. Clair and the Belle Rivers, these two pioneers had discovered a strip of land which they considered suitable for future settlement. Samuel Ward named his tract Yankee Point, while Father Richard called his holding, the lower end of section twelve, Catholic Point, a name which the property holds to this day. 8

8. Marine City Independent, August 11, 1925.

When the Salem Packet reached Yankee Point in the spring of 1819, there was little to recommend the country as a future place of habitation. True, it was centrally located on the wide, swiftly flowing St. Clair River, midway between Lake Erie and Lake Huron, but it was mostly surrounded by low lands that would require much human effort for improvement and that gave every indication of an unhealthy climate. The point itself was high and heavily wooded and projected out into the river giving an unobstructed view in both directions. Contemporary accounts appear to agree with the description left by David Ward, brother of Samuel and Eber. Visiting his brothers, he was not impressed with Yankee Point, causing him to chronicle:

"The country was flat, low and undrained. In some places were open hay marshes and timbered swamp, some of which were filled largely with a great growth of timber, mostly of Oak, Elm, and Black Ash. No hills or mountains could be seen to rest our longing eyes on, but everywhere a country monotonous, flat and having a black, deep, rich soil. The creeks being largely stagnant combined to make a condition that produced malaria in the hot season of the year." 9

9. David Ward, op.cit., 37.

To David Ward, coming from the hills of Vermont, the marshes of the St. Clair made no appeal. He would have nothing to do with Yankee Point or Ward's Landing as it soon came to be known up and down the inland lakes. But to Samuel, who meant to make his fortune in shipping, the flats were ideal. Here there was plenty of water, many little canal-like rivers where dry docks could be built at a minimum of expense and where

boats could be constructed and launched with little difficulty. Here, too, was a centrally located point from which Ward boats could sail into Lake Huron and into Lake Michigan to the west and as far as Buffalo to the east. To have the headquarters of such a shipping concern at Yankee Point appeared to this shrewd pioneer as both feasible and practical.

Until the new home could be built the Salem Packet provided excellent living accommodations for Samuel Ward, his wife, the former Elizabeth Lambertson, his brother Eber, and the two sailors who had made the trip. The trees on the point, which had to be cleared away before there could be space for the house, also provided the required logs. The new home, erected by the four men in record time, was of the typical frontier variety. No time could be wasted in construction. One room would be quite enough at the start. And if Samuel had forgotten to bring along some window glass, that oversight could be remedied by pasting greased paper over sticks which had been crossed in the shape of a sash. There would always be time for improvement at a later period. William L. Bancroft, who visited at the first Samuel Ward home on Yankee Point, described it as being made of

"...round logs, roofed with 'shakes',
a chimney piled col-house fashion,
of shakes and clay, and all finished
off with daubing and chinking." 10

10. William L. Bancroft, op.cit., 338.

Ten years later an imposing brick house that was the talk of the shore settlements from Mackinac to Buffalo, sheltered

Samuel Ward and his wife.

And because Samuel Ward was first of all a business man, the erection of a warehouse, far larger and more commodious than his own home, followed as soon as his family had been sheltered. The Salem Packet brought huge quantities of supplies, commodities that pioneers in the wilderness would require, to the new warehouse. There were then no settlers to whom Ward could sell the produce from his warehouse, for in 1819 there were no other settlers at Yankee Point. Not even the Indians lived in the neighborhood of the St. Clair flats. But Samuel Ward knew that soon the settlers from the East would come to Michigan and to Wisconsin, even as they had come to western New York and to Ohio. He knew that when they came he would be ready. His was the vision of the pioneer.

Chapter III
LIFE ON THE ST. CLAIR FLATS

Eber Ward, after the death of his wife in the wilderness of Pennsylvania, became a man without an objective. He had returned to his family at New Salem after helping his brother build the log cabin and the warehouse at Yankee Point. He spent his time in doing chores for other settlers and he earned by his efforts just enough to keep want from his little family. Always restless, he became even more so now. Life at New Salem became monotonous. Too many new settlers were coming into the Western Reserve and Eber Ward felt that he was being crowded out. He thought of his brother in his little log cabin at Yankee Point. The westward surge of migration had not yet flowed over Michigan. There would be greater opportunity in that new country.

In 1821 Eber Ward decided to leave the populated eastern shore of Lake Erie and seek rest and quiet at Yankee Point, which now had come to be Ward's Landing. His daughter Emily and his son Eber were to accompany him. Sally and Abbie were to remain with friends at New Salem, were to remain there at least until a new home could be established in the Michigan wilds. Samuel Ward came down to help his brother make the necessary arrangements. But the trip to the St.Clair flats was not to be made on the Salem Packet.

At the very time that Samuel Ward was establishing his headquarters at Yankee Point, new, and what was to prove serious competition appeared on the lakes. Where there had been only two other sailing vessels to challenge the reign of the Salem Packet, a new type of vessel now made its appearance. It was in 1818 that the first steamer on the Great Lakes, the Walk-in-the-Water, was built at Black Rock near Buffalo. Samuel Ward understood the sailing of ships, but he knew nothing of steam driven vessels. Yet for three years he had seen the Walk-in-the-Water, plying from Buffalo to Detroit, taking business from his own boat. Steam navigation was faster, more reliable. Shippers along the lakeshore seemed to prefer it to Ward's Salem Packet. Samuel Ward was ready to investigate this new kind of boat that was being driven by great side wheels and that was powered by boilers which blew huge clouds of smoke through a funnel on the deck. If these new steamers were to garner the trade of the Great Lakes, Samuel Ward wanted to know all about them. So he decided to make a trip on what was the first steamer on the Great Lakes.

Samuel Ward, on that trip, found that the Walk-in-the Water, which had been named after an old and "good" Wyandotte chief, was an adaptation of Robert Fulton's Hudson River steamer. He found that the vessel had two masts which were always used when there was a wind. He found, too, that with engine going and sails set the Walk-in-the-Water could attain the then incredible speed of ten miles per hour, far surpassing the uncertain speed of the Salem Packet.

Young Eber Brock Ward, expectantly awaiting his tenth

birthday, found racing along the one hundred thirty-five foot length of the little steamer great sport. The splash, splash, splash of the buckets on the side wheels intrigued him; the constant throb of the engine was music to his ears. This was youthful Eber's first experience with travel on the Great Lakes, his first contact with a lake steamer. He often recalled the trip at a later day when he was master of one of the largest steamers on the lakes, and at an even later time, when he owned a whole convoy of steamers a hundred times as large as the Walk-in-the-Water. 1

1. Details of this trip have been based largely upon the Stewart MS.
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The trip from New Salem to Detroit took three days and cost Samuel Ward, who had a cabin with a berth, eighteen dollars. The Eber Ward family went by way of steerage and so it cost old Eber only seven dollars while he had to pay a similar sum for his two children. This trip on the first lake steamer provided a thrill for all of the Wards, but they probably recalled it with mixed emotions two months later when a report came to Yankee Point that the Walk-in-the-Water had been wrecked in a storm. Luckily all of the passengers were saved, but all had suffered from exposure and all had lost their belongings. 2

2. George B. Catlin, The Story of Detroit, 232 et seq.
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When Eber Ward and his two children arrived at Yankee Point in the autumn of 1821, they found that others had preceded them. Samuel Ward was no longer the sole inhabitant of

the St.Clair flats. The location had appealed to at least a few other pioneers and Eber Ward found that

"...there were at Yankee Point William Gallagher, James B. Wolverton, Bela Knapp, Samuel Ward and myself and our families. Five families at Yankee Point and on Belle River there were five or six Indian families, all enterprising people, and all owners of farms." 3

3. Stewart MS.

Eber Ward found that his brother had staked out a little farm, that he was doing a great deal of fishing, some trading, and less lumbering. But while business was quiet among the five white and five Indian families at Ward's Landing, it was not quiet in the many other ports which were springing up between Buffalo and Green Bay. The Salem Packet was continuing to do a flourishing business and Samuel Ward was thinking of adding other boats to his coastal business.

The Eber Wards lived with the Samuel Wards until a new home could be built, a matter which was attended to without delay. A rough log cabin, similar to the one originally built by brother Samuel, was constructed and Eber Ward recollects that he "soon built an addition to it which gave two rooms to our house", and he adds that all "were very comfortable". 4

4. Ibid.

In that miniature settlement on the Point there was little call for the services of Eber Ward. Farming had never been to his liking and sailing with brother Samuel was equally distasteful. When word came to Yankee Point that John Wilson was building a

sawmill twelve miles below Fort Gratiot, which was a few miles north of Port Huron, Eber Ward was ready to apply for the job. Young Eber had now reached the age of ten and so was ready, in the code of that day, to take his place with the men. He would go with his father to work on the new mill. In a small open boat Eber Ward and his son set out for Fort Gratiot, taking with them

"...food, bedding and a jug of whiskey, and a mat made of bullrushes for a roof to the shanty. We had plenty of food and would have been comfortable but for the gnats; they were intolerable." 5

5. Ibid

Eber Ward worked at the Wilson sawmill during the summer of 1822. None of the conveniences of civilization were to be found in the wilds of Michigan yet this pioneer relates that they were "very comfortable". Little Eber, taking his place by the side of his father, was becoming hardened, was likewise becoming accustomed to the country in which one day he was to become so important a figure.

But all did not go well for young Eber. During the hot summer, while he was helping his father build a dam for the Wilson sawmill, he was stricken with the dreaded malaria. It became necessary to take him to Yankee Point without delay and Eber Ward attempted to hire two Indians who were working for him to paddle the ailing youngster down stream during the night. But the Indians, superstitious as always, refused to embark on the trip during the night and the sick lad "lay all night on the ground in burning fever".

The hardships which the Wards were enduring with so little complaint in the wilderness of Michigan were no different from those which had to be endured by scores of early pioneers. They were the first in the new territory, they had to hew the way, they had to prepare the ground so that those who were to follow would find Yankee Point and the surrounding district more inviting.

Detroit, at this time, was a thriving village of some two thousand inhabitants. Samuel Ward on his Salem Packet found the port an excellent trading center. Here he secured the crude tools, the groceries, and the dry goods which the pioneer settlers required, and carried them to his warehouses, which were by this time located at many points along the shore. Settlers on the lakes north of Yankee Point were entirely dependent upon Samuel Ward for their supplies. For the grinding of their corn and of their wheat the settlers along the St. Clair were forced to make a twenty-mile haul to Mt. Clemens. And, in the wilderness, variety was not to be found on the menu of the pioneer. The diet was rather simple as is indicated by Eber Ward's statement that

"We had plenty to eat of wild meat,
and we used hulled corn instead of
bread until we got tired of it." 6

6. Quimby Papers, Letter from Eber Ward to Emily, June 16, 1823.

Just how the diet was changed after they "got tired of" hulled corn is not related.

Within a few years, Ward's Landing had attracted enough new residents to merit its third name change. For the next twenty-

five years it was to be known as Newport, though the Ward clan continued to dominate life in the little village. Samuel Ward was expanding his shipping business. The run from Green Bay in Wisconsin to Buffalo in New York was becoming more strenuous from year to year because of the many new communities which were springing up along the route. As the pioneer shipper had foreseen, the increase in business soon required additional shipping facilities. Newport was ideally situated for the construction of lake boats, and Samuel Ward proceeded to build dry docks where the keels of future ships could be laid.

For years Samuel Ward had heard rumors that a canal was to be built connecting the Atlantic with the Great Lakes. He watched the progress which was being made on the Erie canal, and determined that he would be ready to use that canal as soon as it was completed. The wheat from the West, figured this shrewd shipper, could be carried by way of the canal to New York City and, on the return voyage, the boats could bring manufactured articles from the East. Because he believed that a profitable trade was possible, he proceeded to build a ship which was to be adapted especially to the canal traffic.

Modeled like a canal boat, with full ends and a rudder hung over the stern, the St. Clair of twenty-eight tons, was launched at Newport in 1824, in ample time to be in readiness when the Erie canal opened. The sails had been spun and woven by "Aunt Betsy", Samuel Ward's good wife, and the masts and rigging were so arranged that they could be taken down while the boat was being towed through the canal. When announcement that the Erie would soon be open to traffic was received at

Newport, the St. Clair was prepared to sail.

But Samuel Ward had no thought of sailing his boat through the canal without a cargo. Taking Eber Brock Ward, who was now thirteen, along as his cabin boy, Samuel Ward sailed the St. Clair to Green Bay and there loaded up with a cargo of potash, furs and gun stocks. This having been done, amid the cheers and well wishes of the inhabitants, he cleared for New York City. The trip to Buffalo was uneventful. When that point was reached, the masts were taken down and the two horses which the proud ship-owner had brought from Michigan for this purpose, were placed on the tow path. It was found that Samuel Ward had built well. The St. Clair was towed through the canal without mishap. Once at the eastern terminus, the masts were reset and the St. Clair sailed proudly down the Hudson to New York, the first ship from the lakes to complete the trip to the seaboard metropolis.

Because his was the first lake boat through the canal, Samuel Ward believed that the canal authorities would meet him with a gun salute and would permit him to pass through the waterway without the payment of toll. But the practical canal authorities had other ideas. The improvement had run into high figures and the creditors had been assured that their investment was safe because tolls would soon pay for the building of the "Big Ditch". They saw nothing romantic about the St. Clair's trip from Green Bay. She was simply the first vessel upon which they could levy their toll.

While his pride may have been hurt, Samuel Ward had little of which to complain. He sold his Green Bay cargo in

New York at a neat profit, loaded his vessel with eastern merchandize and with salt, and sailed back to the West. The salt cargo was much like carrying coals to Newcastle, for at a later date his cabin boy nephew was to start Michigan upon the way to becoming the largest salt producer in America. But in 1825 salt was a profitable cargo to carry westward. Samuel Ward cleared a net profit of six thousand dollars on his venture and determined to continue the sailings as long as the St. Clair could withstand the buffeting of the lakes. His earnings were made on a schedule which charged fifteen dollars for passengers and five dollars per barrel for bulk freight. 7

7. William L. Bancroft, op.cit., 339.

But Samuel Ward was not depending entirely upon the through traffic for his trade. His ships--the Albatross of twenty tons and the Marshall Ney of seventy-three tons had now been added to the fleet--stopped at the many little settlements which pioneers were building along the shores of Lake Erie, Lake Huron and Lake Michigan. The only contact which these settlements had with each other and with the East was by way of the lakes and the Ward line was soon depended upon for all trade. Money was scarce in these western communities; but Samuel Ward was perfectly willing to barter. His captains traded products from the East for the farm produce of the West and in that trade Samuel Ward in his Newport home found riches.

Eber Brock Ward, a mere child as age is figured today but already on his own in 1825, was learning about ships and about

business while he acted as cabin boy on his uncle's boats. He came to know the western country and to love it. The knowledge which he acquired during these years was to prove valuable at a later period when he was ready to launch upon his many enterprises.

The education of his four children, Sally and Abbie had now been brought to Newport, concerned Eber Ward greatly. He came from that New England stock that was accustomed to open schools wherever a new residence was established. But there were too few children among the dozen families at Newport to permit of the establishing of a school. So "Aunt Emily" taught the two little girls what she could while her brother, Eber, continued to do a man's work on his uncle's boats.

Life was not easy on the St. Clair flats in the twenties. While the population of Newport was small, many travelers made it a stopping place, for the river was the roadway along which all traffic from the North passed. For Samuel Ward this traffic meant additional business, but for "Aunt Emily", rearing the little family, it often meant trouble. Especially dangerous, or at least annoying was Kishkawko, chief of the Saginaw Chippewas, who had been in alliance with the British in 1813 and who had led the Indian forces in the distressing capture of the fort at Detroit. He was recognized as the leading collector of scalps at the River Raisin massacre, and although he had signed the treaty with Governor Cass transferring the lands around Detroit to the United States, he had never become friendly with the Americans. It was his claim that the treaty had been secured by fraud, that he had signed it while under the influence

of the white man's whiskey.

So Kishkawko remained the terror of the St. Clair flats. He stole whatever he wanted from wherever it happened to be. The white man's law, he said, was not his law. One day he arrived at the Ward home at a time when only Sally, still a child, was in the house. The Chief wanted whiskey, but, says Eber Ward

"We had none and he went to the barrel of vinegar, turned the faucet and left the vinegar running, took some bread and, as he and his guard were leaving the house, Kishkawko took his rifle rod and whipped Sally severely." 8

8. Stewart MS. See also George B. Catlin, op.cit., 278

Such actions on the part of the old chief were common, but the handful of settlers could do little about it for, as Eber Ward says, "he always had a bodyguard of desperate looking Indians". Four years later Kishkawko came to an inglorious end. In a drunken brawl he killed one of his fellow tribesmen and, upon coming to Detroit with his still bloody hatchet, he was captured, tried, and sentenced to death. Rather than suffer death by hanging the old chief took poison. The St. Clair flats were more peaceful after that.

But the Kishkawko incident troubled Eber Ward. Newport, he decided, was not yet safe for his family. Not only were there dangers, but there were no educational facilities. So the children were sent back to New Salem, which had grown considerably and which was now known as Conneaut, Ohio. At Conneaut, Emily was able to secure employment in the household of

Jonathan Scott, a man credited with possessing considerable education for that day. Part of the arrangements of employment provided that Mr. Scott was to give Emily instructions in the rudiments of English. Eber Ward thought this an excellent opportunity for Emily, with what she learned from her new employer, would be able to instruct her two younger sisters. Her father was vitally concerned that Emily make a good impression in the Scott household as is evidenced by a letter he wrote to his daughter on February 2, 1829, reading

"Your situation I think to be a good one and as Mr. Scott is no doubt friendly to you I have no doubt you will conduct yourself with the uprightness and industry by which you would wish to distinguish and which will insure you the confidence of your acquaintance. I am pleased that you have an opportunity to improve yourself in the science of grammar and that Mr. Scott is kind enough to instruct you." 9

9. Quimby Papers.

So Emily worked for Mr. Scott, improved herself and cared for her two younger sisters. She was a busy young lady, who, as a pioneer in a new country, shirked none of the responsibilities. It was in this frontier existence, in which at an early age each youngster was forced to meet the problems of adulthood, that the character of "Aunt Emily" was molded. It was here that she acquired those traits which were to endear her to young and old in after years, traits which enabled her to function as a balance wheel for her energetic brother in his later business enterprises.

As for that brother, playing the part of a man on his Uncle's boats, there was to be no formal schooling for him. His school room was the deck of a sail boat and the shore line of the Great Lakes, his teachers the pioneer New Englanders, the French and the Indians who lined those shores. Of book knowledge Eber Brock Ward had little despite the fact that his father relates that he collected "quite a large library of historical and scientific works and plenty of newspapers". 10

10. Stewart MS.

From these, coupled with such information as his father could give him, the youthful Eber gained his knowledge of the great country which lay to the east. But that East never played an important part in his life. It was the Middle West, his Middle West, to which he always remained devoted. Here, in his vast school room he found opportunity and because the Middle West was good to him, he came to believe that it would be the same for all others. There might be a great country to the east of Buffalo, an even greater world beyond, but the United States would one day find in the Middle West the resources that would make her the most powerful country in the world. Eber Brock Ward believed this implicitly. He would spend his life to make it come true.

Chapter IV

A BOY COMES OF AGE

The Wards were pioneers of the Great Lakes region but unlike other pioneers of that day, they were not farmers. Such farming as had to be done in order to subsist, Samuel and Eber were willing to do, but if they could purchase their produce it served their purpose better. Eber Ward was content to work for those other newcomers who were building the new country. He followed his brother from one place to another, but it was only on very rare occasions that he worked for him.

Samuel Ward, on the other hand, objected not only to farming but objected, likewise, to working for others. He was an individualist in every sense of the word. He would build his own empire, would let others work for him. Here in the Middle West, he felt, was ample opportunity beckoning to all, waiting for virile men to make their mark. And already he had proved to himself the soundness of his ideas. Already he was a rich man at the time his nephew was acting as a cabin boy on one of his ships. He had the finest home on the Great Lakes, well stocked storehouses along the shore, a fine fleet of sailing vessels. Samuel Ward wanted no more. As soon as there would be somebody to whom he could turn over the thriving business he would retire and live a life of contentment in Newport.

His greatest regret was that his marriage with Elizabeth

Lamberton had not been blessed with a son who could carry on his work. There had been a son, but he proved not fitted for the rigors of frontier life, a sickly lad who died at an early age. Other children there were none, but Samuel and Elizabeth Ward attempted to fill the void by adopting Mary McQueen, a little orphan girl whose father had worked for Samuel on one of his boats. Mary, who became far better known as Polly in years to come, grew up in the Samuel Ward household in Newport where she saw much of the young Eber Brock Ward.

In this nephew, Samuel Ward saw the boy whom he had desired for his own son. He had never thought highly of the business acumen and enterprise of his brother, but for his brother's boy he had nothing but praise. He thrilled as he noted the manner in which the youthful Eber took to the work on the boats. He noted the shrewdness which the boy displayed, noted how readily he was accepted by all with whom he came in contact. And the Uncle hoped that the day would come when he could entrust his growing business enterprises to his nephew.

Those business enterprises were reaching no mean proportions. The old Salem Packet, the Albatross and the Marshall Ney were doing a profitable business on their coastal trips. The voyage on the Walk-in-the-Water in 1821 had not convinced Samuel Ward of the advantages of steam navigation. He was willing to concede that the steamer made better time, but he knew that steamers cost more to build, were more expensive to operate. So he remained faithful to his schooners even after additional steamers had made their appearance on the lakes. Perhaps his schooners

were slower but that was of little importance. Time meant little in that frontier country. While the owners of the steamers were losing money, Samuel Ward continued to add to his reserves.

Two ship building yards had been constructed on the St. Clair Flats and here a large number of river boats that were used for the Detroit trade, were constructed. Here, too, Samuel Ward built two additional schooners which were to be in readiness by the time Eber Brock Ward reached his majority. The Uncle hoped that his nephew would then be ready to take command of one of these new boats. It was in 1832 that the Elizabeth Ward, named after Samuel's good wife, was placed in service and, early in the following year, the General Harrison was launched. The Elizabeth Ward was a fine ship of sixty-five tons, while the General Harrison was a one hundred and fifteen ton craft. Both were splendid sailing vessels, the pride of all lake sailors, but the steamboat owners were certain that Samuel Ward had erred in not building steamers. The schooners, they said, were through on the lakes.

Two distant relatives whom Samuel Ward had lured to Newport were responsible for the construction of all of the Ward boats. Jacob L. Wolverton, a son of "Aunt Betsy's" sister, was the superintendent of construction and in that capacity it was his task to design the new vessels. It is a credit to his workmanship that not one of the boats developed any structural failures. All were seaworthy and all continued in service long enough to earn a handsome profit for their Newport owner. Marine

men were agreed that the vessels were far in advance of what had appeared on the lakes up to that period and other designers were not slow in copying the worthy features.

B.F.Owen, who had married Abbie, youngest daughter of Eber Ward, was the engineer in charge of machinery and it is worthy of note that one of his later boats, the North Star, held the record for the run from the Sault to Cleveland. 1

1. William L. Bancroft, op. cit., 345.

The Samuel Ward ship yards at Newport had little difficulty in securing carpenters to work on the boats and in time a considerable number of new homes made their appearance in the little village on the St. Clair. The ship builders received one dollar and a half for a day's work, one half of this amount was to be paid in goods taken from the Ward warehouses, while the other half was in the form of notes, payable within six months. Currency was scarce in that frontier community and by this ingenious plan Samuel Ward found it entirely feasible to carry on his business at Newport with a minimum amount of hard money. The workers took flour and pork and shoes and clothing from the Ward warehouse and were usually "obliged to get goods before any cash was due" so that the notes were redeemed in merchandise rather than in cash. 2

2. Rev. Thompson in Marine City Reporter, November 18, 1881.

While this scheme enabled Samuel Ward to carry on his Newport enterprises with a small amount of currency and at the same time show a profit, there was little complaint. Young

Eber's uncle was known for his scrupulous honesty up and down the lakes. He was recognized as a careful, industrious business man and those whom he employed came to be leaders in the new communities. Rev. Thompson points out that

"Captain Sam was the king of this community. He was the arbiter of all disputes. So long as he could control business was quite decent; but he could not, nor would he allow anyone else to raise above dependency upon himself if he could help it; yet, notwithstanding this, he was socially very agreeable and always made friends of those he wished to defeat." 3

3. Ibid

It was not difficult for Samuel Ward to make friends with those he met. It is related that he "seemed to magnetize everybody" with his spirit, that he seemed to "inculcate them with an insatiable desire to make money". He was the outstanding man of the new Michigan country; he was the pioneer builder who laid the foundations upon which much of the economy of the Great Lakes region was to be built.

In such an atmosphere the youthful Eber Brock Ward flourished. He idolized his uncle for he saw in him everything that he wanted to be. Here he learned the value of hard work, the importance of thrift. He learned, too, of business, of business on the Great Lakes which were one day to become such important avenues of commerce. And because he learned so well, he pleased his uncle. Here, said Samuel Ward, was a worthy successor; one who could carry on the work of building the great frontier; one who would be a leader of men in this new country. Samuel Ward was a shrewd judge of men.

So it came to pass that when Eber Ward reached his twenty-first birthday he was named captain of the General Harrison, the finest schooner then plying the waters of the Great Lakes. His seven years before the mast of his uncle's boats had made of him a full-fledged sailor who knew how to handle a vessel in any kind of weather, and who knew, likewise, how to handle the business at the many ports of call. He had come up the hard way, had received no special consideration from Samuel Ward because that stern boat captain knew full well that any favors shown to the nephew would be resented by the other members of the crew. How this young man, who now held command of the General Harrison, appeared at the time is told by the chronicler Bancroft, a contemporary. He met the newly appointed officer shortly after he assumed charge and he describes him as being

"... rather unprepossessing in appearance, hardly of the average stature, with a cold, blue eye, ruddy face, and what is known as an 'iron jaw', betokening a firmness of purpose that characterized his life. He affected a little of the sailor swagger." 4

4. William L. Bancroft, op.cit., 339

The cold blue eye and iron jaw were to become well known throughout the Great Lakes region, for this young man who was deemed by Bancroft as "all together more fit than his Uncle to go down to the sea in ships" was to extend his influence far beyond the shoreline.

As a sailor Eber Ward soon proved himself. His prowess became legend up and down the lakes. He could take his vessel through any gale. The Samuel Ward enterprises

were safe in his hands. It was in 1835 that one of the worst storms of all times swept over the lakes. It was one of those November storms that inland lakes sailors have come to know so well and to fear so thoroughly. Captain Eber Brock Ward was taking his General Harrison from Mackinac to Detroit when the storm broke. The sails were reefed and every effort was made to keep the boat on its course. But the wind was too strong and Captain Ward soon realized that he would have to change his tactics or lose his ship. By clever sailing he managed to head the vessel toward shore and was finally able to cast anchor under the highlands of Sauble. A man was lost overboard during the blow, but the passengers and the ship were saved. Schoolcraft, who was a passenger during that trip, relates that he

"...thought that our poor little craft must go to the bottom, but owing to the skill of the mariner (Captain Ward) we eventually triumphed. Captain Ward never faltered in the darkest exigency. For a day and a night he struggled against the elements, and finally entered the Straits at Fort Gratiot, and he brought us safely into the port of our destination." 5

5. J.H.Beers, History of the Great Lakes, I,620.

Samuel Ward had not misjudged his nephew. The finest schooner on the Great Lakes was in the hands of an able mariner. More and more Captain Ward was entrusted with the details of his uncle's business. Samuel Ward had accumulated as much wealth as he desired. He wished to retire. He was testing his nephew to ascertain whether he could carry the burden. He did not find Captain Ward wanting.

Lake steamers were making steady inroads upon the business of the Great Lakes and while Captain Eber Ward was proud of his fine schooner, he nevertheless eyed with envy the steamers as they passed him by. He knew that those steamers made faster time, knew, too, that they were more expensive to build and to operate. It was his belief that the Middle West was being settled so rapidly that a faster boat would prove more profitable. In the old Salem Packet two trips a summer had been quite enough to serve the needs of the many little settlements. Additional trips would not warrant the expense which they incurred. There was, in those early days, just so much bartering to be done and, no matter how many trips a vessel might make, business could not be increased. Rapidly growing settlements, on the other hand, indicated more potential business and Captain Ward argued long with his uncle, asking him to add steamers to his fleet.

The respect in which Samuel Ward held his nephew may be gleaned from the fact that he gave heed to the suggestion and continued the investigation into the feasibility of steamers, an investigation which had started with that trip on the Walk-in-the-Water.

For many years Samuel Ward had been doing business with Oliver Newberry, who had the largest warehouse on the lakes, located at Detroit. Newberry had always been interested in navigation and was in complete agreement with the argument which favored the steamer over the sailing vessel. In fact he was so convinced of the correctness of his position that he determined to build a steamer of his own and asked Samuel Ward to join him as a partner. The Newport shipping magnate agreed

and ere long the Steamer Michigan , pronounced the largest and finest steamer on the lakes, took to the water. Propelled by twin walking beam, low pressure engines, with a stroke of seven feet three inches and cylinders forty inches in diameter, the Michigan could outdistance any other boat on the inland waters. 6

6. George B. Catlin, op.cit., 303

The venture proved a success. Captain Eber Brock Ward had been correct in his analysis and Uncle Samuel resolved to build no more sailing vessels. It would be steamboats for him from this point on. So fixed did he become in this idea and so rapidly did he carry it out, that within a few years he came to be known up and down the lakes as "Uncle Sam, the steamboat king". And Captain Ward, happy in the thought that his uncle had followed his suggestions, was anxiously awaiting the day when he could resign his job as captain of a sailing vessel and accept command of one of the steamers.

Six years were to elapse before that would come true, but in the meantime Captain Eber Ward was becoming a man of affluence, was becoming intimately acquainted^a with every harbor on the lakes, was studying the gigantic developments which were going on in the new country. He took his General Harrison from Newport to the thriving village of Chicago, to the Sault, to Detroit, to Cleveland, and as far east as Buffalo. Everywhere he became known and respected; everywhere he found it easy to do business. On one of those trips he took his fine boat to Bois Blanc Island where his father was now the lighthouse keeper and where his sister Emily was doing the work of a man as his assistant. During

the winter, Emily took sick and had to be moved to Mackinac. Captain Eber Ward, always the dutiful son, left the bridge of his ship to aid his father on the island. It was not an easy matter for him to leave the waterways he loved so well, but Eber Brock Ward was always one who placed first things first. Of life on the island during that period, he relates:

"Our mails were regular, once a month, thanks to Uncle Samuel's boats. During the winter we had to get our wood across the ice on sledges with dogs. Father had raised all of the potatoes we needed and even had some left for market. About a hundred barrels of fish were caught each year off the island." 7

7. Quimby Papers

Captain [~~Eber Brock~~] Ward learned that lighthouse keeping was as dangerous as commanding a ship. He learned that men made sacrifices to keep the beacons, which guided him from port to port, burning. He learned of the time that his father had gone to Mackinac and because of a storm had failed to return, leaving Emily alone to tend the lights. High waves lashed about the foot of the lighthouse gradually undermining the foundations. Anxiously Emily watched the storm and when she noticed open seams appearing in the stone work she knew that danger was imminent and that the time to act had come. She feared that the entire structure would collapse and, because she was the sister of a sea-faring brother, she knew that the lights would have to be saved. Perhaps her own brother, walking the bridge of his schooner out there on the lake, was depending upon that light. Despite the fierce wind, Emily climbed the

outside spiral stairs to the top of the light tower, removed the lamps and other equipment of value, and descended to set the lamps at another vantage point. Shortly after, so they told Captain Ward, the tower toppled over, but fortunately fell in such a manner as not to crush the residence. 8

8. Silas Farmer, op.cit., 1235.

But lighthouse tending was no task for the ever-active Eber Ward. As soon as Emily returned to the island, he resumed command of his ship. His arrangements with his Uncle Samuel called for no salary. Rather was Captain Ward to receive a certain percentage of the profits of each trip and, since he was a shrewd bargainer, the profits were sizeable indeed. In the smaller settlements cash was still at a premium and barter continued to be the method for doing business. The future pathfinder of American business learned much in his trading along the shores, learned much that was to prove useful at a later period.

He used to tell of some of the old French inhabitants who loved good horses and horse racing. Naturally, in any horse race there would have to be stakes in order to make the contests more exciting. Since no money for stakes was available it was found that oats made a good substitute and horses were brought from miles around to race for the Oat Stakes. Eber Ward enjoyed those races, came to love horses, and retained his interest throughout his life.

During his lay-overs in Buffalo, Captain Eber Ward always stayed at the Landen House, then the principal hotel in the town ..

He enjoyed his stays at this hostelry because here he always met the men of the East, the East from which he had come and in those gatherings he learned of what was going on in the section he had once called home. He learned of the markets and of the opportunities which were constantly being opened, and he learned, too, of the "iron horses" which were already beating a path westward and which, it was foretold, would one day put an end to the ships. Eber Ward heard and wondered, for at that time the people of the West were not thinking of "iron horses"; they were thinking rather of canals which would link the waterways of this middle country. In Ohio, in Indiana, in Illinois, and even in Michigan and Wisconsin, canals were being built which were bringing great cargoes from the inland country to the Great Lakes, cargoes which were providing more freight, greater profits for the General Harrison. So Captain Ward sat in the Landen House and pondered over what he had heard about the "iron horses" which were stretching their gleaming, iron tongues westward.

In Detroit it was at "Uncle Ben" Woodworth's Steamboat Hotel that Captain Ward would mingle with the guests. "Uncle Ben" was an encyclopedia of information, for the massive, genial proprietor of the Steamboat Hotel was the official greeter of the rapidly growing metropolis of Michigan. He was the universal "Uncle" of all who came to the city. He knew where new settlements were being developed, knew what business ventures were being contemplated. He was a political power in in the town and Eber Ward learned of politics and of many other things from him.

It was at Lasley's that the lake sailors gathered while laying over at Mackinac and here the astute Captain of the General Harrison heard stories of the big woods, of the logging which would one day make all Michigan rich. He heard stories, too, of the largest of all inland lakes and how unfortunate it was that vessels could not navigate the treacherous straits of the Sault. He heard all this and pondered. He would some day, he vowed, sail upon Lake Superior, straits or no straits. And as for the dense forests of which men spoke with so much feeling, they would provide timber and perhaps cargo for many a future boat.

But the stories which intrigued him most Captain Eber Ward heard from the backwoodsmen gathered at Captain Arndt's lodging house at Green Bay. Of vast wealth being discovered in the ranges to the north, of iron and of copper and of gold they talked. Even diamonds were to be found in this new Eldorado, this prospector's dream which extended along the shore of that great lake which could not be reached by boat. As he listened to those tales at Arndt's, Captain Ward's deep blue eyes glistened. He was a pioneer in a new country and in a new business. He would be a pioneer on the lake beyond the Sault. He would find a way to bring the wealth of the northland to the cities and villages of the eastern lakes. He would, if need be, establish industries which would shape these raw materials into useful commodities. Such were the dreams of this twenty-five year old Captain.

The lack of formal education proved no hindrance to Eber Brock Ward, for at the Landen House, at "Uncle Ben" Woodworth's,

at Lasley's, and at Captain Arndt's he learned the things he needed to know in that vast new country, learned the foundations upon which he was to rear his future, learned the shrewdness which was so necessary in that day and which was to take him so far. The school house could not follow the early pioneer, but the struggle for existence equipped him well for life on the frontier.

Men married at an early age on the St. Clair Flats. It was not difficult to maintain a family. A little plot of ground upon which to raise a needed crop, a crude log house, perhaps a cow and a pig, and life was complete. Not so figured Eber Brock Ward. Farming was not for him and he would not marry until he was well established in his chosen profession. Romance he found in the sea and on his boats. He knew few girls, and when his Uncle Samuel, at the time he made him a Captain, suggested that perhaps Eber would want to take a wife, the nephew only laughed. Where would he find one and why should he seek one? He was married to his General Harrison, he had time for no one else. Further suggestions by Uncle Samuel and jibes from the crowd at "Uncle Ben's" left him cold. He would marry, said he, when he was in command of the finest steamer on the lakes. Captain Blake was still sailing the Michigan, the palatial steamer owned jointly by Samuel Ward and Oliver Newberry.

It was in 1838 that Eber Brock Ward was able to realize his ambition. From his ventures with the General Harrison he had saved ten thousand dollars, a tidy sum in the thirties. With that sum he had purchased ownership of his boat and with the remainder he was ready to build a steamer. Uncle Samuel was in agreement, for more and more he was coming to look upon his

nephew as a partner rather than as an employee. Sixteen thousand dollars would be needed to build the steamer. Samuel Ward promised to put up one half of that amount if Eber would put up the other half, a half which he did not have. Eber Ward promised; he borrowed what he could and the work of construction commenced. In the shipyards on the St. Clair, The Huron, a hundred and fifty ton vessel, took shape and then, even as Captain Ward began to feel the sway of the deck beneath his feet, he found that he would require another two thousand dollars to complete his share of the payments. Uncle Samuel Ward, who was bringing his nephew up the hard way, refused to extend a loan. Friends had already given all they could and would. For a year The Huron remained on the ways while Eber Ward worked feverishly upon his General Harrison to earn the needed money.

Once the completion of the vessel was assured, the sly jibes of Uncle Samuel and of his many friends began to impress the young Captain. The world - his world - was expecting him to marry. So marry he would. But where to find a mate? He had spent little time ashore, had met few girls. The only girl he knew intimately was Polly McQueen, orphaned and adopted by Samuel and Elizabeth Ward. Polly was a nice little girl, well liked by all the residents of Newport. It would be a popular match. So in the Spring of 1838 Newport enjoyed the largest and the most exciting wedding that little town had ever witnessed. Polly McQueen, reared by the Samuel Wards, was married to the energetic Captain Eber Brock Ward. 9

9. David Ward, Autobiography, 145.

That marriage was to endure for thirty-one years and was to cover the period during which Eber Brock Ward became the foremost industrialist and empire builder of the Middle West. Two girls and five boys issued from that marriage, seven children, five of whom survived both their mother and their father, but none of whom had sufficient interest or ingenuity to carry on the great work which the father had started.

Captain Ward now established a home in Newport, a home which next to that of his Uncle Samuel, was the show place of the little village. And while his own ever increasing business soon took him to Detroit where he built a second home, his chief interest always remained in that little St. Clair port where he had received his real start in life. It was in Newport that he continued his ship building and operating activities, first in partnership with his Uncle and ultimately on his own.

With Captain Ward commanding from the bridge of The Huron the youthful desires of this young product of the West had been satisfied. But he was not the type of man to cease his endeavors. He would always establish another goal, not too far distant, but near enough to be possible of attainment through hard work and constant effort. He wished to make The Huron the most profitable steamer on Lake Erie, to which Lake he confined her trips, and that he soon realized his desires is borne out by the fact that, ere long, he garnered the lucrative trade along the shore. During the period that Samuel Ward had been content with his sailing vessels, the Lake Steamboat Association, with headquarters at Erie, had secured a monopoly of the Lake Erie trade, had, in fact, gained control of the

through trade from Buffalo to Chicago, leaving to the Ward boats only the local freight. Captain Eber Brock Ward on The Huron soon changed that situation. Because he was well liked, because all knew him to be a man of his word, because he managed somehow to offer lower rates, he soon secured much of the through business to the chagrin and discomfiture of the Lake Steamboat Association. The Association tried to drive him from the Lake and failing in this, determined to buy him out.

But Captain Ward was not selling his dream ship. He was willing to discuss the matter with his rivals but there could be no talk of a sale. He would promise to take The Huron out of the through traffic if it were made worth his while. Ten thousand dollars, figured the astute Captain, would be just about right for taking The Huron out of the Chicago-Buffalo run. The papers were duly drawn up, properly witnessed and signed. Captain Ward received his ten thousand dollars and The Huron, according to agreement, was taken off of Lake Erie. 10

10. Captain James McConnel in Cleveland Herald, October 4, 1856.

The transfer of The Huron did not prove the end of this matter. Eber Brock Ward had no thought of leaving the profitable Lake Erie trade to his rival. With the ten thousand dollars he had received, added to his other savings and doubled by Uncle Samuel, work was started at once on a ship which was to be twice as large as The Huron. It was in 1842 that Lake Steamship Association members were startled to see Captain Eber Brock Ward commanding the two hundred and seventy ton Champion on Lake Erie. The Captain had little trouble in again winning the through trade

and he was now in a better position than ever to compete with his rivals. When the Association protested vehemently, the pudgy Captain's blue eyes twinkled and he opined that the only boat mentioned in the agreement had been The Huron. That boat had been withdrawn from the through trade. The agreement had been kept to the letter even as the Wards always kept their promises. As to the Champion, that was an entirely different matter. Of course for fifteen thousand dollars - but the Steamboat Association had had enough of Eber Brock Ward. The fight for through traffic would continue and the Association hoped that Captain Ward would soon run his course.

As for The Huron, that ship had been withdrawn from Lake Erie but it was not idle. Nothing had been said in the agreement about Lake Michigan. Captain Ward secured a government contract to carry mail from New Buffalo to other points on Lake Michigan and with this back log for covering his expenses he soon developed a very profitable Lake Michigan trade, a traffic so profitable that other boats were added within a short time.

With such evidence of his nephew's business ability and shrewdness, Samuel Ward knew that he had not guessed wrong, knew that his nephew would be capable of carrying on what he had started, knew that the Ward name would be high on the list of Great Lakes ship owners for many days to come. That the nephew was surpassing the uncle as a businessman was generally agreed along the lake shore. Accepted was the statement of a contemporary when he wrote:

"There cannot be any doubt of the business shrewdness of Captain Sam Ward, but it is just as evident that in this line he is discounted by his nephew Eber, and he would not have amassed the wealth he did

had it not been for the sterling qualities of he who afterwards became one of Michigan's most prominent citizens." 11

11. Rev. Thompson in Marine City Reporter, November 18, 1881.

Samuel Ward had now amassed a fortune exceeding three hundred thousand dollars. He saw no reason why he should continue in business. He was willing to turn it all over to his nephew. But Eber Brock Ward would not agree with any such plan. He wanted Uncle Samuel, now known as the steamboat king, to continue as his partner and so insisted. Nevertheless, Samuel Ward gradually withdrew from active participation and the business was conducted more and more by the youthful Captain.

The foundations for the Ward enterprises in the Middle West had been laid.

Chapter V

MASTER OF THE GREAT LAKES

The building and sailing of ships was an individualistic enterprise at the time that Samuel Ward went to Yankee Point to build the St. Clair. Lake vessels seldom cost more than ten thousand dollars, most of the time cost less. Construction of ships was undertaken by the owner with the aid of such cheap help as he could employ in the pioneer settlements along the water front. When the new boat was floated, the owner, acting as captain, would sail it from port to port and pick up such business as was available. Only very seldom did a man construct more than one sailing vessel. Scarcely ever was a ship entrusted to any guiding hand but that of the man who had built and paid for it. Large companies, owning large fleets, were practically unknown even on the Atlantic seaboard, to say nothing of the inland lakes. The corporation, beginning to make its appearance in some industries, had not yet invaded the shipping business. When one individual did not have the means for the construction of a vessel, he would secure as partners one, or two or even three others who, in return for their investments, received shares in the earnings of the ship. Always one man in the group was a ship's officer, was a man who held shares in the boat, and it was this individual who would take command when the vessel was placed in service. Under such conditions it is but

natural that Carl Russell Fish says of the shipping industry of that early day:

"It was a boy and a young man's occupation with plenty of individual opportunity." 1

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1. A fine discussion of shipping in the Thirties is found in Carl Russell Fish, The Common Man, 73 et. seq.
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In keeping with the custom then prevailing Samuel Ward financed all of his sailing vessels alone, never took any partners, was forced to share profits with none. When it came to the steamship Michigan, the situation was somewhat different. That vessel would cost more to construct. The steamer had not yet proved itself as a money maker. Samuel Ward was won over to steam navigation by his nephew, Eber, and so, half heartedly, not at all certain that he was doing the right thing, he consented to a partnership with Newberry.

That was the only time Samuel Ward hesitated. The Michigan showed a substantial profit from the outset and the shipping pioneer, urged on by his nephew, thereafter built and financed all of his own vessels, a procedure with which the youthful Eber was not entirely in accord. The young mariner envisioned a gigantic fleet of lake vessels, covering the entire area of the Great Lakes. He knew that no one man could finance so large a venture, and so he urged a large organization into which many would pay money for the building of additional ships, the control to remain, however, in the hands of the Wards. The plan was new, so new and so startling that Samuel Ward could not grasp it and for the time being it remained only a dream in Eber Brock Ward's mind.

The Huron, which Captain Eber Ward sailed so proudly, had cost \$16,000 to build, yet under the management of the Wards it showed a net profit of \$21,210 during the six years of its operation, and this despite the fact that Eber Ward took the boat out of the Lake Erie traffic because of his agreement with the Steamboat Association. In 1846 he sold the steamer for \$4,000, thus adding to the profit of the venture. 2

2. Information on boat costs and earnings are taken from the Log of the Ward Line found in Burton Collection, Detroit.
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The Champion, built for the Erie trade to replace The Huron, was commissioned in 1843 at a cost of \$22,500, but in one year, in 1848, she showed net earnings of \$37,021. During the seven years of her navigation under the Ward flag this vessel netted a profit of \$79,168 to which must be added her resale value.

The Ward boats had made Samuel Ward a rich man and had laid the foundations upon which his nephew was to build an empire. Profits were pyramiding, and while Samuel and Eber Ward still retained their sailing vessels they began to expand rapidly in the steamship business. The energetic young captain was always finding new trade sources for the boats, and the Ward Log Book indicates that by 1849 a fleet of nine steamers was showing net earnings of \$122,763 for the year. A year later the Wards had an investment of \$391,000 in lake vessels upon which they realized a profit of \$205,590, a profit which was boosted to \$240,000 in 1851. Such earnings were unheard of at that period, and since they were in addition to earnings accruing from warehouses located in many places along the lake shore, it can be

noted that the Wards were well on their way toward becoming the richest and the most influential men of the Middle West.

That much of the success of the business was due to the genius of Eber Brock Ward is evidenced by the fact that his Uncle was withdrawing more and more from active participation in the enterprise. He was entirely willing to live in comfort in his beautiful Newport home and permit his nephew to carry on the business. That nephew was well qualified for the task, and soon it appeared to the longshoremen along the lake front that everything touched by Captain Eber Ward turned to gold. It was not as simple as that, however. Eber Brock Ward's success was to be found in his restless, daring pioneering. He was not content to remain in a groove. Profits alone meant nothing. Wealth and possible leisure held no appeal. He was a builder. He was ever seeking new fields of endeavor, ever willing to gamble on any likely new venture.

So in 1846 he became interested in the newly discovered Lake Superior mine fields. He was among the first to realize that Sault Ste. Marie was, one day, to become a highly important trading center. When that time came he would be ready. At Newport he built the Detroit, a vessel of three hundred and sixty tons and costing \$30,000, the largest sum yet expended by the Wards on any one boat. The Detroit was to care for the Sault trade, was, in fact, assigned to that trade before there was any such trade. Yet so certain was Eber Ward that vast shipping facilities would be required to carry the ore from this new country to the furnaces of the East that he was finally able to sell the idea of giant organization to his uncle. The Ward Lake

Superior Line, with the Detroit the flag ship of the new venture, was organized , the first shipping corporation on the Great Lakes. 3

3. Capt. James McConnel in Cleveland Herald, October 4, 1856.

The new steamship line grew rapidly, for even as Samuel Ward had built the St. Clair to be ready for the opening of the Erie canal, so his nephew was now building steamers to be ready for the Lake Superior traffic which he foresaw. The Ward Lake Superior Line was Big Business, the first big business enterprise in Great Lakes shipping. No longer would small schooners and tiny steamers serve the purpose of the Wards. Large vessels, larger than anything which had been attempted before, were constructed, and, while old, lake-wise seamen were shaking their heads in doubt, the Wards, at their Newport ways, were building vessels that were prophecying the traffic which the lakes would one day carry. The Sam Ward, the Pacific, and the Atlantic followed in close order, each of these vessels costing \$105,000. Then came the Ocean, the Pearl, St. Louis, Traveler, London and the E.K. Collins, all built at Newport and each exceeding \$110,000 in cost. The Ward Lake Superior Line was Big Business in truth. 4

4. Ibid.

Many additional boats were built, far too many to mention. When Samuel Ward died in 1854, fourteen steamers were owned by the Line in addition to six sailing vessels and a large number of tugs. But that was only the beginning for Eber Brock Ward.

In the immediate years that followed he built twelve additional steamers and added to these three large propellers, a number of tug boats for the river trade, and numerous barges. No other individual on the Great Lakes, no other group of individuals, could lay claim to so extensive a fleet. Eber Brock Ward had become the shipping tycoon of the Middle West. 5

5. Figures relating to ships and tonnage have been verified by J.P.Poole, shipping authority, Detroit, Michigan, and by E.R.Runge, Milwaukee, collector of information on Great Lakes ships.

The large fleet was built under the direction of John Wolverson and engined by B.F.Owen, the same men who had built the first Ward boats, and it is a testimonial to their craftsmanship that all of the vessels were staunch and entirely seaworthy. Not until 1852 did the Wards suffer sea losses. In that year, during a terrific lake storm, three vessels were sunk causing a financial loss of \$250,000 to the Line. 6

6. William L. Bancroft, Op.Cit., 344.

It was characteristic of Eber Brock Ward that he plunged into his extensive ship building program even before it had been definitely demonstrated that so much tonnage would be required on the Great Lakes. He plunged, too, at the very time that the "Iron Horse", of which he had first heard during his stay at the Landen House in Buffalo, was pushing rapidly westward, was, in fact, invading Ward's beloved Michigan. Eber Ward felt that the iron rails would ultimately take much of his commerce; but he felt, likewise, that the time of rail competition was still far distant and that his ships would pay for themselves

long before the railroads could make serious inroads.

Nevertheless the entrance of the railroad into Michigan was viewed with a certain misgiving. Several Detroit capitalists, headed by James F. Joy, had banded together for the purpose of constructing a road across the State. From Detroit to Buffalo on the Lake Michigan shore this "Iron Horse" was to run, and here was real competition for the Ward Line, which was in the midst of its expansion program. The railroad would make it unnecessary to ship freight around the northern point of Michigan and it was likely that Eber Ward, who now monopolized the shipping business, would lose some of his profitable traffic. The shrewd young businessman attempted to dis^suade the Detroit promoters. He urged them to place their money into his shipping enterprises instead. But his efforts went for naught. The argument that river traffic would always be heavier and more profitable than railroading made no impression upon the promoters of the railroad, despite the fact that Ward pointed out that the western terminus of the road would be located in a virtual wilderness. His reception by the railroad men is preserved in a statement by James F. Joy, who relates:

"Capt. E.B.Ward solicited my assistance in forming a company to build a small steamer for the St. Clair River trade. As I knew nothing of the steamboat business I did not engage with Capt. Ward. He went on and built his boat at a cost of \$11,000 and monopolized the trade between Port Huron and Detroit." ?

7. James F. Joy in Michigan Pioneer Collection, XXII,302.

If these Detroit promoters were intent upon building their

railroad, then, Eber Brock Ward reasoned, it would be necessary, in some manner, to tie the railroad in with his shipping business. Railroads in the fifties were hit and miss propositions. There were no through lines in the Middle West and, as Ward had pointed out to the promoters, their road "would start nowhere and end nowhere". No other road connected as a feeder at Detroit and the western terminus at New Buffalo was located in a sparsely settled region. Chicago and Milwaukee were thriving communities at this time; but there was no rail connection with these points and the shrewd shipping magnate knew that any business going to New Buffalo would ultimately have to find its final outlet in either the Illinois or Wisconsin settlements.

Once the railroad was built Eber Ward had little difficulty in convincing Joy and his associates of the logic of his contention. They were willing to enter into an agreement with Ward whereby the Ward Steamship Lines were to act as feeders for both the western and eastern terminals of the railroad. The Huron, which had already secured a mail contract, served the new railroad on Lake Michigan, while the Champion acted as a feeder on the Lake Erie side. So lucrative did this business become that it was not long before additional vessels were needed in the service and it soon became uncertain as to whether the Ward boats were an accommodation for the Michigan Central Railroad or whether the Michigan Central was nothing more than an adjunct to the Ward Steamboat Line. The following advertisement issued by the railroad leaves the question in doubt:

"A passenger train will leave Detroit for the West daily at 8:00 A.M. and arrive at Kalamazoo at 6:00 P.M. the same day....By this route the traveler passes the second tier of counties containing the following beautiful villages: Ypsilanti, Ann Arbor, Dexter, Jackson, Albion, Marshall, Battle Creek, and Kalamazoo; 146 miles in 10 hours; thence by B. Humphrey & Co's line of post coaches to St. Joseph, 56 miles in 12 hours; and thence by Capt. Ward's boat Champion, built expressly for this route, to Chicago, 70 miles in five hours, weather permitting, making 270 miles in about 30 hours to and from Detroit and Chicago." 8

8. Detroit Directory, 1846, Burton Collection, Detroit.

While the railroad was struggling to meet its bonded indebtedness and running expenses, the Ward steamers, serving the Detroit and New Buffalo points, were clearing more than their original costs each year. The railroads had not defeated Eber Brock Ward as yet. In fact, the Michigan Central which was supposed to put him out of business, was, in the final analysis, nothing more than a connecting road for Ward boats docking at Detroit with those operating on Lake Michigan. 9.

9. See James C. Mills, History of Saginaw County, II, 33. Also Log of Ward Ships, Burton Collection.

The esteem in which this shipping magnate was held by all and an example of his method of doing business is found in the fact that all agreements with the Michigan Central were verbal. Not a single formal contract had been entered into, and yet, Superintendent Brooks of the road avers that during the entire period that the arrangement continued, there was not a single

serious disagreement. 10

10. Capt. James McConnel in Cleveland Herald, October 4, 1858.

Business depressions, prior to the Civil War, were especially trying for infant industry. Because of the banking situation money was scarce and many a small business with a promising future folded up while the owner sought to reestablish himself elsewhere. The shipping industry suffered from the same depressions, was influenced by the scarcity of a suitable medium of exchange, found little to transport when nothing was being manufactured, when nothing was being purchased. Conditions, however, did favor shipping and gave it an advantage over other forms of business. The depressions of 1837 and 1857 worked as an impetus to migrations. Settlers in the East who found it difficult to make their farms pay, businessmen in cities in which there was no business, the great debtor class - to all of these the West loomed as the country of promise. Here, in the vast open stretches, opportunity beckoned. Here new farms could be hewn from the soil, new business could be started in new communities, youth would find an opportunity to earn a comfortable living.

Many of these emigré from the East tried the cheap, overland method of travel. They took their horses and their wagons and their families and followed the dim trails, trails which beyond Ohio were little more than Indian paths. Those who could afford the luxury went by water. Canals criss-crossed the Middle West, and the Great Lakes proved a veritable super-highway. It was

because of this fact that the shipping lines prospered even in times of adversity. Many of the new-comers had some means. New Englanders especially, were able to sell their farms and their stock and with the money thus secured they rode in comparative comfort through the Erie Canal. At Buffalo they embarked upon one of the Great Lakes boats, usually a Ward boat, and this carried them to their ultimate destination on the shore of one of the lakes. 11

11. See Lois Kimball Mathews, op.cit., 180 et.seq.

During the period that hard times were besetting the country, conditions in Europe were providing a situation that spelled prosperity for the new West. In 1845 the famine in Ireland brought on an unprecedented demand for American wheat. Michigan and Illinois and Wisconsin farmers were finding the soil suitable for wheat culture and because the product was bringing a high return, they began planting their land to the new crop. The result was that both Milwaukee and Detroit became the leading wheat shipping centers in the country, Milwaukee being in the lead of all other ports. So rapidly did wheat culture proceed that Wisconsin, in 1860, exported a thirty million bushel crop. 12

12. Joseph Shafer, Four Wisconsin Counties, 129 et.seq.

The steadily increasing demand for western wheat was intensified by the Crimean War in 1853, a war which curtailed wheat production in the famous Crimea. World conditions were

thus making of the Middle West the bread basket of all civilization and Eber Brock Ward's steamers were docking at all the ports from which this flood of wheat was being shipped. Depressions were not causing the Wards a great deal of trouble. Migrations and wheat shipments were showing a handsome profit and the Ward steamers continued business as usual during the hard times.

But while the Line was making money it was not always certain as to the value of that money. After the so-called removal of deposits had practically put the United States Bank out of business, bank notes of every conceivable form, from every conceivable source, made their appearance. When a Ward line steamer docked the purser never knew exactly how much real money the trip had netted. Metal money was scarce in the transactions carried on by the boats. Paper money, wild cat notes from banks in Kentucky, in Illinois, in New Jersey and in other states were always found in the till. Whether or not this paper money possessed any value the purser did not know. Times were hard and he had to take it or lose the business. The shrewd Eber Ward soon learned that he was better off taking these wild cat notes for the loses sustained in this manner were more than off-set by the profits, all of which would be lost if the bank notes were refused as payment.

When the Ward money was taken to the banks, the cashier would sort out what he wanted to take, take even that at a discount, and shove the remainder back through the wicket. Worse yet, banks were of such uncertain durability that they closed over night and Captain Ward lost many a penny in these

wild cat banks for his vessels touched at every Great Lakes port and banking facilities were arranged for in many of these ports.

A few such losses taught this pathfinder of American business how to handle the situation. No longer would Eber Ward deal with the discounting and defaulting banks. He could not keep the paper currency in his own strong box because it would depreciate while there. It was necessary that he dispose of it as rapidly as possible and at as high a rate as he could secure. A "curb broker", unknown in that day, was the Ward solution. Or perhaps it was a "curb stone broker", for G.F.Lewis, whom Ward hired for this purpose, found that people would not come to his office to purchase the wild cat notes. He found it good practice to go out among the business men of the various cities in which the Ward line did business and both Lewis and Ward were delight^{ed}ly surprised to find that in every town there were men perfectly willing to purchase the notes at a discount in the hope that they would one day appreciate in value. Since Lewis received a better return on the paper than the banks allowed, Eber Brock Ward was satisfied and Lewis was assured of his job. So successful was this venture that Lewis soon incorporated a Detroit brokerage house, a firm which was subsidized by Ward and which ultimately grew into a bank which transacted all of the business for the ever growing Ward interests. 13

13. William L. Bancroft, op.cit., 348; Detroit Free Press, January 10, 1866.

Samuel Ward, who had been so tired of it all for so long

a time and who had wanted to withdraw from active business but was prevented from doing so by his energetic nephew, died at Marine City, the Newport which he had built, on February 1, 1854. Samuel Ward was the western pioneer who first recognized the importance of the swamp-like St. Clair Flats, it was he who foresaw the need of transportation facilities between the many little settlements along the shores of the Great Lakes, and it was he who first dreamed of densely populated areas where agriculture and industry would meet. Samuel Ward was the New Englander whose vision of the Middle West proved prophetic.

That vision was accepted by the nephew, Eber Brock Ward. His was the same spirit, the same urge, to drive forward, to build a mighty empire in the Great Lakes States. It was not strange that this should become his objective. The young lake captain had been more closely associated with his uncle than with any other individual. He had been reared by that uncle, had been shown the path to success in the new country by him. Sister Emily had taken the place of the mother during the formative years, but from the day that Eber Ward became a cabin boy on the General Harrison, the uncle had led and had directed the youth. It was but logical that the young mariner should be instilled not only with the business acumen but with the foresight and vision of the uncle as well. It was logical, too, that the uncle, recognizing that his own son was not qualified to carry on the business, should see the nephew as his successor. And so, when the will was opened at Marine City, it was found that Samuel Ward, after making suitable provision for his wife, son and several close acquaintances, bequeath^{ed} the residue of his

estate, the great shipping line which he had headed, to his nephew

"...as a compensation for his long and faithful care of my interests, for his advice, assistance and good judgement in the general supervision of my affairs for a long term of years, during which time my credit has been unimpaired and my success in business has equalled my highest hopes." 14

14. Ward Papers, Burton Collection.

Eber Brock Ward had worked for and with his uncle for a period of twenty nine years. During that time a business which had three sailing vessels had expanded to an organization which boasted of fourteen of the finest steamers on the Great Lakes, an organization that was rapidly securing a monopoly of lake shipping, an organization that was one day to do more than any other in making the Middle West mighty.

Captain Eber Ward was forty-three years old at the time of his uncle's death. His cousin, David Ward, tells the whole story when he chronicles:

"Thus Eber Ward practically controlled the franchise of steam boat passenger and freight routes and the immense traffic on these routes during the next twenty years." 15

15. David Ward, op.cit., 3.

Chapter VI

THWARTING LEAPING WATERS

It was at Lacey's that Captain Eber Brock Ward heard strange and unusual tales of what was going on beyond the great Sault, the "Leaping Waters" through which high and turbulent Lake Superior was dashing to meet lower and smaller Lake Huron. While his General Harrison was being loaded at the Port of Mackinac late in the autumn of 1844, the Captain was chatting with his many friends in this seaman's home when he was attracted to the conversation of several men near by. They were telling of the wierd experiences of a government surveyor in the Michigan Territory on the south shore of "Gitchee Gumee" as the Indians were wont to call the highest lake. They were relating how William A. Burke had been unable to use his magnetic compass in the wilds to the north. The needle, it was said, danced around without rhyme or reason and refused to point in any one direction for any length of time. Burke knew that only a deposit of ore would cause his compass to act in this queer manner and, ere long, he discovered many veins of what appeared to be pure iron. Eber Brock Ward was not interested in iron at that early date, but he was interested in any discovery which might mean additional cargo for his growing fleet. So he stored away the gossip he had picked up at Lacey's, stored it away to be acted upon at some more propitious time.

That time was not far distant, for at Captain Arndt's lodging house in Green Bay, where Eber Ward often mingled with the residents, he found many strangers. Many of these strangers were prospectors, men who had heard of quick riches to be had along the shores of Gitchee Gumee. They were headed for the north country which had first been known to the French traders, and they were looking not for furs, but for copper and for iron. Ward knew well that the Great Lakes had at an early day been navigated in their least accessible portions. He had become a prolific reader and he knew that following the French explorers, hardy traders of the Hudson's Bay Company had come into the fur producing west by way of Hudson Bay and the great and turbulent Nelson River. He had read that Lake Superior, with its densely wooded southern shore and its high cliffed northern banks, had become the center of much of the fur trade. The bateaux of the Company and the canoe of the Indian had traversed the dangerous waters of Lake Superior many years before, had even penetrated eastward to trade on Lake Huron. 1

1. Charles E. Cartwright, The Tale of our Merchant Ships, 221.

But the voyageur of old, paddling his frail craft on Lake Superior, was forced to portage around the steep falls of the St. Mary's, falls which were called by the men of Eber Ward's day, "Sault", but called by the Indian and the trader, the "Leaping Waters" of the St. Mary's.

If ore was being discovered on the shores of Lake Superior, and if that ore was to be shipped to industrial centers in the

East, then, Eber Brock Ward figured, some means of avoiding the leaping waters of the St. Mary's would have to be found. He would place boats on the highest lake even if he had to build them there, but that would not solve the problem of transporting the cargo across the portage. A canal was the only solution and Captain Ward believed in canals because he had grown up in the canal era, an era during which every state was building myriads of water networks which started nowhere and which ended nowhere. He believed in canals, too, because as a boy he had sailed on the St. Clair when it, the first vessel from the upper lakes, passed through the newly opened Erie Canal. That trip had left an indelible impression upon the young cabin boy.

Long before this time others had thought of building a canal around the St. Mary's Falls. Hardy fur traders, more than a hundred years before, had grown weary of unloading, carrying and again loading their canoes at the portage. In 1797, to overcome this difficulty, the old Northwest Fur Company, not yet combined with Hudson's Bay, built a sluiceway on the Canadian side of the river, a waterway which enabled the voyageur to drag his fully loaded canoe around the falls. 2

2. Stanley Newton, Sault Ste. Marie, 97.

Eber Ward, who knew every foot of the shoreline of the five Great Lakes, had noted the remains of that ancient canal. He found that the sluice was not more than thirty-eight feet long, eight feet wide, with a nine foot lift which was only one half of the total drop of the river at this point. A canal

of this size, reasoned Ward, was sufficient for the bateaux of the voyageur and the canoe of the Indian. The men could easily drag a loaded boat through the sluice. But the General Harrison, the ship he commanded with such pride, required something more. So Eber Ward, hearing the stories of the prospectors, became an advocate for the St. Mary's ship canal.

He told uncle Samuel Ward the gossip he had heard at Mackinac, at Escanaba, and at Green Bay and that shrewd trader became at least moderately interested. The Wards had made money in the shipping business and the development of the mining industry in the north could mean nothing more than additional cargo for the Ward Line. Good reason, opined Samuel Ward, why he should do what he could to aid in the development of those mines.

So it came to pass that when, in 1843, the Medora Mining Company was organized, Samuel Ward was found as one of the guarantors of that company and when, four years later, ore from Michigan had become a reality, Samuel Ward was again found in the vanguard, this time as an incorporator of the Pioneer Smelting Company of the Upper Peninsula. And because it was not yet established what metals the peninsula contained, the crafty Wards covered all conceivable contingencies by providing that they were organizing for "the smelting and manufacture of iron, copper and other metals". 3

3. Henry M. Utley, Michigan, III, 296; 333.

On March 16, 1847 this company opened the first smelting furnace in the region. The Wards had begun to expand their

interests beyond the shipping business.

Nor were these two projects the limit of the Ward enterprise. The Jackson Mining Company, organized by several Jackson, Michigan, men, was actually taking ore from the ground. A forge was erected at Carp River to transform the ore into iron and Eber Brock Ward, wondering whether this was really iron, carried five tons of the ore eastward for the purpose of having it scientifically tested. In fact, he carried away in one of his boats the first five tons to be taken from the Jackson "Mountain of Iron". The iron was found to be of finest quality and the Great Lakes shipper, ever ready to try the new, caused the walking beam and shaft of the steamer Ocean, which he was then building, to be wrought of this material. 4

4. James M. Swank, The Manufacture of Iron in All Ages, 321; Also William L. Bancroft, op.cit., 341.

Not fifty white men were to be found in Marquette County at the time of the discovery of iron. There were no towns and an Indian encampment on the spot where Marquette now stands, was the only place of habitation along the shore. Yet this spot, known only by the simple name of Indian Town, was destined to become the first large ore shipping port of the United States. The prospective mines were all located directly south of Indian Town, and from this point lake shipments would have to be made unless the longer cross country haul to Escanaba were attempted. This longer route would have the advantage of permitting through shipment, without reloading, to eastern points, would, however, entail considerable additional expense. 5

5. Otto Fowle, Sault Ste. Marie, 421.

Even before the rush for minerals had fully developed, Eber Ward, acting upon the stories he had heard at Lacey's and at Arndt's, took his small steamer, The Detroit, to the Sault to determine for himself what merits there were to the various reports. He desired to ascertain whether this new enthusiasm for Marquette County was just another "metal fever" which would soon burn itself out, or whether it was the beginning of a promising future industrial endeavor. 6

6. John H. Foster, "Early Settlement of the Copper Regions of Lake Superior", Michigan Pioneer Collection, VII, 181.

What he saw drove him into immediate action. He found hundreds of prospectors surveying the country for miles around and he found, too, about ten miles south of Indian Town, numerous diggings that were already producing ore. His practiced eye noted that the ore would have to be hauled to Lake Superior, would have to be loaded on ships for the haul to the Sault where it would be portaged around the St. Mary's Falls. But there were no ships to be utilized on Lake Superior and to carry thousands of tons of ore between the upper and lower lakes would cause considerable difficulty as well as entail much added expense. Eber Ward did not know what to do about the portage but he did know how to overcome the lack of shipping on Lake Superior. He would float his boats on that lake even if he would be forced to build new yards to construct them. What he saw of the iron fields convinced him that here was a potential field for profits in days to come. And Eber Ward passed The Queen, with its iron beam, was then building in the

St. Clair yards. It would, said the Captain, be fitted especially to the Lake Superior iron trade. Because it would be difficult to haul the ship over the portage it would have to be kept as light as possible. Fifteen ton, Ward judged, would be about right. When completed, The Ocean was towed to the St. Mary's River, placed on logs, and hauled across the three-quarter-mile portage. The first steam boat, though a small one, had thus been launched on Lake Superior. Eber Brock Ward had wrought the miracle. 7

7. Willis J. Abbott, The Story of Our Merchant Marine, 241.

Lewis Marvell, one of the sailors on the fifteen-ton Ocean, has left an account of his experiences on the vessel. He did not think highly of the little steamer and complains because she capsized several times after being launched. This difficulty was soon remedied and The Ocean was deemed satisfactory for Lake Superior traffic. He relates that Ward built a sailing vessel, the top sail, seventy ton Merchant, sent it north with The Ocean, and then proceeded to have both boats hauled over the portage, a task which proved not too difficult for, says Marvell:

"We fell to and jerked her (The Ocean) over in short order and then tackled the larger one, the Merchant. They were both taken over on rollers, the same as buildings are sometimes moved." 8

8. Otto Fowle, op.cit., 422.

After Ward had shown the way, others soon followed. The Independence from Chicago was the next vessel to be rolled

over and after that a large number of boats, many of them belonging to the Ward line, were taken across in a similar manner. The copper and iron mines of Michigan were developing as Eber Brock Ward had foreseen and Lake Superior shipping became a profitable business.

Hauling the larger boats across the portage was not such a simple matter as Marvell makes it appear. It took days to work the large steamers across and cost considerable money. The task was tedious and slow and a great deal of patience was required. Some idea of the time consumed in making the portage may be gleaned from this eye witness account in connection with one of the ships:

"The Northern Lake Company have their vessel one third up the portage toward Lake Superior, and, at the rate they now go will be there in ten days. They have their vessel on ways with rollers under, and one horse, by means of a capstan takes her along five or six lengths a day." 9

9. Cited op.cit., 409.

But with the ore business thriving the cost of hauling boats across the portage was not prohibitive. A regular route now developed. Ore was plentiful, so was labor, and it cost little ^{to dig} the metal from the ground. It was estimated that a half dollar would cover the cost of digging a ton of ore. A railroad was built by the companies from the mines to Indian Town, already bearing the more euphonious name of Marquette. But it cost three dollars to haul the ton of ore, which had been mined for fifty cents, from the works to the port.

At this point it was loaded into one of the vessels which had been dragged over the portage, was carried to the portage, there again unloaded only to be carried over the portage and be reloaded on the Lake Huron side upon a ship which would carry it to its final destination.

Sheldon McKnight had cornered for himself the job of hauling all materials over the portage at the Sault. For the task he used an old gray mare and a French cart, equipment which served every purpose until the loads became too heavy. It is said that in 1845 this famous horse had the honor of hauling every pound of freight that passed to and from Lake Superior. But when ore began coming through in thousands of tons the old horse and French cart would serve the purpose no longer. Some better means of transportation would have to be provided. So Sheldon McKnight found himself a partner in the person of J.T. Whiting and these two enterprising businessmen built a strap railway, one mile in length, across the portage. But the old faithful horse had not yet ceased to function for it was horse power that pulled the loaded cars across. To McKnight and his partner goes the honor of constructing the first railroad in the Upper Peninsula. 10

10. Ralph D. Williams, The Honorable Peter White, 84.

Increased traffic brought a growing demand for a ship canal around the Falls of St. Mary's. Eber Brock Ward, despite the fact that he monopolized most of the ore business originating in the Lake Superior district, was, with Peter White, one of the prime movers in this matter and because these two pioneers

saw the importance of a canal connecting the largest of the five inland lakes with the others, they appealed to the National Government for aid. As early as 1837, the State of Michigan, which had not wanted the Upper Peninsula, attempted to build a canal at its own expense. Nothing was then known of the ore deposits but Lake Superior, it was believed, would support a thriving fishing industry and the canal was attempted for the purpose of bringing new settlers into the country. The project ran into difficulties when the Government refused to grant permission to run the canal through the military reservation. All contracts for the work had been let and Aaron Weeks of Mount Clemens, who held a one-third right in the contract, represented the Wards in the enterprise. For his one-third share he had paid the old Elizabeth Ward, a vessel of eighty tons, which was to be used for hauling men and materials to the proposed canal zone. 11

11. Otto Fowle, op.cit., 375.

The men to do the job were recruited in Detroit, needed materials were purchased and the Elizabeth Ward, as originally contemplated, made the trip to the Sault. As soon as work commenced, government engineers objected. There was to be no encroachment on the military zone. A veritable canal war started. The workers were driven from the site and the first real attempt to build a canal around the Falls came to naught. 12

12. Ibid, 378

Opposition never discourag d Eber Brock Ward. If the State

was not to be permitted to build the waterway, an appeal would have to be taken to the National Government. The 1837 venture had been undertaken before the discovery of the valuable metals, had been advocated largely because the Wards felt that the Lake Superior shores would lure immigrants, even as had the shores of the other five lakes, as soon as those shores were made accessible. By 1845 rumors of rich ore deposits were being circulated so Congress was petitioned to build the canal because "it would stimulate the fisheries of Lake Superior" which were estimated at a value of a million dollars annually. And then it was added as an after-thought that "in the country bordering the southern shore of Lake Superior, copper and other minerals are believed to exist in abundance". 13

13. Cited by Ralph D. Williams, op.cit., 118.

At that early date Congress was not ready to vote a million dollars for a wilderness of which few of the congressmen had heard. Henry Clay, despite his advocacy of internal improvements, opposed the project for

"...it contemplated a work beyond the remotest settlement in the United States, if not in the moon." 14

14. Ibid.

The good people of Michigan were not to be denied their canal without further effort. Repeated requests from the Sault region, agitation by ship masters, and finally a petition from the Michigan legislature, caused President Fillmore, in 1853, to approve a grant of 750,000 acres of land to the State on condition

that work on the canal would be started within a period of three years. A proviso was attached stating that the canal would have to be one hundred feet wide, two hundred and fifty feet long, and twelve feet deep. Because the state constitution did not permit the State to proceed with the work of construction, the St. Mary's Falls Ship Canal Company, with Samuel Ward and John Owen, Eber Ward's nephew as principal stock holders, was organized. 15

15. Stanley Newton, op.cit., 148.

A serious dispute regarding the size of the canal now arose. Congress had decreed a canal two hundred ~~and~~ fifty feet in length but the Wards, judging by the size of their own boats, thought it extravagant to build a canal of such size. On the other hand, Charles T. Harvey, who had taken a prominent part in the controversy over the Welland Canal, thought three hundred ~~and~~ fifty feet would be more suitable. No lake vessel large enough to require a canal of that size would ever be built, it was argued and, for once, Eber Brock Ward guessed wrong. But his friend Peter White championed the larger canal and ultimately the legislature agreed. A three hundred and fifty foot lock, the largest in the World at the time, was ordered. How wrong Eber Ward and his uncle had been in their earlier predictions is evidenced by the fact that even the large lock which was ultimately built proved too small for even the larger Ward boats within a few years.

The good people of the Sault were naturally opposed to the building of the locks. Through shipping meant the end of

their profitable business. Especially opposed was Mr. McKnight who foresaw the end of his monopoly of the portage route. All others saw in the canal a move which would rapidly populate the Lake Superior shoreline because of the accessibility which the new waterway would provide.

Eber Brock Ward and his uncle Samuel were contented to see the canal constructed. They were stock holders in the building company and they owned most of the ships which would use the locks. But they were forestalling the possibility of others entering the field in search of some of this new business. Even after the contracts for the canal had been let Captain Ward was portaging additional steamers around St. Mary's Falls. In 1854, the year before the canal was opened, and immediately following the death of his uncle, Ward took three large steamers, the Sam Ward, Napoleon, and Peninsula across the old portage. He advertised up and down the land the fact that passengers and freight from any point on the lower lakes would be carried by the Ward line steamers to settlements on Lake Superior by through traffic. Such business as the new mines were bringing to Lake Superior, Ward meant to have for his own boats. The Ward Steamship Lines and Lake Superior were to be made synonymous in the public mind. 16

16. Marine City Independent, Memorial Edition, August 11, 1925.

The St. Mary's Falls Ship Canal Company, which received the contract for the construction of the locks, was chartered under the laws of New York, a Michigan statute of that day prohibiting any state company from bidding on the project. The

astute residents of Michigan had enacted this statute because they had noted that during the canal era public officials, in some instances, had mulct their states in the construction of internal improvements. There was to be no repetition of this condition in Michigan. However, there was nothing to prevent Michigan men from holding stock in the New York company and it is not strange that the heaviest ship owners of the day, the Wards, should be found liberally represented in the canal company.

Building the canal proved a Herculean task. The project was, as Clay had indicated, "beyond the remotest settlement in the United States". Men to do the work would have to be brought in from great distances. Tools and machinery required on the job would have to be ordered and manufactured elsewhere. It required six weeks for a letter to reach the company offices in New York and return. Drilling in the hard stone had to be done by hand. Here indeed was no simple task but it was one from which the pioneers did not shrink. To Charles T. Harvey, who knew something about canals and who was at the time a store keeper in the North, went the job of supervising the work. Two thousand recent immigrants were brought to the canal zone. The winters were hard, the temperature at times dropping to thirty-five degrees below zero. An epidemic of cholera in 1854 took a toll of ten percent of the workers. A strike delayed the work. But despite all difficulties, under the direct and energetic leadership of Harvey, the canal was completed within twenty-two months. Gitchee Gumee had been joined to the

lower lakes. The pioneer had scored again. 17

17. A fine description of the construction of the canal is found in Ralph D. Williams, op.cit., 129 et seq.

The construction of the canal had proved a lucrative business for Eber Brock Ward. The Ward ships conveyed the many needed workers to the Sault. Ward boats carried machinery and materials to the job. Ward warehouses provided much of the food and clothing purchased in the rigorous winter clime by the workers. Captain Ward was making a handsome profit and what was of even greater importance, he was learning the methods of Big Business which he was one day to apply to his other enterprises.

On April 19, 1855, Storekeeper Harvey, who by his persistence had held the men together and seen the task through, opened the sluice gates to the outer cofferdam on Lake Superior. The Ward steamer Illinois, carrying one hundred and thirty two tons of iron ore, passed into the locks and was the first vessel to be lowered into Lake Huron by way of the canal. The Baltimore, another Ward boat, was the first to pass from Lake Huron to Lake Superior. 18

18. Ibid.

The Sault Ste. Marie canal was even at that time the largest in the world. It was constructed at a cost of \$999,802.46, or nearly twice the amount stated in the original estimate. Eber Brock Ward had worried that the great cost of building the canal would delay the work. It was for this reason that he had argued in favor of a smaller lock. Yet what

this astute businessman considered an oversize canal in 1853 proved, within a very short time, to be too small for his own line of boats. His great ore boats could not be taken through the narrow and short lock, and Eber Ward is found, in 1870, urging the enlarging of the canal. Because traffic now warranted it, the Government hesitated no longer. The "remotest settlement in the United States" had become the greatest waterway in the world. The depth of the canal was increased to sixteen feet, and improvements costing more than twice the original expenditure, were undertaken. Even then, as the size of boats and the traffic increased, the canal was found too small; and on three later occasions enlargements and additions were made. 19

19. Edward Channing, The Story of the Great Lakes, 362 et. seq.

So it came to pass that the desire of the pioneer to populate a new country, the great fishing industry of Lake Superior, and the discovery of copper and iron in the Upper Peninsula, gave to the world its largest canal. In 1852 a Ward boat had carried five barrels of ore down the lakes and its Captain had thought that important. The Illinois, when it made the first trip through the locks, carried one hundred and thirty-two tons and that had been thought important. Yet during the World War sixty million tons a year were carried through and the great "red bellies" could transport, on one trip, as much as twelve thousand tons of ore, far more than the complete tonnage of the Ward ships of an earlier day. 20

20. Donald Wilhelm, The Story of Steel, 29; Harold Faulkner, American Economic History, 611.

Chapter VII

A CHANGING ECONOMY

Samuel Ward had come to the Middle West because he believed in its future. Eber Brock Ward, who grew up on the banks of the St. Clair, came to hold the same belief. When, as a cabin boy, he sailed on a ship that bore the name of that river from Green Bay in Wisconsin to New York City by way of the Erie Canal, the first through boat to make that passage, he saw thriving little hamlets nestled at great intervals along the shore. A few hundred people here, a few more a hundred miles farther on, with vast stretches of wilderness between - such was the settlement of the Great Lakes States. With the opening of the canal, Samuel Ward's boats began to carry hundreds of new residents to even the remotest points. Farming communities made their appearance throughout the Middle West. Michigan and Wisconsin became the bread basket of the Nation. Milwaukee, Chicago and Detroit grew into important wheat centers from which the Ward boats carried huge cargoes of the grain to eastern ports.

As was always the case in a new country, life was hard for the pioneer of the Middle West. The farmer, after the tedious task of clearing his land, received little for his crop. He had no money, raised what he needed, could buy only sparingly from the East. The Ward boats, heavily laden on their trips down the lakes, returned with almost empty holds. Of manufacturing

there was little in the great Middle West. Home manufacture abounded, the settlers making only what they and their neighbors required in their daily life. And because there was no money, barter prevailed.

The opening of the Erie Canal brought on major changes in the country. Primary manufacture developed along the shore. Wheat was milled into flour because it cost less to ship and because it brought a greater return on the Eastern market. Lumber mills made their appearance for the same reasons. But beyond that point manufacture did not go. No industrial towns developed. The settler continued to depend upon the industries of the upper Hudson and Mohawk valleys. 1

1. Victor S. Clark, History of Manufacture in the United States, I, 347.

The opening of the Sault Ste. Marie canal, and the demand for raw materials in the East, gave to the Middle West the function of assembling the grain and the lumber and the pre of the region. But industry was left to the country to the east.

Eber Brock Ward, as master of his own ships, sailed to every harbor on the Great Lakes, knew intimately each of the many small communities. He recognized that the life of the pioneer would be difficult as long as farming remained the only occupation. But, reasoned the young captain, if industry could be established in the communities along the shore, if a market for farm products could be developed simultaneously with a market for manufactured goods, then the Middle West would attain a degree of self-sufficiency. There would be greater prosperity for both farmers and workers. A higher standard of living would

result. Eber Ward noted that the farmers were jealous of the Eastern manufacturers, looked with disapproval upon the workers who were earning a meagre, though definite, daily wage. The farmer was never certain of what his crop, if any, would bring on the market. The worker was assured of his daily wage. So the Canadian born westerner, who was already known as the first millionaire of the Middle West, went up and down the coast line preaching his doctrine of self-sufficiency. To a group of farmers in Cleveland he said:

"It is folly for one class to try and stand alone, or to look upon the other with jealousy. We depend upon each other. Farms or factories only thrive best when they are near each other, so that they can help each other easier. They are natural allies. Diversified industry is the 'Manifest Destiny' of the Northwest, and thus the farmer will partake of the common prosperity." 2

2. MS. Burton Collection.

Such was the philosophy of Eber Brock Ward, such his interpretation of Manifest Destiny. Out there in the wilderness of the Middle West, he foresaw huge manufacturing plants, industries that would produce commodities that the farmers would be able to purchase because they, in turn, would have found a market for their products among the workers in the factories. But despite his efforts, Eber Ward had little success in bringing others to see his vision. Even the Civil War with the resultant boom in industry, had little effect upon the Great Lakes States. They continued to farm, left manufacture to the East.

Speaking before the Iron and Steel Association in August of 1865, Eber Ward grasped the opportunity to bring his vision

for the West before the many industrialists assembled at the convention. The shipper had already become the manufacturer and he urged others to follow his lead. He pointed out that

"The great Northwest has proclaimed herself a power in this Nation, and I believe that many of the owners of thousands of factories in the East will, in time, find it to their interests to move part of their capital to points west even of the Lakes and the Mississippi, where they will find cheaper land and a more ready market than they now have." 3

3. MS. Burton Collection.

But try as he would, Eber Brock Ward could bring no Eastern business to his favored Middle West. In his vision he was far ahead of his time. He could not hope to be listened to despite the fact that he was becoming more and more affluent due to the fact that he was following his own preachings.

After the death of his Uncle Samuel, Eber Brock Ward was left much to his own dictates. No longer had he a good and trusted friend with whom he could discuss every venture. The year after he came into full control of the shipping business a double tragedy befell the still young Captain. In March of 1855, Elizabeth Lamberson Ward, wife of Samuel, who had been the only mother that Eber had ever known, died; and in June of the same year, his father, more recently retired to what was now Marine City, also passed away. Only his sister Emily, who had grown into a fine, strong-minded woman, remained. Because Eber Ward was making his home in Marine City, he asked his sister to return to that city, a request with which she gladly complied. A relationship of mutual cooperation and helpfulness developed which was to effect the lives not only of brother and

sister but of the entire community as well.

After the death of her mother, Emily Ward was forced, at the age of eleven, to assume full control of all household duties. She reared her sisters, Sallie and Abbie, and because she came to love children, she was always seeking to aid all youngsters who might find themselves in a situation similar to the one she had found herself in after burying her mother in the wilderness of Pennsylvania. When Sally and Abbie married, Emily, released from her duties, kept house for her father in the lighthouse at Bois Blanc. But now all that was over and the ever-active Emily yearned for a school at which she could train unfortunate youngsters. When both of her sisters died, leaving large families, it was but natural that Emily, soon to become known as "Aunt Emily" by all, should assume the duties of raising her sisters' children. 4

4. Frank McElroy, History of Marine City, MS. Burton Collection.

Eber Brock Ward, happy to have his one surviving sister near him at Marine City, was happy too that she desired to care for the orphaned children. He brought them all to Marine City and declared to Emily:

"Draw upon me for anything you need for their maintenance because you got the hardest part of the bargain when you offered to raise twelve of them." 5

5. Emily Ward Testimony, Owen vs. Potter, III, 786.

Twelve orphaned children were not enough to keep "Aunt Emily" occupied. Marine City boasted no high school prior to

the Civil War. Emily Ward saw the need of such a school and talked the idea over with her brother. He thought the idea good and for him, to make up his mind was to act. An imposing school house was built in Marine City. The finest equipment that money could buy was brought from the East. Charts, globes and other teaching aids, common enough today but seldom seen in school houses of the Forties, were provided. A registered teacher was hired and the "Marine City Academy" was ready to prepare the young people of the community in literature and in the sciences, was ready to prepare them for college. 6

- 6. A description of the school may be found in Mrs. George N. Jones, "Events in the Life of a Unique Woman" in Michigan Pioneer Collection, XXXVIII, 581-589.

Emily Ward did not think that the school should be entirely free to all children although she agreed with her brother that those who were worthy and who could not pay, were to be admitted. All others were to pay an annual tuition fee of three dollars with an additional twenty-five cent charge if the student undertook the study of languages. The school proved popular. It filled a need in the St. Clair Flats and soon an addition was built. Always remembering the plight of her own family, Aunt Emily raised at least fourteen children from childhood to maturity and aided scores of others, all needy, who came to her attention. And Eber Brock Ward, likewise remembering his youth, was happy to provide the funds which his sister's enterprise required, was happy, too, that he could give these young people profitable employment in his enterprises after they had completed their schooling.

The story is told of a day when two small, ragged and dirty boys came to Aunt Emily and said, "Aunt Emily, you take in all good children, I wish you would take me." Emily Ward took them in, gave them schooling and one of the brothers later became manager of the Ward Milwaukee rolling mill, while the other served in Congress for many years as a representative from the Fourth Wisconsin District. Postmaster General Dickinson was one of "Aunt Emily's boys", as were scores of others who were, at a later period, to leave their mark upon the Middle West. All were given a thorough education; those who showed aptitude were sent to college, none were out adrift after graduation. Emily Ward and her brother arranged to place each in the type of work for which he had prepared and there were instances where graduates who had distinguished themselves were given homes upon graduation or sums of money ranging as high as five thousand dollars. 7

7. Quimby Papers.

Emily Ward had found her mission among unfortunate children and her devotion to that mission was earnest and unvarying. She supervised every detail of her school, leaving only the actual instruction to the registered teacher whose salary was being paid by Eber Ward. She was physician, nurse and counselor to the children, and she always appeared to have ample time to take on new duties. It was fittingly remarked by one of the good citizens of Marine City that Aunt Emily "had charge of the school master, the school house and the pupils. She was a Board of Education of one, with original and appellate jurisdiction".

8. Mrs. George N. Jones, op.cit., XXXVIII, 587.



Emily Ward

The wilderness had left its mark upon Emily Ward. The pioneer had little time for leisure, had time only to grub and toil for an existence. Self-discipline was essential to existence. So it was not strange that the Marine City school mistress should demand complete obedience, good conduct and superior effort from her charges. Nor was it strange that she considered play a waste of time. Play had never been a part of her life. As foster mother to the family at the age of nine, work had filled her every waking moment and work, she felt, had done her much good. Others should have similar experiences. It would make of them better American citizens. If one of her charges fritted away time, if "idle play" became part of the day's activity, then Emily Ward would take the offender to the onion bed or to the strawberry patch, or perhaps even to the wood pile, where a laconic sermon on the evils of idleness would follow, and the sermon would be duly impressed by the assignment of a not too simple task. 9

9. "Aunt Emily Ward", Obituary notice, Michigan Pioneer Collection, XXI, 367-370.

It is a tribute to her methods that all of her young ladies and young men, especially those whom she took in at an early age and raised within her own household, ultimately became persons of note in the nation.

For twenty years Emily Ward conducted her Marine City Academy and Eber Ward cheerfully paid the bills. But managing her household and running her school did not prove sufficient to keep this energetic woman busy. She took a keen interest in all of her brother's business affairs, and gradually, Eber

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Brock Ward came to rely more and more upon her judgment. And well that might be for on many occasions she saved her younger brother from making serious mistakes in his business undertakings. During the early Marine City days, Eber Ward, who always believed in diversified interests, determined to make land speculation a side line to his shipping business. Over the objections of his sister, he purchased a large tract of land which he felt would appreciate in value. He guessed wrong and in later life the Captain would often relate that

"It was against Aunt Emily's advice that I went into that land speculation. I wish I had not put my money into it. I lost \$20,000 on the deal." 10

10. Quimby Papers

So keen a business woman did Emily Ward prove herself that she soon became an integral part of the Ward shipping enterprises. On the main street of Marine City stood a large building bearing the sign, "Ward's General Store". Here was the warehouse in which much of the merchandise carried by the Ward boats was prepared and stored, and here, too, were the workshops where the many fittings and furnishings for the Ward boats were made. In a large office on the second floor of this building, Emily Ward and a group of helpers held full sway. The interiors of the Ward line vessels were planned, and, in the early days, curtains and other furnishings were made by Aunt Emily and her helpers. Marine City grew to a population of twenty-five hundred, and it is said that most of the employables in the town were working for Eber Brock Ward and his sister. Aunt Emily took her profits in stock of the Ward boats,

and within a short time became wealthy in her own right. 11

11. Mrs. George N. Jones, op.cit., 588.

It appeared that Emily Ward knew as much about the wide ramifications of her brother's business as did the Captain himself. The brother discussed all of his business ventures with his sister and she kept informed, too, it was said, "because different men and clerks employed by Ward took pains to let her know". 12

12. Mary Brindle Testimony, Owen, vs. Potter, 1536.

Be that as it may, Captain Ward always attributed much of his success to the foresight and prudence of his sister and it appears that Aunt Emily was entirely justified when she wrote after the Captain's death, " I feel that I am the only living person who assisted in the accumulation of the estate". 13

13. Letter from Emily Ward to Orrin W.Potter, January 5,1877, Quimby papers.

Emily Ward never married,not, as she often said with a coy toss of her head, because she "didn't have any chances", but because she was "too busy to think of matrimony". She was large and manly in appearance, with sharp features and reddish hair. She dominated every situation in which she found herself, and was as free in a council of men discussing important business matters as she was in her own kitchen, which, incidentally she enjoyed as much. She was the product of pioneer days, the woman who had to meet life in the raw and who met it effectively.

During his twenty years in Marine City, Eber Brock Ward was steadily expanding his business interests and, as a result, was spending less and less time in the port which his uncle had founded. He had moved his family to a new, beautiful home on Fort Street in Detroit, and he longed to have his sister near him for he felt the need of her counsel in his many activities. He felt, too, that Marine City had now grown to the point where it could and should support its own high school. In 1865 Emily Ward moved to Detroit, where her brother had built a fine home for her directly across the street from his own mansion. The Marine City Academy, -grounds, buildings, equipment, and teachers, was transferred to the city authorities and continued to be operated by them. Today a fine new high school stands on the same spot where Aunt Emily's school had first been erected, and that first school is still in use as a store and warehouse at the corner of Main and St. Clair Streets. 14

14. As related to the author by Mrs. Quimby, Marine City.

So Emily Ward moved from the small town atmosphere of Marine City to the rapidly growing metropolitan district of Detroit, there to carry on her varied activities, most of them in the interests of and on behalf of her active brother. After a full life of service, this marvelous woman, who is still fondly remembered by residents of Marine City and by the many whom she helped through school and in life, died in Detroit in August of 1891 at the age of eighty-three. She lived to see the empire, which her brother had founded and in which she had been so intimately involved, grow into gigantic corporations.

During those Marine City days, when Eber Brock Ward had come to be recognized as the greatest shipping magnate of the inland lakes, he pondered the future of his business. He was the owner of the largest fleet of vessels then in existence; he possessed the largest boats; he was enjoying a monopoly of both the freight and passenger business on the Great Lakes. He was several times a millionaire. And still he pondered. Money had never been his aim. Power he sought, utilized to the fullest extent, and enjoyed. As he pondered on the future, he saw that conditions in the Middle West were changing. More settlers had come into the country and the "Iron Horse", of which he had heard so much in his younger days, was now cutting across his territory. The railroads were coming into Ohio, into Indiana, into Michigan. They were taking traffic away from the Ward boats. True, he had met the challenge when he made the Michigan Central virtually dependent upon his ships by controlling the business at both terminals of the line, but now the roads were building around the southern end of Lake Michigan, were extending to Chicago and even to Milwaukee, and ere long they would be independent of the Ward line. It appeared to the shipping king that the days of the lake carriers were numbered. The speedier railroads, he felt, would soon monopolize the freight which his boats had been carrying.

In this period prior to the Civil War, Eber Brock Ward could easily have disposed of his many vessels and could have retired on the profits which he had made. But Captain Ward was not the type of man who would retire at the age of fifty. He was a builder, and he would continue to build as long as his

health permitted. It was in 1856 that his sister urged him to withdraw from business but, while her influence upon her brother was great, in this matter she counted not at all. "No", said Eber Ward, "I want to carry on as long as I can and when I can't any more, well, then I am ready to die." 15

15. As told to the author by Mrs. Quimby, Marine City.

If the railroads were to drive his ships from the lakes then the astute captain would simply be forced to engage in some other form of enterprise. The Middle West, he had always maintained, was the place for industry. Manufacture would develop the entire section, would destroy its dependence upon agriculture, would bring about a more balanced economy. Only very few industrialists had heeded him. Industry was still located on the eastern seaboard. Well enough. Eber Ward would build industries in the Middle West, would prove to those who would not hear that his advice had been sound.

During his long years on the Great Lakes, this shipping tycoon had surrounded himself with a large group of trustworthy men for it was characteristic of Eber Brock Ward that he knew men, knew where he would find loyalty, knew that strong men would make him even stronger. So there were those strong captains of his largest steamers, Captains Clement, Goodrich and ~~Gustav~~ Pabst; there was J.J. Hagerman, purser for the line; and there were, perhaps above all, William H. Bronson and Tubal C. Owen, who had been his confidential secretaries for many years. Strong men all, men who knew the Middle West, men whose loyalty had made Eber Ward the foremost individual

in this new country.

One day Eber Brock Ward called them all together. He told them that economic conditions were changing, that the shipping business was then at its high tide and that its future was uncertain, that it would be necessary to branch out into other business enterprises. The men were shocked. The boats were making money. Why the fear? The railroads had made some inroads, yes, but additional business, picked up in other quarters, had more than offset the loss. These men who had the greatest confidence in Captain Ward, who had always followed his wishes and who had found that it paid them well, could not fathom his reasoning. Especially contradictory was Captain Goodrich. He knew nothing of industry. He was first of all a sailor and ships, said he, would sail the Great Lakes through all the ages.

To contradict Eber Brock Ward was to court a storm. With his hands clasped tightly behind his back, with a steely glint in his cold blue eyes, the master of the lakes seemed to look right through his captain. "If that is your belief," said his cold, calculating voice, "why don't you buy the line." 16

16. Quimby Papers.

Goodrich did. Right there and then many of the Ward passenger steamers became the Goodrich Steamship Line, a line of fine vessels that sailed and prospered on the Great Lakes for many years to come. The others in the group stood by Eber Ward. They would sail the remainder of the boats as long as he desired, would go into other enterprises when he thought the time ripe.

Because he felt that the shipping business had reached

its peak and because he desired to keep his millions active, Eber Brock Ward was forced to seek other fields of endeavor. He already had substantial holdings in several of the mines in the Upper Peninsula. But that alone did not suit him. He wanted manufacturing enterprises that would create new markets and that would bring prosperity and plenty to his favored Middle West. Often did he dream this dream. Industry that would employ thousands, that would be his ideal. He wrote as much on a scrap of paper that has been preserved. The railroads were taking his freight. The boats were too slow, were forced to take the longest route between two distant points. Vessels employed few people, were no reason for new settlers coming into the country. Industry was the solution. So wrote Eber Ward on July 8, 1848, at a time when his shipping line was making him a millionaire, at a time when others had no fear of the ever advancing railroads. 17

17. Ward MS., Burton Collection.

Since he already owned an interest in mines it was natural that he should think first of industry which was connected with this raw material. Eber Brock Ward decided to go into the iron business. He would build huge iron works on the shores of his beloved lakes. And since the railroads were taking the business from his lake steamers, he would make products that the railroads would have to buy. He would erect factories for the manufacture of iron rails and he would install machinery on which iron rails already in use could be rerolled. Better yet, he would build railroads of his

own and he would build them in the Middle West to carry the products from the farms to the industrial centers along the lakes. It was characteristic of this industrial genius that he held no ill will against the railroads. Their advent was merely in step with the march of time. Eber Brock Ward was a product of the Middle West. He recognized changing conditions earlier than most men. He accepted progress, kept step with progress. He had shaped his new course. He embarked upon that course with little delay.

Chapter VIII
AN IRON MASTER EMERGES

Towering furnaces which could convert the crude iron ore from the mines in the Upper Peninsula into refined iron had not penetrated the Middle West by the time Eber Brock Ward had decided to dispose of his shipping interests in order to devote his attention to manufacture. Furnaces along the Atlantic seaboard there had been since colonial days, furnaces which used the crude ores to be found in adjoining neighborhoods and which refined that ore with charcoal. In a later day those furnaces began to push westward, and by 1840 some iron was being made in Pennsylvania and in eastern Ohio. Local ore was still being used; and the Ward boats were bringing only small cargoes of ore through the St. Mary's Falls Canal, cargoes that went to points beyond Detroit, beyond Toledo, and beyond Cleveland. No ore was being unloaded at furnaces in the Middle West. There were no furnaces in the Middle West. 1

1. Victor S. Clark, op.cit., I, 500 et seq.

A first class furnace, during this period, could be built for about fifty thousand dollars, would employ a hundred men, and would produce a thousand tons of high grade iron within a year. There were no corporations in the iron business in that

day. Furnaces were owned by individuals, even as the vessels on the Great Lakes were owned by individuals. Iron masters erected their furnaces and hoped that depreciating currency, defaulting banks, repeated panics, would leave them with some of their earnings intact. Very seldom did iron masters become men of wealth. In the panics of 1837 and 1857 scores of furnaces were blown out, their owners seeking other climes in which to rehabilitate their fortunes. 2

2. Herbert N. Casson, The Romance of Steel, 3.

It was in this uncertain field that Eber Brock Ward decided to plunge. He knew nothing of iron, but he had known nothing of ships. Yet he had learned all there was to know about sailing craft, had finally mastered the mysteries of the largest steamers. He had learned well and had become the shipping king of the Great Lakes. Now, with three million dollars realized in the shipping business, he was ready to enter the field of iron. Here, too, he would learn. He would take his old friends and associates into the new business and he would rely upon his usual unfailing ability to secure faithful men who knew iron, as his assistants. It had already been established that Eber Brock Ward knew how to select his associates. Men whom he appointed to positions of responsibility always responded faithfully, always remained loyal, always continued as friends of the great business genius even after all business ties had been severed. So Captain Ward, knowing nothing of iron, feared not. He would hire those who knew what there was to know about iron.

The inadequacy of American iron production appalled Ward. The railroads, steadily building their iron web across the country, required huge quantities of iron rails but they were supplying their needs by importations from English sources while great mine fields in northern Michigan and Minnesota were permitted to lie undeveloped. Such an inconsistency the practical mind of Eber Brock Ward could not fathom. He felt it to be his mission to bring the ore fields of the North into their own. The railroads must cease purchasing their iron rails from England. American ore, smelted in American furnaces and rolled into rails in American mills should be utilized by American railroads. To a group of his associates, whom he was trying to interest in iron refinery and iron manufacture, Captain Ward said in 1852:

"You have iron ore of the finest quality, and send to England to buy rails so poor that no other market in the world will take them. You lay them down over the very mines where lies your own iron, waiting to be wrought by the hands of decently paid and hopeful American workmen." 3

3. Ward MS., Burton Collection.

Such was the Captain's logic, such his reasoning. And because such was his belief he started to do something about it at a time when others stood by and did little more than listen. This new industrialist was determined that American made rails should drive the English product from the market. Men who heard him merely laughed. He might be a fine sailor, they told each other, but he knew nothing of iron. The English had controlled the iron market through the ages. They would

continue to do so despite the master of the Great Lakes. Yet many of these same men lived to see the Ward prophecy come true.

Twelve miles south of Detroit, in a heavily wooded area, the little village of Wyandotte had been a stopping place for Ward boats for many years. There was little activity in Wyandotte in 1850. A few business houses dealt in general merchandise and supplied the scant needs of the farmers in the surrounding country. It was in the summer of 1853 that Eber Brock Ward chanced to meet Philip Thurber with whom he had done some business in the little village. Thurber had just returned from the iron country in the North, had, in fact, brought several specimen from the mines. Enthusiastically he displayed these before the Captain who already knew what there was to know about the iron fields along the shores of Lake Superior. Thurber thought Wyandotte would be a good place for a furnace. Eber Ward agreed with him. The little village was on a direct line for water-borne ore from the north, there was ample timber suitable for charcoal purposes, the railroads, then building through Ohio, Indiana, Michigan and Illinois would be potential customers for the iron which might be refined at Wyandotte. 4

4. VanAlstyne Papers.

It was the last fact which intrigued Eber Ward most. Merely making iron, with no market, might spell disaster. The railroads would have to be weaned from their practice of buying English iron. They would have to be taught to use the American product. Such use would mean greater prosperity for the rail-

roads as well as for the entire country. That idea the old lake captain now proceeded to sell to the railroad men. He was already a director of the Michigan Central, knew the key men of that organization well from the days when his steamers were functioning as both the East and the West terminals of that road. He found U. Tracy Howe, treasurer of the line, receptive to his plan, found, likewise, that R. N. Rice, the superintendent, was impressed. With these two and with Silas B. Holmes, State Treasurer and wealthy dry goods merchant, and William N. Carpenter, another wealthy acquaintance, Eber Ward organized the Eureka Iron Works on October 15, 1853. 5

5. Ibid

The shipping master of the Great Lakes was launched on the course which was to make him the iron master of the Middle West.

Where to place the proposed furnace was the next question. There were those who favored Wyandotte, while others argued that the furnace should be located closer to the ore fields. They thought Marquette a suitable location. Darius Webb, who knew about iron furnaces and upon whom Ward now depended for advice and counsel, was opposed to the Marquette idea. Two furnaces were already located in that region and both were finding it difficult to secure the needed worker and the required wood. Both were losing money. The waterways froze at an early date and the furnaces were practically isolated during the long winter months. Eber Ward knew all this and, since he was the controlling genius of the enterprise, Wyandotte became the site for the Eureka furnace.

A parcel of land, consisting of twenty-two hundred acres with a river frontage of two miles and extending westward for a half mile, was purchased for the sum of \$44,000. Eighteen hundred acres were densely wooded, ample, it was believed, to provide charcoal for the operation of the furnace for many days to come. The land not used for the furnace yard was laid out as a model town, with streets a hundred feet wide and with beautiful, expansive lots where workingmen might build their homes. Two or three hundred dollars would suffice for the purchase of a lot, and a plan was arranged whereby the workers could build their homes by paying in cash twenty percent of the over-all cost, with the remainder to be paid off in four annual installments. 6

6. Detroit Daily Advertiser, October 8, 1856.

Today Wyandotte is a beautiful city of homes, a testimonial to the farsightedness of Eber Brock Ward, who assumes his place as one of the first city planners.

Captain Ward had been reared in an atmosphere of temperance despite the fact that his whole life had been spent in a section of the country where drinking was quite regularly indulged in. His uncle had been a teetotaler, and it was from him that he had learned abstinence. Even life on the lakes, where sailors drank with abandon, had not been able to swerve the captain from his course. He was never known to drink hard liquor, but he was not averse to having his sailors drink. If drinking would make them better sailors, better workmen in the hot hold of the ship, it was entirely satisfactory to the captain.

When, however, it came to workers at the new furnace, Ward opposed all drinking. He had spent much time in the saloons of the water front, and he knew that inebriated men were of little use at work on the following day. Lost man-hours due to intoxicants meant less pay for the workers, less food for their families, less production for the Ward furnace.

Under these circumstances it was natural that the captain should insert a clause in each deed prohibiting for all time the establishment of any place in which liquor was to be sold. There were to be no saloons in Wyandotte just as at a later period there were to be none in North Chicago, in Bay View, and in Crystal City, towns which Ward was to build in connection with his expanding industries. 7

7. VanAlstyne Papers; Also deeds on Bay View and Crystal City property examined by the author.

The Ward prohibition proviso proved ineffective. At Bay View the thirsty could go a short distance to Milwaukee and there slake their thirst. At Crystal City, on a Saturday night, there was a hegira to Festus, only a short distance to the west, where the saloons flourished. Wyandotte soon had its Sebastopol, to which place "every evening the long procession of thirsty souls would be seen going to have their lives saved". 8

8. VanAlstyne Papers.

The town having been laid out, work on the construction of the furnace proceeded without delay. The site selected for the furnace was an old Indian burial ground, and VanAlstyne, who was later to become president of the company, relates that:

"when excavations were being made for foundations for the furnaces it was common to exhume the bones of some long departed brave." 9

9. Ibid.

The westward drive of civilization was overrunning the haunts of the Red Man and was paying scant attention to his sacred resting-places.

In 1855 the Eureka Furnace was ready to be blown in with Charles Weigh, an iron maker from the East, in charge. The furnace could not produce more than ten tons of iron per day, but improved business conditions soon brought on additional furnaces and an increase in production to sixty tons a day. As was usual in that day, charcoal provided the fuel required in the refining process. Captain Ward had ample wood for this purpose on his own property, and charcoal kilns were established a half mile from the factory on what is now Fort Street. The demands of an expanding new business soon proved so great that these kilns could not produce sufficient charcoal for the furnaces, and the farmers in the vicinity learned that selling charcoal to the Eureka was a good by-product of their farming. They built their own kilns, hauled their charcoal to the furnace yard, and sold it to the Eureka. 10

10. As told to the author by John Teeling of Wyandotte.

In order to be certain of its ore and because the Medora Mine, owned by Ward, was proving an insufficient producer, the Eureka Iron Company organized the Eureka Mine Company and de-

veloped mining properties in northern Michigan. The Eureka Mine at Marquette proved a failure. Only a few hundred tons of ore were mined and brought to Wyandotte and it was found that this ore was not of a very high grade. Within a year the Eureka diggings were shut down and Captain Ward and his fellow investors dropped thirty thousand dollars on the venture. This was one of the few instances in which this Middle West industrialist had guessed wrong. 11

11. Van Alstyne Papers.

That one failure did not discourage the embryo capitalists of Wyandotte. They were making iron as they had set out to do, but they were not manufacturing that iron into usable products. Eber Brock Ward had planned otherwise. It was he who had envisioned many industrial units in the Middle West, units which would consume the iron which his furnaces were turning out. Instead those lake carriers which he still retained, were carrying the iron to mills in the East. Captain Ward's solution for this problem was to organize the Wyandotte Rolling Mill Company. A merchant mill was purchased from Redmond & Scofield of Utica, New York, a plate-mill, a rail-mill and a sheet-mill were added. When completed the new mill could handle two hundred ~~and~~ fifty tons of iron a day; and an additional furnace was built without delay, in order that the refined iron required by this new industry might be produced in Wyandotte. 12

12. Ibid.

Eber Ward was now well on the way to becoming a leading

iron-maker. He was making his dream of industry in the Middle West come true. More than four hundred men were finding employment in his Wyandotte mill. Wages were adequate and a happy industrial community was developing. Eber Ward was happy in this development. But it was only the beginning of what he had in mind. Similar communities, distributed throughout the Middle West, would have to be built.

The Panic of 1857 failed to effect the Ward industries. His iron was rapidly replacing the English product, and his mill was doing a splendid business in rerolling rails for western companies, rails which, because of the heavy traffic on those roads, wore out within two years. The railroads which had taken business from shipmaster Ward were now bringing added profits to ironmaster Ward.

Chicago, where his boats had been doing business for many years, appeared to Captain Ward to be a suitable place for the expansion of his iron industry. He knew the growing town well, had watched it develop from a little trading post in which there were few whites and many Indians. Already the railroads were converging upon this outpost, and Eber Ward saw Chicago as a hub from which the rails would extend to all parts of the country. If his vision was correct, then Chicago could use a rolling mill in which old rails could be rerolled. So to North Chicago went Captain Ward; and there, on the right bank of the Chicago River, just outside of the town, he built the Chicago Rolling Mill, built it during the Panic of 1857. 13

In this new plant no facilities for rolling new rails were provided. Repairing old and used rails, Ward thought, would bring in sufficient business to keep his new mill working. Later Ward found that the Chicago plant could stand enlargement, and in 1869 the North Chicago Rolling Mill Company was organized with ample facilities to roll any kind of iron. It was this company which ultimately developed into the United States Steel Corporation. 14

14. Ibid.

Orrin W. Potter, related to Ward and for a long period active in the Ward shipping enterprises, was made superintendent of the North Chicago works, a position which he held for many years. Captain Clement, one of Ward's old sea captains and his brother-in-law, was placed in charge of the sales end of the plant and soon proved that a seafaring man could adjust himself to an industry of which he knew little. Orrin W. Potter, as superintendent, was paid seven hundred and fifty dollars a year and was given the free use of a fine dwelling, clear indication of the wage scale which prevailed in the pre-Civil War period. 15

15. Orrin W. Potter testimony, Owen vs. Potter, 1004.

That the new superintendent now considered himself entirely self-supporting is evidenced by the fact that he married as soon as he was appointed to the Chicago position. A merry wedding feast followed the ceremony at Aunt Emily's home, for Orrin Potter was another of "Aunt Emily's boys". And Eber Ward, running silver dollars through the fingers of one hand into the

palm of the other as was his custom, stood by, satisfaction gleaming in his blue eyes for he was building an enterprise which would take care of his capable relatives. Aunt Emily's boys, he opined, would prove entirely adequate to manage the industrial empire which he was building.

With two operating plants under his control, Captain Ward determined to proceed slowly before expanding still farther. He had thoughts of a third plant at Milwaukee and, perhaps, a fourth at Joliet. But first the Wyandotte and Chicago enterprises would have to prove themselves. Never one to hesitate in taking the risks in business, Eber Ward nevertheless did not drive ahead blindly. He had taken the first and the important step. Approaching the age of fifty, he had disposed of most of his shipping interests and had plunged into a field that was new to him. Iron mines, furnaces and rolling mills were to be his interests in the future. But that did not mean that he would plunge without knowing the consequences. He had launched the new venture. It would now take time to prove itself.

And then, just as both the Wyandotte and Chicago plants began to show a profit, the Civil War broke out. The price of iron jumped from \$18.50 per ton to \$73.60 per ton. 16

16. Herbert N. Casson, op.cit., 1

At Wyandotte and at Chicago sweating men were forcing the furnaces and driving the mills to their capacity. Every night the heavens were lighted with the golden glow of the furnaces. The output at both plants was doubled. Iron was coming into its

own and Eber Brock Ward was ready. The war is said to have cost three billion dollars and a large share of that amount went to the iron men - much to Eber Ward. When the war clouds cleared away, the former shipping magnate emerged as the first iron king of the country with several millions to his credit. James M. Swank, for years the secretary of the Iron and Steel Institute and recognized as the foremost American authority on the industry, comments:

"Captain Ward was the most prominent of all the pioneer iron manufacturers, his enterprise in this respect extending to other states than his own." 17

17. James M. Swank, op.cit., 328.

The work which Eber Brock Ward had done in developing shipping on the Great Lakes, his foresight in urging the development of industry in the Middle West, and his own efforts in establishing the iron mills at Wyandotte and Chicago proved of inestimable value to the United States Government during the Civil War. In 1855 when the Sault Ste. Marie Canal first provided through traffic from Lake Superior, only fourteen hundred tons of iron ore passed through the canal. McKnight's old horse had been able to pull that much ore over the strap railway on the peninsula during that year. But by 1860, at the outbreak of the war, more than a hundred thousand tons of ore passed through the channel and, this amount was increased by several thousand tons of refined iron which came from the Marquette furnaces. 18

18. Victor S. Clark, op.cit., I, 348.

Eber Ward had performed a service to his country when he urged the construction of the canal, was performing^r further service in his furnaces and mills, which were converting the iron ore from the north into guns and canⁿon for the Union cause.

It was during this period that Captain Ward realized his error in disposing of much of his shipping fleet. He had been right in assuming that the railroad would supplant the steamboat in carrying certain types of freight and passengers, but he now realized that the cost of shipping bulk commodities, such as ore, by rail was too great. Ships, though slower, could carry heavy products at a lower figure, and there would continue to be need for shipping as Captain Goodrich had prophesied many years before. The very business in which Ward now found himself needed this shipping. Iron ore from the Peninsula could be shipped by rail, but the cost was high. Nor was speed required in the transportation of ore. Great stock piles could be built up during the summer months when navigation remained open. There was little need for speed. The greater freight charges of the railroads were not justified in the case of ore. Ships would do the same job, do it effectively, and do it at a much lower cost per ton.

Eber Ward still retained ownership of some of his old boats, and these were kept busy carrying ore from his mines in the north to his mills at Wyandotte and at Chicago. Increased war business made the supply brought in by these ships inadequate, and Eber Ward found himself in the position of having to charter vessels which belonged to his former rivals. The Marine City ship yards were still functioning, and Captain Ward found it

necessary to re-enter the ship building business. The old type of vessel would not do. Special boats, built to carry large cargoes, boats which could be easily loaded and just as easily unloaded, were now required. The age of the giant "red bellies" was at hand, and Eber Ward was the first to build them.

Even as Marine City, the old Newport, had been dominated by the Wards, so now Wyandotte was rapidly becoming a Ward town. Practically everybody in the little city worked for Ward or was supported by the Ward enterprises. And because the ways at Marine City no longer proved adequate, it was natural that the iron master should construct his new ship-building yard, the yard at which the new "red bellies" were to be brought into being, at Wyandotte.

So it came to pass during this Civil War period that the Old Master of the Great Lakes, who had forsaken the sea to enter industry, was returning to his first love. He was learning, what so many were to learn after him, that modern business must strive for self-sufficiency. He was learning that Big Business could not wait on third parties, that greater efficiency and more profits would result if the ores which came from the Ward mines to the Ward mills were carried in Ward boats. He recognized the fact that increased concentration brought greater profits, for Eber Brook Ward was still the pioneer, feeling his way in industry and plotting the course that others were to follow. There was no chart for Captain Ward. Every step he took was new. When he entered the iron industry, there were no corporations in that field. Furnaces and mills were under the single entrepreneur system, with the owner taking all

the risks and making all the profits if there were any. It was under such principles that Eber Ward had conducted his shipping lines. He had grown prosperous and had increased the number of his vessels, but beyond allowing his captains to purchase shares, there were no others in the business with him. And his captains, the shrewd shipping master felt, would make better captains if they owned a share in the boats which they were sailing. When he entered the mining field, single ownership continued, for in all cases Ward carried the majority of the stock. The building of furnaces and mills did not change the situation. Several friends and former associates were taken into these new enterprises in order to attain more working capital, but those early efforts were not corporations but functioned rather as partnerships. Not until more capital was needed than could be supplied by a few individuals did Ward turn to the corporate type of industrial organization. Big Business was in its infancy, especially in the Middle West. And Eber Brock Ward was in the vanguard.

Chapter IX

THE FORGOTTEN METALLURGIST

It was in 1847. In Eddyville, Kentucky, a tall, lean, iron-maker in his thirties, was sitting disconsolately before his "finery fire". His had been a dream of business success. He had built up a considerable market for his product, and now he saw his entire investment, as well as funds advanced by his trusting father and brother, vanishing. The forge in which he was making his high-grade iron was located in the center of a 14,000 acre wooded tract. Here, one short year before, the young man had considered the wood supply sufficient to serve his need for charcoal for many days to come. Yet there was already no more wood. The only available supply was seven miles away, and to cart it from this distance to his furnace would prove ruinous because of the expense involved.

William J. Kelly had built up a considerable business with his "sugar kettles". Jobbers in Cincinnati and in Pittsburgh were disposing of large quantities, and the kettles had gained an enviable reputation among southern farmers. Now, with success at hand, charcoal for the "finery fire" was running out and the ore on the farm, which could no longer be picked up above ground but which now had to be mined, possessed more impurities and did not refine so readily. Well might William Kelly sit disconsolately before his fire and ponder on the future.



William Kelly

This tall, muscular, mustached man of thirty-six had always been interested in scientific research. He came originally from Pittsburgh, which even then was known as the "Iron City", and it was not strange that his scientific mind should lead him to a study of metallurgy. His knowledge enabled him to make some of the finest iron in the country, but what did his knowledge avail him now that his ore was running to poor qualities and his wood was giving out. The flourishing business which he had built would soon collapse. His friends and relatives, who had confidence in him and who had invested in his factory, would lose their money. He would be a failure.

So thought William Kelly as he sat before his fire on that beautiful June day in 1847. Mechanically his practiced eye noted the conflict of the elements in the molten mass, when a phenomena that had occurred on many previous occasions stirred latent thoughts in his mind. A white, incandescent, almost gaseous spot appeared at one edge of the yellow, fluid iron. A strong blast of air was being forced through the liquid metal at the time, and Kelly noticed that there was no burning charcoal at the spot. Yet the metal was being heated to a white heat. William Kelly knew that carbon and oxygen had an affinity for each other. Then and there he conceived the idea that he might solve his fuel problem and at the same time produce a purer grade of metal if he would allow combustion to do the double duty of creating heat and removing impurities. 1

1. The incidents in the life of William Kelly are taken largely from John N. Boucher, William Kelly, I.

The "pneumatic process" of making refined iron Kelly termed his new idea as with renewed interest he continued with his experiments. Iron men laughed at him. Everybody knew that blowing cold air on molten metal would merely cool the batch. There could be no heat without a fire. Kelly was adjudged insane by most and a doctor was even called in to examine him. But Kelly persisted. He built a half dozen different furnaces, each remedying some defect which he had noted in its predecessor. The required air blast gave him the greatest difficulty for he was forced to depend upon an engine which had already done valiant service on a Mississippi River steamboat. 2

2. Joseph G. Butler, Fifty Years of Iron and Steel, 10.

By 1850 Kelly was certain that he had succeeded, was certain that he could now refine iron without fuel, with nothing more than a strong air blast. He was ready to demonstrate his discovery before the world. Iron men from miles around gathered at Eddyville to laugh and to scoff. Maybe Kelly had stumbled on something but the iron makers doubted it, wanted to be shown. R.L.Cobb, who had sold the land to Kelly and who was present at the demonstration, has left the following eye witness account of the proceedings:

"We saw a middle-sized vessel that had a mouth open on one side and near the top. The whole was shaped something like an egg only bigger than a barrel. We saw molten metal poured into the vessel. Then Kelly turned on a blast of cold air, blowing from a rig he had devised himself. The vessel set up a large noise, a roaring like you don't often hear, and fire belched furiously from its mouth, making many colors. But only for a few minutes. The noise

and fire died down. We then saw a blacksmith take a small part of iron which had cooled and, with a merry ring of his hammer, he contrived and threw at the feet of the amazed spectators a perfect horse shoe. Next the smith took some more of the cooled metal, made it into nails, forthwith and shod the horse of one of the crowd." 3

3. Cited in The Laboratory, Fischer Scientific Co., January 1940.

The Kelly process blew all of the impurities out of the metal and made, not steel but a high grade of malleable iron. The horse^s shoe and the nails, hammered from malleable iron during that afternoon demonstration, marked an achievement that was to revolutionize the economy of the world. Kelly's reaction to his experiments is indicated when he said:

"The first trial of this furnace was very satisfactory. The iron was well refined and decarbonized - at least as well as by the refinery fire. This fact was admitted by all the forgers who examined it. The blowing was usually continued from five to ten minutes whereas the finery fire required over an hour. Here was a great saving of time and fuel, as well as great encouragement to work the process out to perfection." 4

4. Letter from William Kelly to James M. Swank cited in James M. Swank, op.cit., 397.

At the very time that William Kelly was reaching his epoch-making discoveries in Eddyville, Eber Brock Ward, in Marine City, was considering the sale of his shipping line in order that he might devote his time and fortune to the iron industry. Ward had never heard of Kelly. He was oblivious of the fact that what was going on in Eddyville

would one day enable him to give cheap steel to the world. And yet Ward in Marine City and Kelly in Eddyville were in the not very distant future to collaborate in the production of the first commercial steel made in America. For the Kelly achievements and failures were one day to be inherited by Ward.

The fact that two Englishmen were assisting Kelly in his experiments was, at a future time, to cost Eber Ward much money and a great deal of discomfort. These English workers appeared to be about the only two people who really believed in what Kelly was attempting to do; that is, they were the only two, excepting only the good doctor who had been called in to examine the inventor as to his sanity and who had remained to become his champion. The doctor considered Kelly entirely sane and on the threshold of a revolutionizing discovery. Strangely the Englishmen disappeared immediately after the successful demonstration of the Kelly pneumatic process. They left in the middle of night, left without asking for the pay which they had earned, left by way of Pittsburgh and New York where they had taken a boat bound for England. 5

5. John M. Boucher, op.cit., 23 et seq.; Herbert N. Casson, op.cit., 14.

Kelly continued to experiment with his process until the panic of 1857 drove his little company into bankruptcy. At Johnstown, Pennsylvania, Daniel J. Morrell, friend of Eber Ward, congressman from the district and iron master, was operating the Cambria Iron Company. To Daniel Morrell went Kelly with a request for space in the huge Cambria yard where he might continue his research. Morrell was progressive, was

always prepared to try the new in his business. If Kelly could make pure iron without fuel, that would be a great help to Cambria. The inventor was given a corner of the yard for his experiments. Within a short time he was ready to demonstrate his process before his benefactors. But things went wrong. Leibfreit, the engineer, perhaps because his sympathies were with the puddlers who saw in Kelly's process the end of their own jobs, turned on a full blast of his blowing engine and shot such a strong stream of cold air into the converter which Kelly had built that, amidst a brilliant shower of sparks, he blew most of the iron out of the top of the vessel. The happy puddlers laughed at "Kelly's Fireworks" and were certain that they were safe in their jobs. 6

6. John M. Boucher, op.cit., 81.

A few days afterward Kelly was ready to try again. With a blacksmith's anvil at his side and with a heavy hammer in his hand, he stood beside the roaring converter and waited. As sparks belched from the open mouth he took them up and tried to work them with his hammer. But the red sparks crumpled under the blows and when the yellow flames came it was found that the sparks were only a little less brittle. Finally came the white flames. These flakes, it was found, could be flattened into a thin sheet under the blows of the hammer. Again Kelly had made malleable iron, had made it without the use of fuel, had made it before a group of forge men rather than before two departing Englishmen. 7

7. Ibid, 84.

While he was conducting his experiments, William Kelly had never thought of the advisability of securing patent rights to his invention. He had not yet perfected the process and he would delay seeking a patent until he was certain of his results. Kelly was first of all an inventor. He knew little of business practices. Because he was entirely honest he thought of all others as being honest. Yet during those seven years of experimentation scores of individuals had come to know of Kelly's "air boiling process". His refined iron had been shipped to many industrial centers and had been studied by iron masters at these points. The process of refining iron by a cold blast was no longer the inventor's secret.

All of this meant nothing to Kelly until he read, in 1856, that one Henry Bessemer in England had secured a patent to what sounded like a description of his own pneumatic process. Mr. Bessemer, it appeared, was likewise applying for a United States patent. Then William Kelly began to wonder. Belatedly he applied to Washington for a patent on his own process. A hearing was held before the Commissioner of Patents at which time Kelly proved, to the satisfaction of that individual, that the pneumatic process was his own and that he had worked on it at least seven years before Bessemer. Says iron master James M. Swank of this hearing:

"This claim was heard by the Commissioner of Patents and its justice was conceded, the Commissioner granting to Mr. Kelly a patent which at once operated as an impediment to the use of the patents granted to Mr. Bessemer." 8

8. James M. Swank, op.cit., 396.

William Kelly was thus pronounced by United States authority the inventor of the pneumatic process of refining iron, a process, which, despite this fact, has since that day been designated under the name of Bessemer.

But neither Kelly in the United States nor Bessemer in England was making steel. Their product was a highly decarbonized iron made by an air blast in a furnace. They were blowing the carbon out of pig-iron with nothing more than a blast of oxygen. The iron which was produced by this method was far too fine and too brittle to serve the many purposes for which steel was destined. Kelly was not making steel. He was making a high grade of malleable iron and he wrote to James M. Swank:

"Our blooms were in high repute and were almost entirely used for making boiler plates, so that many steamboats on the Ohio and Mississippi rivers were using boilers made of iron treated by this process some years before it was brought out in England." 9

9. Letter from William Kelly cited by James M. Swank, op. cit., 398.

Kelly worked feverishly to remedy the deficiency in his process, which he realized. He could not make steel because he could not control the carbon content of his product. It was left to Robert F. Mushet, working in Scotland, to solve this carbon problem. He solved it in a very simple manner. He used the Kelly process to blow all of the carbon and other impurities from the iron, and then he re-introduced the exact amount of carbon required. The result was steel. Mushet recognized that it was impossible to halt the blowing process at the precise point where the carbon remaining in the iron

would be proportionately correct. On September 22, 1856, Mushet was ready to ask for a patent on his method of adding to molten iron, which had been decarburized and desiliconized by pneumatic blast, a melted triple compound of iron, carbon and manganese of which "spiegeleisen" was the cheapest and most convenient form. This patent was essential to the process and completed the making of cheap steel. 10

10. Ibid, 400

The manufacture of steel in large quantities was still impractical. It was left for Henry Bessemer to make his contribution at this point, for it was he who developed a converter suitable for mass production under the Kelly-Mushet process.

Daniel J. Morrell, in whose Cambria works William Kelly had made his convincing demonstration, was a far-sighted business man who was among the first to realize the possibilities of the pneumatic method. He told his friend Eber Ward, already the richest man in the Middle West as well as a leading iron manufacturer, about the experiments and suggested that the two join in commercializing the invention. Ward was interested but cautious. He knew that steel manufacture had reached a higher point of efficiency in England than in the United States. He feared that there were not enough working-men in America who understood steel. In England there was no question as to patent rights, and the Bessemer process had been placed on a production basis. Despite possible difficulties, he was willing to look into the matter. 11

11. Van Alstyne Papers.

Zoheth S. Durfee, a metallurgist from the Atlantic seaboard, had attracted Ward's attention at the time that capitalist was considering the establishment of iron industries. Durfee was recognized as the outstanding authority on iron in the United States, and, as was Ward's custom when he undertook an enterprise in which he was not well versed, he surrounded himself with experts in the field. Under such circumstances it is not strange to find that while Kelly was carrying on his experiments at Cambria, Zoheth Durfee was managing the technical end of the Ward iron industry at Wyandotte and at Chicago. Ward discussed the Morrell proposition with Durfee, who had also kept in touch with the development of the Kelly pneumatic process and who considered it sound. Eber Ward required nothing more. If the expert he was employing considered the new idea good it must be so. But before embarking upon the steel venture, Ward thought it worth while to investigate what progress was being made with the Bessemer process in England. Zoheth S. Durfee was sent to England to find out, and his report was so favorable that industrialist Ward determined to plunge into the new field. If the English were making money with the Bessemer process, there was no reason why Americans could not do the same with the Kelly method. First, however, it would be necessary to secure the patent rights.

News of the first engagements in the Civil War were being circulated at the very time that Eber Brock Ward was ready to proceed with his manufacture of steel. He knew of the patent contest between Kelly and Bessemer, and he knew that



ZOHETH S. DURFEE

the United States Patent Office had conceded priority to the Kelly claim. He envisioned cheap steel as the crying need of the nation. The railroads were using iron rails that wore out in a year or two, depending upon the amount of traffic they were required to carry. The Wyandotte and Chicago mills were rerolling these old rails. It was profitable work for the mills, expensive for the railroads. Steel rails, with their longer life, would aid the roads, would hasten the day when the vast expanses of the country would be bridged. Skyscrapers, subways and all of the other modern improvements made possible by steel, were not yet. But Eber Ward was a man of vision. He had seen his dream of populated lake shores come true. He had seen the great Middle West transformed from a forest country inhabited by Indians to a land that had become the bread-basket of the nation. He knew that he would see this same section become the center of humming industry. And steel, Ward reasoned, would bring about the change.

Without hesitation, despite the fact that he was embarking upon an uncharted course, with complete confidence and faith in his vision, Ward purchased the rights to the pneumatic process from Kelly. The "Kelly Pneumatic Process Company" was organized with his friend Daniel J. Morrell of the Cambria Works, Zepheth S. Durfee, his trusted metallurgist, and William M. Lyon, a relative by marriage. William Kelly was taken into the combine, and an arrangement was made whereby he was to receive a percentage of the profits. Ward had no intention of monopolizing manufacture under the Kelly patents, though he did plan to make steel in his plants. He was far too shrewd a business man to

believe that he could make all the steel which the country needed. More profits, he realized, could be made from the patents if the rights to their use were licensed to other iron-makers. But the Kelly patents in themselves were not enough. Steel could not be made with them alone. The Mushet "spiegel-eisen" patent would also have to be secured, and Zoheth Durfee was instructed to see what he could do about these rights in England. What he did was to secure control for the use of the Mushet method in America, a control which was immediately turned over to the new company organized at Wyandotte. Bessemer's converter did not interest Ward at this time. Kelly had also built a converter at Cambria, and while it was not so serviceable as the Bessemer invention, Ward figured that it would do at least until it was definitely established that the pneumatic process was feasible for American industry . 12

12. William F. Durfee, The Manufacture of Steel, 27.

Ward and his associates were now in control of all necessary patents, and the Kelly Pneumatic Company was ready to sell to any iron company the privilege of manufacturing steel. But no requests for licenses were received. The Civil War was claiming the attention of the iron industry. There was no time for experimentation, no need of taking chances with new ideas. Furnace-men were quite content to permit the Kelly Pneumatic Company to keep control of their patents. In fact, furnace-men gave the matter no thought at all.

A situation of this kind had not been anticipated by Eber Ward. It had been his belief that American industry would



THE KELLY CONVERTER

be eager to enter the lucrative steel market in competition with English manufacturers. But if others would not attempt the new, Ward would enter the field alone. He was a man of action and, war or no war, he was willing to venture into steel and contribute his best toward driving English manufacture from the American market. Durfee was of the same opinion. So was Morrell despite the fact that his Cambria directors shied away from the proposition. The three holders of the Kelly-Musket patent rights were ready to plunge. The stage was set for the first quantity production of commercial steel in the United States.

Chapter X
THE DAWN OF A NEW ERA

To undertake the manufacture of a product which has just left the experimental stage, to undertake such a venture when there were no experienced craftsmen in the country, to invest in an enterprise the value of which was still unknown, was a rather serious as well as discouraging business, Eber Brock Ward was to discover. Standing by in this effort to make commercial steel was William Kelly, who was more than willing to be of service. But Kelly was a dreamer, an inventor, and the practical Ward was satisfied that Kelly had contributed to his full ability when he perfected the pneumatic process. It would henceforth be just as well to keep Kelly out of the industry, where he would probably desire to continue his experiments. Ward was interested first of all in putting the invention to practical use. There was Zoheth Durfee who had gone to England, to Germany and to Belgium to study the new method of steel manufacture. Durfee was practical. Durfee would do. But other experienced workers would be needed.

Zoheth Durfee recommended his cousin, a young man who had graduated from the Lawrence Scientific School and who was at the time an engineer in New Bedford, Massachusetts. So it came to pass that William F. Durfee was installed at

Wyandotte with orders to construct the first steel plant in America. 1

1. Orange County Times, Middleton, New York, November 17, 1899.

The first suggestion made by the younger Durfee was for the construction of a chemical laboratory where the various Lake Superior ores could be tested and where the proper chemical procedure could be determined. This suggestion was quite new in industry. The experimental laboratories of the present day had not yet been considered necessary. Though there were many iron furnaces and mills in the country, not one of their owners had ever found it important to establish a research department. That the suggestion was new troubled Ward not at all. It made sense to him. He was investing much of his money and he was prepared to proceed the scientific way. Durfee was ordered to build the laboratory.

Where to find the man to place in charge of experimentation, once the building was completed, remained a problem. Iron-chemists were unknown in the United States. Even William Durfee knew little of iron manufacture. Iron ore was his field. But Eber Brock Ward, whose driving energy knew no obstacles, found a solution, a solution which was to have a far-reaching effect upon the development of the Middle West. If there were no workers with a knowledge of iron manufacture in the United States, reasoned the practical industrialist, such workers would simply be hired where ever they could be found and would be brought to this country. To England and to Scotland went Zoheth Durfee once again. Within a short time

great numbers of experienced iron-workers came to Detroit, and later to Chicago and to Milwaukee, all brought in by Ward, all ultimately to become important units in the great American melting pot. 2

2. Van Alstyne Papers; MS. 1870 Census, Wisconsin Historical Society.

Most important of these immigrants was probably Emil Schalk, a German chemist, who was a graduate of the Ecole Centrale of Paris. Schalk knew steel, knew also the type of ore that would produce the best steel. With Durfee he went to the south shore of Lake Superior, and there spent much time testing the various ore deposits which had been uncovered, ^{and} finally determining the grade which was to be used in the Wyandotte experiments. 3

3. William F. Durfee, The Manufacture of Steel, 25.

Upon his return from the north with his ore samples, Schalk was installed as chief of the new experimental laboratory which had, by this time, been completed. Because it was the first such institution in the country, the laboratory was a rather crude affair, far different from those to be built at a later day. Yet it was a beginning, and William F. Durfee was proved entirely correct in his insistence that a place be provided where an exact knowledge of all raw materials required in the manufacture of high grade steel could be obtained. 4

4. New Bedford, Massachusetts, Evening Standard, November 15, 1899.

Had William Kelly proceeded in the same manner, he would have saved many a sleepless night, would have given his epoch-making invention to the world at a much earlier date.

The work at Wyandotte progressed rapidly. An experimental steel plant, built as cheaply as possible because the success of the venture was still in doubt, was erected next to the laboratory. The Eureka Furnace, already doing business, was on an adjacent property and would provide the required molten metal. William F. Durfee, who was in charge of this work, had no blue prints to go by. There was no other steel factory in the United States nor was there anyone to whom he could turn for advice. The small Kelly converter, Durfee felt, would be of little use in making large quantities of commercial steel. Something of the situation in which these pioneer industrialists found themselves can be gleaned from Durfee's comment:

"I had never seen any apparatus for the manufacture of steel by the method proposed, and a description of that used by Mr. Kelly convinced me that it was not suitable for an experiment on so large a scale as was contemplated at Wyandotte." 5

5. William F. Durfee, op.cit., 19.

Nor was Durfee's task lightened by the mill workers who were now rolling iron rails in the Ward mill. To them Durfee was merely trying to produce more "Kelly Fireworks" at Wyandotte. It would not be possible, they said, to provide the intense heat required to drive the carbon from the ore by blowing cold air into the molten metal. Everybody except Durfee and Eber Ward seemed to know that. And so these experimenters in commer-

cial steel at Wyandotte received the same treatment that Kelly had received at Eddyville. People jeered and they laughed and says Durfee:

"... it was made almost insupportably burdensome by the outspoken opposition of nearly every influential person in Wyandotte." 6

6. Ibid.

Only Eber Brock Ward and Daniel J. Morrell stood by. The latter had confidence in Kelly whom he had seen at work; the former had confidence that his own judgment had not been wrong.

By September 1864 William Durfee had completed his experimental plant, had, in fact, already made small quantities of steel by the pneumatic process. In the laboratory this sample steel proved satisfactory. The converter which Durfee had designed was much like the one utilized by Bessemer, though Durfee, by his own admission, had never seen a converter of any kind, not even the one built by Kelly. The Wyandotte receptacle was exceedingly small when compared with its later day counterpart, but it was considerably larger than the one constructed by Kelly. With it Durfee could turn out two and one half tons of steel at a time. Some idea of what was going on in the experimental shop at Wyandotte may be gathered from a statement made at a later date by Durfee.

"Various experiments were tried and to test the ductibility and working qualities of the steel produced at Wyandotte, some of the early product was sent to Bridgewater, Massachusetts and there rolled into tack plate and cut into tacks which were pronounced to be very superior to any

previously made of iron. In order to test the welding qualities of the steel, John Bishop, the blacksmith of the works, made a tobacco pipe the size of an ordinary clay pipe, the bowl and stem of which were welded up on Wyandotte steel, and when perfectly polished there was no evidence of a weld. I have now two jack-knives and a razor made of this steel; the knives are rather soft but the razor was used regularly by my father for fifteen years to his entire satisfaction." 7

7. Ibid, 410.

With the necessary ground work laid, Durfee and Schalk were ready to attempt the production of steel rails that would prove the equal of those being imported from England.

It was on that eventful September 6, 1864 that Eber Brock Ward came to Wyandotte from his luxurious home in Detroit. This day was to determine whether his dream of a steel empire was to come true. Soon he was to know whether his mills could turn out good commercial steel and thus give employment to thousands of men in the Middle West. He would know whether his experiment had been sufficiently successful to drive English rails from the American market thus providing higher wages and more work for American labor. Eber Ward had been looking forward to this day for a long time and his face was more solemn than ever as he strode into the experimental shop where stood Durfee's little two and one half ton converter. Zoheth Durfee, who had laid so much of the ground work, was on hand, as was Daniel Morrell, who had never lost confidence in William Kelly and who had convinced Ward of the practicality of the new process. Present also were James Park, an iron master from

Pittsburgh and William Lyon, another furnace operator. This was a momentous occasion. If Eber Ward's experiment proved successful, Daniel Morrell would soon be making steel at his Cambria works and James Parks and William Lyon would be doing likewise at Pittsburgh. Much hung in the balance as these iron-masters watched.

Next to the converter stood John Teeling, who had made the shoe which was to take the pouring. There, too, stood Jim Conway, who was supervising the melting of the iron ore, and Matt Riley, who had a special place of honor, for he was handling the converter. Boss of the proceedings, with his quick eye darting here and there, was William F. Durfee, who had directed the myriad details of construction and who had insisted upon the experimental laboratory in order that errors might be avoided. He too had much at stake. Thousands of dollars had been poured into this experimental plant, but none of those men was thinking of the money which had been risked. They were accustomed to playing for high stakes and they were now engaged in a gamble which, if successful, would change the very economy of the United States. Engineers would be able to build of steel; they would be able to build structures of which man had never dreamed. The Age of Steel would dawn upon America.

And then, when all was in readiness, William Durfee gave the word and Jim Conway pulled the lever that shot the boiling, molten iron ore into the converter. The cold air blast had already been turned on and within a moment the great pot began to boil. Just as had happened at Eddyville and at Cambria, red



JOHN TEELING

sparks flew toward the heavens. Within a few minutes the sparks turned yellow and then white - the white which Kelly and Durfee had come to recognize as the end of the blow - the white which indicated that the molten metal was now good, malleable iron. Another word from Durfee, and Jim Conway pulled another lever that released the proper amount of spiegeleisen. Here was Mushet's contribution, a simple procedure of which Kelly could not think. Again a roaring, sparkling flame and then - a short ten minutes after it had all begun - the battle in the converter came to an end, the seething metal quieted, Matt Riley tipped the converter and, hot commercial steel shot into the shoes which had been prepared by John Teeling. A look of triumph gleamed in the Ward eye. Durfee was beside himself with joy and went about slapping one and all on the back. Daniel Morrell foresaw the end of iron rails. And the workmen who had carried on the great experiment rushed shouting through the factory doors bent for Sebastopol, for under the Ward edict there was no liquor to be had in Marine City. 8.

8. The details of this scene were gained in conversations with John Teeling, Jim Conway and Matt Riley.

The joy that reigned in that little town on the Detroit River on that bright September day was not unfounded. The great experiment had been a complete success, and as James Swank, the American authority on iron and steel, says "this was the first Bessemer steel made in the United States". 9

9. James M. Swank, op.cit., 409.

"Kelly's fireworks" had proved itself more than a mere

pyrotechnic display. Kelly's "air boiling process" was a demonstrated fact. The abuse and the ridicule which both Kelly and Durfee had been forced to endure now changed to admiration and to praise. They, more than any others, were responsible for discovering the way to the manufacture of cheap steel.

The ingots cast on the autumn day in Wyandotte still had to prove themselves. It would be necessary to roll them into rails, into plate, into structural shapes which would be usable. And Eber Brock Ward, flushed with the success of his expensive gamble, was anxious to have the work proceed without delay, was anxious to build a large steel mill in order that the new product could be made available to all. But trouble was in the offing. Rolling malleable iron and rolling steel were two different things. Warrie Brinton, boss roller at Wyandotte, hesitated about rolling the new steel ingots because he felt that his rolls would break. Superintendent Sam Potter supported his boss roller. Ward was furious. He had spent time and money to commercialize the Kelly process only to find that his mill would not be able to handle the product.

Even as he never indulged in strong drink, so Eber Ward never used profane language. But the glint in his steely eyes, the determined set of his iron jaw, the nervous shifting of silver dollars from one hand to the other, told Potter plainer than could words that the Big Boss was annoyed. When the former shipping tycoon had made up his mind the logic and the reasoning of his associates could not change him. The experimental converter had been built at Wyandotte with the

thought that steel would be rolled in the plant. George Thomas, cleaning up around the converter, saw the struggle that was going on between Ward and his partners. "Roll steel or I'll make a goose-patch out of Wyandotte", roared the heavy set little man. And Sam Potter knew that he would have to roll steel. 10

10. As told by George Thomas.

The shiny, new steel ingots were heated to what was thought to be the proper temperature. One was placed between the rolls and slowly worked down into an elongated shape. The rolls were set closer, and again the bar was started through but this time it was proved that Warrie Brinton and Sam Potter knew whereof they spoke. The roll broke. Rolling the new steel at Wyandotte was at an end for the time being. Eber Brock Ward stalked away, his jaw set, his brow wrinkled in thought. 11

11. As told by John Teeling.

While the new was being tried at Wyandotte, Orrin W. Potter was rolling new and re-rolling old iron rails in the Ward Chicago plant. He had not been consulted in regard to the steel experiments, knew little about them. But now the quer came from the boss, "Can your equipment roll steel rails?" Potter did not know, but he knew Eber Ward. "Yes," came back the answer, and Orrin Potter set out in a frenzy to strengthen his rolls and to prepare them for steel. When the time came to put through the steel, "O.W." had seen to it that he had the necessary power. 12

12. Van Alstyne Papers

It was not until May 24, 1865, that the steel ingots from Wyandotte were sent to Chicago. The American Iron and Steel Association was meeting in Chicago at the time, and Eber Ward hoped to have an epoch-making announcement for the gathering. Because he had seen the rolls in Wyandotte break under the stress of the steel, he would say nothing to his fellow industrialists until his experiment had proved a success. Neither would he invite interested persons to the rolling. Far too many had witnessed the collapse at Wyandotte. Such demonstrations were not good for the future of steel.

William F. Durfee, chagrined because of what had happened on the Detroit River, refused to go to Chicago. But Eber Brock Ward went. If his dream was to end in failure, he could stand it. Zoheth Durfee, who knew how it was done in Europe, came. The only stranger present was George Fritz, the man who within a few years was to improve the rolls so that they could take the strain of steel.

Again the billets were heated to the proper temperature. The rolls began to turn; the Wyandotte steel was slowly pushed between the heavy shapers. The three men who stood by and watched, two of whom had so much at stake, held their breath. The ever-present silver dollars were jangling in the big palms of Ward's hands. The steel proceeded through the rolls. Nothing happened. Again and again the process was repeated. Each time the billet became longer and thinner until finally it emerged, a regulation twelve-foot rail. Two additional ingots were put through the rolls. Each made

a rail, a rail perfect in all respects. Orrin W. Potter had prepared well for this test. There would be none to laugh. The Wyandotte steel had become the first steel rails in America. 13.

13. Details of rolling from letter by O.W.Potter to W.F. Durfee, May 26, 1865, Van Alstyne Papers.

Eber Brock Ward put away his silver dollars, looked at his large watch, received the congratulations of Fritz. He had won. The meeting of the American Iron and Steel Association could now be informed. Any iron mill in the country could arrange to roll steel rails in competition with the English product. The Kelly Pneumatic Process Company anticipated profitable days ahead.

Because there would still be many skeptics, witnesses would have to be invited to the next rolling. Three more steel ingots remained, and Ward determined upon rolling them the next day. He would invite many to be present at his triumph. B.F. Jones, who was in iron at Pittsburgh, was present for this second experiment, as were Lamborn, Phillips, Swift and Kennedy of Cincinnati, iron-men all. And, of course, George Fritz was there again to see the phenomena, which he was to improve so greatly, repeated. In addition, because the shrewd Ward meant to build a plant in Wisconsin and also because he desired tariff protection for his new enterprise, he had Senator Howe from Wisconsin and John Scoffield, who was a power in Badger State politics, present. If Ward could convince these men of the feasibility of rolling steel in America,

others would soon become converted. There would be no more scoffing. Three additional rails were rolled as smoothly and as perfectly as on the previous day. Wrote Superintendent Orrin W. Potter to Engineer William F. Durfee:

"Everything went so well I really wanted you to see some of the good of your labors for so long a time under such trying circumstances. You have done what you set out to do, and done it well, and I am glad to congratulate you and rejoice with you, for I can appreciate some of your difficulties, and wanted you to hear some of the praises bestowed upon your labors as you richly deserved." 14

14. Ibid.

One of the gleaming new rails was displayed at the meeting of the Iron and Steel Association in order that those who had scoffed might now come to wonder and to praise. A second rail was cut into short lengths to be used for analytical purposes and as souvenirs. The remaining four rails were placed on the right of way of the Chicago & Northwestern Railway, there to be tested under actual service conditions. That they stood the test well is evidenced by the fact that railroad men were rapidly weaned from the old rails which required rerolling every eight or twelve months. The tracks of the railroad were henceforth to be made of steel. Eber Ward had made certain of that on the twenty-fourth day of May in 1865. 15

15. William F. Durfee, op.cit., 26.

The new steel empire, so reasoned Captain Ward, was to be established at Wyandotte. The Middle West was to become mighty, mighty in industry as well as in agriculture. Detroit would become the industrial capital of the nation. Standing, one day, in his office on the banks of the Detroit River, the river which he had come to know so well since early childhood, Ward explained to his good friend Hamilton Gay Howard:

"Hamilton, you will probably live to see the day when Detroit will be one of the largest manufacturing centers, if not the largest, in the world. It can happen because with iron and copper in immense quantities to the north of it, coal to the south of it, and plenty of Detroit River water in front of it, and big canals being made of Connor's Creek at one end and River Rouge at the other, water in superabundance would be at hand, and Detroit would resolve itself into an industrial island of the greatest extent on earth." 16

16. Cited in Detroit News, April 17, 1939.

Eber Brock Ward was indeed a man of vision. The present city of Detroit with its teeming industrial suburbs proves his prophecy true. But it was this new-born industrial giant who could not only embrace so great a picture of the future, but who could likewise strive to bring it to realization, who could make it come true. It was he who built the "big canal at Connor's Creek", and it was he who planned a steel empire that would extend along the entire lake shore from Wyandotte to the Rouge, the Rouge that was one day to be the site of Henry Ford's colossus.

While Ward foresaw and foretold the future of Detroit,

he was prevented from bringing his plans to full realization by the objections of his associates. First to go was William F. Durfee who had played so important a part in building the experimental plant and in making the first commercial steel. Ward could tolerate no delay. To manufacture steel was his dominant desire. He saw no reason why it should not be made in the experimental plant. But Durfee felt that the makeshift plant would not do, and he could point to the broken rolls to substantiate his claim. Ward refused to listen. He would make steel at Wyandotte. Durfee, knowing that there was no way in which the iron master's mind could be changed once he had come to a conclusion, regretfully resigned his position in the plant he loved so well, resigned just one month after he had achieved his greatest triumph in that plant. With Durfee out of the way, Ward turned to the manufacture of steel. But again his eagerness had warped his usual sound judgment. The experimental plant was that and nothing more. It could not be made to pay as a steel producing unit, and Durfee was able to report that the "works were closed after about a year's unprofitable experience". 17

17. William F. Durfee, op.cit., 27.

The works were not closed before Eber Ward made one more effort to save his visionary steel empire for the banks of the Detroit River. He would build a new plant, a plant in which steel could be made and rolled with profit. His associates objected. It would cost a million dollars to build such a

factory, they said. What of it, responded Ward, "What if it costs \$5,000,000, it is the coming thing". 18

18. Cited in Detroit Free Press, August 14, 1923.

But the counsel of Zoheth Durfee, Sam Potter and Fred Van Alstyne prevailed. William Durfee had gone back to New Bedford because of this issue. Ward had no wish to alienate the others. If Wyandotte on his beloved river was not to become the seat of his steel empire, so be it. It was a hard situation for headstrong Ward to accept. But he had known other reverses - many of them. Let Wyandotte remain an iron works. He would build his steel mills in Chicago and in Milwaukee. The breaking of the roll in the Wyandotte plant when the steel ingot proved too much for it on that afternoon of September 6, 1864, changed the destiny of the city of Detroit. The cracking of that roll symbolizes the turn of fate, for Detroit was not to become the steel center of the United States. That honor was to be carried by Eber Ward to Chicago, and there, upon the foundations which he had laid, was to be reared the great United States Steel Corporation. There was to arise the gigantic Gary Works, the very heart of steel.

Wyandotte did not become a "goose patch" as Ward had predicted. Iron continued to be manufactured there until 1893. But the plant was never overly successful. Something was always breaking down or blowing up, even as it had during that first experiment. Matt Riley, who should know, still complains of the boilers - "black sheep boilers" he calls them. They were

always blowing up; at one time killing three of the workmen. The panic of 1893 proved too much for the mill. Steel was rapidly driving iron out of the market and Wyandotte eventually closed. For some twenty years the city was nothing more than a little river settlement. Gradually the mills disappeared, other Ward enterprises moved elsewhere or likewise disappeared, until, at the beginning of the twentieth century, the automobile did for the Detroit River what steel might have done many years before. Then new business came to Wyandotte. The old Ward mill office became the city bank, the mill yard blossomed forth as the leading business street, and ^{on} the spot where that first little two and one half ton converter had been erected by William F. Durfee, there stands now the Wyandotte Public Library. No sign of the hustle and bustle of the old mill town remains, no indication that this is the spot where the first steel by the pneumatic process was made in America, no indication except the sometimes still-smouldering charcoal pits to the west and a little tablet on the Public Library which reads, below a raised representation of the Kelly converter:

"This tablet is dedicated to the memory of those pioneers of the steel industry who in 1864, on this the site of the Wyandotte Iron Works, erected the first Bessemer Steel Converter used commercially for the manufacture of Bessemer steel in America."

Chapter XI

THE BATTLE OF THE PATENTS

The fact that Eber Ward and his pioneer associates in the steel industry had proved at Wyandotte and at Chicago that the making of Bessemer steel was feasible in the United States and that it was no longer necessary to import the English product, converted neither the railroads nor the iron-men to the use and manufacture of steel. The Kelly Pneumatic Process Company, which had expected a brisk demand for its licenses, had little trouble handling the business which came to it. The Ward experiments had been carried forward during the Civil War. That conflict had temporarily stopped the extension of railroads, and the roads at the time were the principal users of pneumatic-processed steel for rails. The iron-masters were busy turning out orders for the Union armies, and they had no time for new ideas. They were not at all like Eber Ward. He, too, was filling government contracts, was filling them and was making a fortune at it. But he was never content with the present. Even while his plants were humming because of Union orders, he found time to experiment with the new, found time to try out that which he thought would take up the slack in business when peace came. Such foresight was not common in industrial circles during the sixties.

John Fritz, who had witnessed the rolling of the first steel rails, was engaged in the iron industry and was, at a later period, to become a pioneer in steel as superintendent of Bethlehem. Yet during the late sixties he was not interested in the Kelly process. Iron was good enough for him. As he explains it in his Autobiography:

"But having all the work we could do on iron rails we paid but little attention to steel, as the information I received from Mr. Griswold satisfied me that it was useless to spend any more time on the steel question." 1

1. John Fritz, Autobiography, 151.

The patent controversy between Ward and Griswold, then in the offing, was causing the wily Fritz to keep out of steel. Others, likewise, were waiting for the settlement of the issue before transforming their plants to the needs of the new product. There were those who were ready to follow the lead taken by Eber Ward but they plunged without having their course well charted. So it was that in 1868 a group of Pennsylvania iron-masters prepared to commercialize the Kelly-Mushet process. Pioneers though they were, they failed to heed Eber Ward's advice. They established no chemical laboratories, spent little time in experimentation, depended rather upon their own ingenuity. The result of their effort is chronicled by Durfee when he says:

"The whole of the investment having been utterly lost in consequence of attempting to use material which an analysis costing not over \$50.00

would have shown to be absolutely unfit for the purpose intended." 2

2. William F. Durfee, op.cit., 21.

Even David J. Morrell, co-partner with Ward in the Kelly Pneumatic Process Company, was having difficulties with his Cambria Iron Works directors. The organization was making handsome profits in iron, and saw no reason for risking losses in steel. Morrell's arguments and pleading fell on deaf ears until he declared in the midst of a heated discussion:

"Gentlemen, you may think me crazy, but if you will pay me the book value for my stock, I stand ready to put every cent of it into a Kelly-Mushet steel plant." 3

3. Cited by Herbert N. Casson, op.cit., 18

Morrell had watched Kelly develop his process in the Cambria yards, had seen the first steel made at Wyandotte, had absorbed much of the enthusiasm and optimism of Eber Brock Ward. He believed firmly that this was to become a world of steel. He was willing to risk his entire fortune on that belief. Little wonder that with so fine a display of confidence, he ultimately won over his board of directors. Cambria slowly went into steel, forged ahead until, at a much later date, Andrew Carnegie was forced to admit that the Johnstown plant "produced more great steel makers than any other works in the United States".

Like John Fritz, the ironmasters feared a patent fight. They were willing enough to try out the new metal which was being made by blowing air through molten iron ore, but they

were not ready to risk heavy damages through litigation. They knew that the Bessemer, as well as the Kelly, patents would expire in 1870. "We will wait", said the mill owners, "and see what happens then."

Shortly before the original patent grants were to expire, both Bessemer and Kelly asked for renewals. In 1855, when Kelly heard that an Englishman was asking for a United States patent on the pneumatic process of making steel, he filed his claim in the Patent Office and by bringing in the neighbors who had witnessed the "fireworks" at Eddyville and who had witnessed a horseshoe being hammered from the white flakes, he was able to prove that he had used the process at least seven years before Bessemer filed an application. The Commissioner of Patents was convinced of Kelly's claim, issued a patent to the American, and thus placed an impediment against the Bessemer patent.

Now, fourteen years later, the old fight was to be continued. Supporting Kelly's claims were Eber Ward, Daniel Morrell and Zoheth Durfee. Opposed were practically all of the ironmasters and railroad builders in the United States. They cared little as to the rights involved. The meeting out of justice was not their function. If the patents were permitted to lapse, no royalties would have to be paid. That was as far as the interests of the iron barons went. The railroad men were in complete agreement. No royalties would mean cheaper rails. Eber Brock Ward said nothing. But he had influential friends. There was Senator Howe of Wisconsin, and Ben Wade,

his new father-in-law, and Daniel Morrell, still in Congress.

A great battle was being waged behind the scenes and then,

Commissioner of Patents Leggett found:

"Mr. Kelly's patent was put in interference with Mr. Bessemer's patent while pending in the office and in all points where interference existed, priority was declared in favor of Mr. Kelly....The question of novelty having been twice carefully investigated by the office, and twice conceded to Kelly upon exactly the same evidence now before the office, it would be ridiculous to go behind these decisions and deny the novelty of the invention." 4

4. Decisions of the Commissioner of Patents, 1871, 186.

Commissioner Leggett found, furthermore, that during the life of the patent Kelly had received royalties amounting to only \$3,400, which brought him to the conclusion that the American inventor had "a clear case entitling him to an extension".

Eber Ward and his infant Pneumatic Process Company had won, had, in fact, secured a new lease on life. But the controversy as to the relative merits of the Bessemer and Kelly claims continued to rage throughout the iron districts. Many there were, and still are, who wonder how Bessemer in England and Kelly in America conceived of the idea of blowing cold air through molten metal at exactly the same time. They point to those two Englishmen who had been working with Kelly on his experiments, and who, in the dead of night, disappeared. They point to the fact that further investigation revealed that the Englishmen, who neglected to ask for their earned pay

before leaving, had embarked upon the first boat which sailed for England. It is likewise related that when Zoheth Durfee returned from England, he carried a picture of Bessemer and showed it to Kelly while visitingⁱⁿ the inventor's home. Kelly, so his wife insists, immediately recognized the picture as that of one of the Englishmen who had worked for him at Eddyville. Mrs. Kelly did not relate this story until after both Kelly and Durfee had died,^{and} claimed that her husband, who had been called insane by some and who had been laughed at by others, refused to make known this startling fact for fear that he would be ridiculed. 5

5. This story is told in great detail by John N. Boucher, William Kelly, Chapters I, II, and VIII.

Whether or not this story fits the facts is of little importance. It is now an established and an accepted fact that Kelly preceded Bessemer in making steel by the pneumatic process. After a careful study, the Secretary of the Iron and Steel Institute, James M. Swank, concludes:

"It is claimed that William Kelly of Eddyville, Kentucky, a native of Pittsburgh, discovered and used extensively the pneumatic principle of the Bessemer process several years before it dawned upon the mind of Bessemer. The validity of this claim cannot be impeached." 6

6. James M. Swank, op.cit., 399.

Herbert N. Casson, who made an extensive study of steel, arrived at the same conclusion as did also Robert W. Hunt, the

veteran Chicago metal expert, and James Park, associated with Ward and a pioneer steel maker in his own right. All of this evidence, coupled with the findings of the Commissioner of Patents, would indicate that the pneumatic process for the manufacture of steel should be known today as the Kelly, rather than as the Bessemer method.

The patent controversy had much to do with the exaltation of the Bessemer name. Ironmasters and railroaders of the day belittled Kelly, praised Bessemer, because they wished to escape royalties. Eber Ward may also be charged with some of the blame. He desired to sell his steel to American railroads and to American industry. Bessemer steel had been developed for commercial uses in England several years before the Kelly process became known to the trade in the United States. The English firms, even during the Civil War, were selling their product on the American market, while the industrialists on this side of the Atlantic were satisfied with their iron business. Hence, Bessemer steel was already known to the American trade, and the canny Ward knew that it would be easier to sell his steel under the Bessemer name than under the name of the true inventor. As for Kelly, he consoled himself with the thought that Vespuccius had given his name to the Western Hemisphere. Columbus, too, had been forgotten.

The Bessemer patents, despite the fact that they had been denied by the United States Patent Office, had, nevertheless, invaded the American field. Cooper & Hewitt held the license in England and had paid Bessemer \$250,000 for the right of using the process in the United States. This firm, in turn,

sold the rights to Winslow, Griswold & Holley of Troy, New York, the largest ironmasters on the Atlantic seaboard, a firm which held large government contracts and in whose yards John Ericsson's famous Monitor had been constructed. 7

7. J.S. Jeans, Steel, 58.

In 1864, two years after Eber Ward's company was formed, the Troy people attempted to make steel under the Bessemer license. They built an experimental plant, but because they failed to secure the services of practical steel men, their effort was not successful. Ward was making steel at Wyandotte and at Chicago, and the eastern company, its production a failure, filed a law suit claiming infringement upon their patent rights.

The pneumatic process, which was the basis of the litigation before the courts, consists of forcing a stream of cold air under pressure into an egg shaped vessel, which has been partly filled with molten iron. The oxygen of the air combines with the carbon and silicon in the iron and eliminates both. The result is malleable iron to which a definite amount of spiegeleisen or ferro manganese is added. William Kelly, as attested to by all authorities including the United States Patent Office, discovered ^{that} the fact molten iron could be purified by injecting a stream of cold air. Robert Mushet re-introduced the proper amount of carbon by adding spiegel-eisen. Bessemer built the first practical converter. The three men had a hand in discovering the process of making steel by the pneumatic method.

Ward and his company controlled both the Kelly and the Mushet patents, but Alexander Holley and his associates held the rights to the converter. Neither the Wyandotte group nor the men of Troy could make steel without infringing upon the patent rights of the other. Ward, who hated law suits, recognized this fact at an early stage, and it was this that caused him to discard the Bessemer machinery and use the converter built by William Durfee in its place. 8

8. William F. Durfee, op.cit., 27.

The Durfee converter was not as satisfactory as the one developed by Bessemer, but with it the Wyandotte capitalists appeared to be masters of both the legal and commercial situation.

A weakness in the Ward claims developed when it was found that Mushet, through sheer neglect and carelessness, had permitted his patent to lapse in England. Because he failed to pay the required fees on time, he lost all right to his discovery and the ironmasters gleefully appropriated his process. There would be no more royalties to pay, which caused Mushet to remark ruefully:

"So my process became public property and Mr. Bessemer had a perfect right to make use of it, and his prosperity dated from that period." 9

9. Cited by James M. Swank, op.cit., 402.

At a later date Bessemer recognized his indebtedness to Mushet by paying him \$1500 annually in the nature of a pension. Bessemer himself is reputed to have collected \$5,250,000.00 in

royalties.

To Eber Brock Ward the lapse of the Mushet patent came as a shock. No longer could the Kelly Pneumatic Company demand fees on this end of its business. Worse yet, it left the Wyandotte group with only the Kelly pneumatic patent, while the Troy people held the converter rights. That appeared to place the two groups on an even basis for bargaining in an attempt to settle the law suits which were dragging through the courts.

Just what transpired to cause Eber Ward and Daniel Morrell to make the agreement which they entered into with Winslow, Griswold & Holley has never been made clear. When the smoke of battle cleared, after many hours spent in stuffy hotel rooms, the announcement was made that the two companies had merged, that Troy would hold a seventy percent interest in the new company, and that Ward and his associates would retain the other thirty percent. 10

10. Herbert N. Casson, op.cit., 17; James Boucher, op.cit., 107.

There was whispering that Ward had consented to this agreement only after it was made worth his while, but there is no proof to substantiate that rumor. Never in his extensive dealings had any question as to his integrity arisen, and whatever was done on this occasion, it can be taken for granted that his associates were fully informed. It is true that Ward disliked lawsuits. So did Morrell, who was a Quaker. It is also true that Ward was eager to proceed with his steel plant in Chicago and in Milwaukee, while Morrell was chaffing to

do likewise at Cambria. The Kelly Pneumatic Company represented only a small investment for Kelly had been taken into membership on a percentage basis. On the other hand, the Troy organization held a large financial stake since they had paid handsomely for the American rights. If they were to make any return upon their investment, they would have to collect royalty on a great many tons of American made Bessemer steel. 11

11. Owen vs. Potter, O.W.Potter Testimony, 1151.

In the light of the financial interests involved, the Pneumatic Steel Company, which was a consolidation of the two interests, looks not quite so strange as many in that day and in this would have it appear.

William Durfee, who was watching the consolidation from his home in New Bedford, was furious. He believed that the Ward group had sold out shamefully. But it could be of small concern to Durfee, he had withdrawn from the Wyandotte enterprises. Kelly, too, was displeased, and opined that "the day will come when some one will do me justice". 12

12. Cited by Herbert N. Casson, op.cit., 13.

For the United States the amalgamation was exactly what was needed. England was rapidly winning the American market. As early as 1863, when Eber Ward was just starting with his experiments, the Pennsylvania Railroad ordered one hundred and fifty tons of steel rails from English manufacturers and

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that amount was being increased each year. Unless American industry entered competition without delay the market would be lost. 13

13. J.S.Jeans, op.cit., 144.

The Pneumatic Steel Company, with Ward and Morrell its sponsors in the West and with Holley, Griswold & Winslow to give it impetus in the East, was soon licensing manufacturers in various parts of the country, charging one dollar a ton royalty for the use of their process. Kelly collected \$480,000 in royalties from the organization, slightly more than half of what Bessemer received for the purchase of his rights by the Troy group. 14

14. Ibid, 11.

Kelly received his royalties during the seven years following the organization of the new company, his patent rights having been extended only for that length of time. Had extended litigation been dragged through the courts, the production of steel would have been farther retarded, and it is entirely possible that Kelly would have received far less in royalties.

With the formation of the Pneumatic Steel Company, the United States became steel conscious. Chicago, Milwaukee and Johnstown became humming steel centers in the West, while Troy became a leader in the East. Iron manufacturers in all parts took on steel, first as a side line and then as their major product, and as competition grew keen, prices gradually dropped.

Steel rails fell from \$166 a ton in 1867 to \$45 a ton ten years later. English steel was gradually driven from the American market. Results indicated that Eber Brock Ward knew exactly what he was doing when he entered into the agreement with the men of Troy. There is merit in the statement that:

"Tremendous strides in the steel industry came only after the Wyandotte and Troy companies had merged their interests and made the Kelly process available to the increasingly important iron-masters." 15

15. Fischer Scientific Company, The Laboratory, January 1940.

Chapter XII

THE AGE OF STEEL

When, after the victorious conclusion of the Civil War, the "Iron Trails" continued their westward push, an apparent market for steel rails was opened to the ironmasters. But they were not ready to profit by the situation. They had been filling war orders, had paid little attention to Ward and his experiments with the Kelly "air boiling process". Ward, too, was not in complete readiness. His Wyandotte effort had proved futile, and while rails had been rolled in his Chicago plant, they had been shaped by machinery constructed primarily for the re-rolling of used iron rails. Such machinery would prove of little use if regularly adapted to the steel product. The Troy ironmasters, who now had every right to make steel, while successful in their iron venture, were never to achieve recognition in steel. Only Daniel J. Morrell, who had given Kelly a corner of the Cambria yard for his experiments, was ready. When, by his threat to retire from the company, his directors had changed front, Morrell was placed in a position where he could prepare for the demand for steel which he saw in the offing. He proceeded with the construction of a steel plant, and it was but natural that the first commercial order

for steel rails in America should be rolled in the Cambria Works at Johnstown. Robert W. Hunt, who had received at least a part of his training in Wyandotte, was in charge of this first order which was worked through the shops in 1867. 1

1. Joseph G. Butler, Fifty Years of Iron and Steel, 68.

The experience of Ward at Wyandotte and of Griswold and Holly^e at Troy demonstrated conclusively that it would not be practical to attempt the manufacture of steel products in an iron works. New shops, given over exclusively to steel, would have to be erected. It is a matter of record that the only successful steel made in America was manufactured in special plants. Ward, after one expensive lesson, recognized this fact full well, and since his associates at Wyandotte had refused to follow him into the steel field, he had no other choice but to concentrate his efforts elsewhere. Chicago, where the first rails had been rolled, was selected. Equipment, suitable for steel production, was installed in a new plant, and, shortly after Cambria commenced work upon its orders, Ward was ready to proceed with steel.

The North Chicago plant never had more than three owners. Practically all of the stock was concentrated in the hands of Ward, Captain Clement and Orrin W. Potter. Since Ward held the controlling interest, he could follow his own dictates in expanding and reorganizing the plant. 2

2. Owen vs. Potter, O.W.Potter Testimony, 1006.

New shops, affiliated with the North Chicago plant, but

located at South Chicago, were to be given over to the production of steel. This location, the old ship master figured, was the ideal one for what he had in mind. It was readily accessible by lake, was located at the hub of a railroad wheel, was surrounded by fine farm lands which would one day supply the large town which Ward envisioned. Likewise it was close to the ore fields of Michigan and Minnesota, and it would be a simple matter to transport ore by boat during the summer months. Of equal importance was the fact that the Illinois coal fields opened for production at this time, and the Ward mill would be assured of a steady supply of fuel. The Middle West was proving exactly the type of country suited for industrial expansion, as Ward had prophesied so many times. 3

3. Ida Tarbell, Elbert H. Gary, 87.

South Chicago came into its own between 1869 and 1872. Experienced men were transferred from Wyandotte to construct the blast furnaces, the converters, and the rolls. Because there was still a shortage of skilled steel workers in the United States, Ward again sent to England and to Scotland for the needed help. As had been the case in Wyandotte, houses for the men were provided by the company and these were made available to the workers at a reasonable cost. How these trained men were brought in is told by Joseph Trueman, for many years a worker in steel. He had been lured to Wyandotte from Scotland and when the Chicago mill opened he mentioned the fact to Ward that there was another brother across the Atlantic who knew about steel. Alexander Trueman, the brother, was invited to

come to Chicago with his entire family. Eber Ward paid for the trip. As an added inducement, Ward presented one of the newly built homes to the family. 4

4. As told by Joseph Trueman.

It was in this manner that the resourceful "Pathfinder of American Steel" secured the skilled help required in the Chicago works. Hundreds of workmen were brought over from Europe, all skilled and highly trained individuals, all men who with their families became substantial citizens of the new country. Eber Ward inspired immigration, but it was a selective immigration from which America was to profit.

So effectively did Ward build at Chicago that J.S. Jeans, who is to English steel what James M. Swank is to the American industry, called the Ward Chicago mills "one of the most complete Bessemer plants started in America". 5

5. J.S. Jeans, op.cit., 399.

In 1867 there were only three Bessemer producers in the United States. Inefficiency prevented the Troy concern from gaining a favorable position in the industry; Cambria was turning out a good product and was on the way to success; the Ward Chicago plant was large enough and backed by sufficient capital to handle any and all orders. The Chicago mills had a paid in stock of \$2,300,000, of which amount Eber Ward held \$977,100, while another \$500,000 was held by members of the family. There

could be no question as to who was in control at North and South Chicago. 6

6. Owen vs. Potter, Record, 22.

While North Chicago was prepared to reroll tracks for the railroads which were pushing ever westward, South Chicago was equipped to produce the longer-lasting steel rails. Yet the first order received by the new plant was to be not for rails, but for steel anchor chains for the United States navy, the first such chains to be manufactured and used in the United States.

The experimental steel rails made at Chicago had been laid on the Chicago & Northwestern right-of-way. Tracks on this line, made of iron, had never lasted longer than from five to eight months. After that they would be pulled up and rerolled. The steel tracks, on the other hand, surprised even the officials of the road. They remained in use a year and then another year and still failed to show wear. The Chicago & Northwestern determined that steel would replace iron for its rails in the future. So the Ward plant in Chicago found a profitable market in supplying steel rails for the Northwestern. The Burlington, which was now Ward's road, was soon won over, as was also the Flint & Pere Marquette, which Ward had built. The Michigan Central, again largely because of Ward's affiliation, became the fourth large customer. With these railroads on the buyer list it became a comparatively simple matter to place the Chicago plant on a paying basis.

Eber Ward believed in steel and believed, too, in the future of the Middle West. He was staking his fortune upon his belief. South Chicago was to be only the beginning.

When, during his days as a sailor, Ward had come to know the lakes so well, he had always been intrigued by the four rivers - there were four then - that would one day be the site of Milwaukee. He had traded with old Joel Wilcox for the wood which his boats required and he had done much business in the lake-front warehouse of Samuel and Enoch Chase. He knew of the high land to the south of the river outlet and he knew of Deer Creek which bisected that land. Milwaukee, said Eber Ward, was another of those spots in the Middle West which, surrounded as it was by fertile farm lands, would one day become a busy industrial center. So thought this ship owner now turned industrialist and he filed the idea away in a mind that already harbored many ideas.

The Ward interests had never been able to do business with the Chicago, Milwaukee & St. Paul railroad. That company, despite the fact that Ward was one of its directors, was using mostly iron rails and was purchasing such steel rails as it required from English concerns. That was bad news for the owner of the Chicago Rolling Mills, but when rumors reached him that George Schofield was considering the erection of a steel plant for the purpose of making rails for the St. Paul road, Ward considered the time ripe for action.

If the railroad refused to buy from the Chicago mills because that plant was already supplying competitors, Ward

would erect another mill. He remembered now those rivers at Milwaukee, remembered the high point of land along the south shore, remembered, too, that he had many friends in Milwaukee from his shipping days, friends upon whom he could count in an emergency. Headquarters of the Chicago, Milwaukee & St. Paul were located in the "Cream City". It would be sensible to construct his third mill on sluggish Deer Creek.

Business for the new plant would have to come from the Milwaukee Road. As Carnegie was to do at a later date, Eber Ward determined to enlist the railroad men who controlled the Milwaukee in his newly contemplated enterprise. Alexander Mitchell was at that time one of the leading citizens of Milwaukee, president of the largest bank and a director of the railroad. John H. Van Dyke, prominent in the growing Wisconsin metropolis, was another director, as was also Russell Sage, a Chicago capitalist. Ward knew these men well, had sat on the board of directors with them for ten years. We will build a mill in Milwaukee and roll the rails for our railroad, he told his colleagues, and because he had turned to gold everything that he had touched, they were not slow in coming to an agreement. Mr. Schofield and his competing steel plant was never heard from again. The Milwaukee Iron Company was born, not as an adjunct to the Chicago Mill, but as an independent Milwaukee concern. 7

7. Owen vs. Potter, J.J.Hagerman, Testimony, 1387.

Though Eber Ward controlled both the Chicago and the

Milwaukee mills, competition between the two was strong. It was kept strong in order to eliminate ^{outside} competition. The practice is a much-used trick in business today, but it was new when Ward conceived it for his Milwaukee plant. He was pointing the way, was showing the businessman of the future how Big Business should be operated.

Alexander Mitchell, John Van Dyke and Eber Ward incorporated the Milwaukee Iron Works in 1867, at the very time that vast improvements were being undertaken at South Chicago. Authorized capital stock was set at \$1,000,000, of which \$350,000 was paid in before construction was completed. But that was only the beginning. The Bay View plant, as it came to be known, was to require a much larger capital outlay as expansion proceeded. 18

8. Milwaukee Sentinel, January 10, 1867.

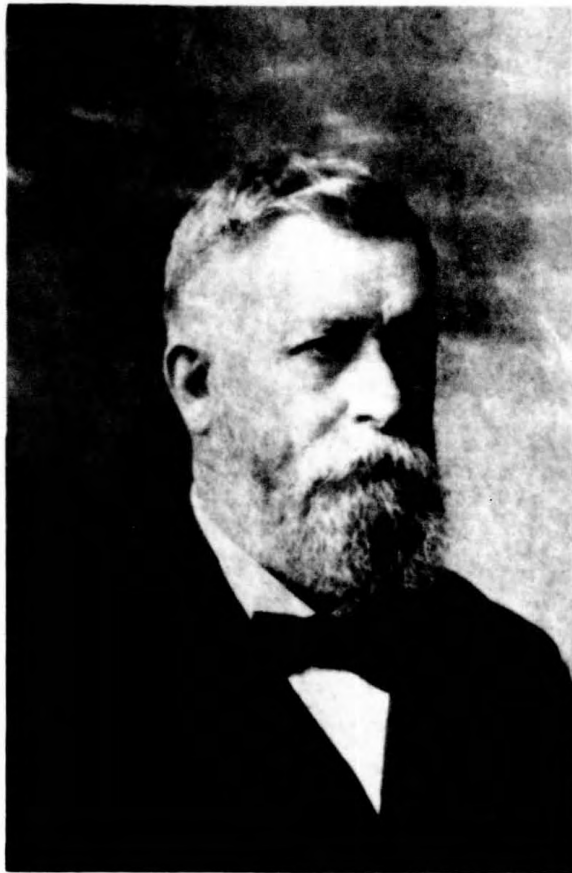
Work was commenced with minimum delay. Seventy acres of lake-shore land were purchased. Twenty-seven and a half acres were set aside for mill purposes, and the remainder was laid out in residential lots. As at Wyandotte, Eber Ward wished to surround his mill with a well-planned village in which his workers could live. Twenty-four company houses were built for employees who would have to be brought in largely from Europe. And because many of these would come without their families, preferring to become acquainted with the new land before making the final migration, the Palmer House, as fine a hotel as any village could boast ~~of~~, was built.

The new mill town overlooked the great bay of Milwaukee with the rapidly growing city visible along the north shore, causing Miss Bulah Brinton, daughter of Warrie, who had been so important in the making of that first steel at Wyandotte, to name it Bay View. And this name has prevailed despite the fact that the village has long since been incorporated within the limits of the metropolis and despite the fact that the mill is but a memory. 9

9. William J. Donahue, History of Bay View, MS.

The village and the mill were built simultaneously. The office was erected on the right of way of the Chicago, Milwaukee & St. Paul Railway, the road which was to provide much of the business. On April 8, 1868 the mill went into operation. That day marks the beginning of an enterprise that was not only destined to become the most important single industry in Milwaukee, but that was likewise to become an integral part of the later Illinois Steel Company and of the still later United States Steel Corporation.

Captain Stephen Clement, by this time a shrewd iron and steel man, was transferred from Chicago to become president of the new organization. J.J. Hagerman, who had started as a cabin boy on the Ward boats and who had come with Ward through the experimental stage of steel production, was installed as secretary. With the skeleton organization completed, the influx of new workers commenced. From England, from Ireland and from Scotland they came. The Lees, the Starkeys, the Merediths and many others came from England; the Clancys, the O'Briens came



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from Ireland; the Blackwoods and the MacDowells from Scotland. Their first home was in the Palmer House, but because they soon loved America, they brought their families, brought their families to mingle with the Chases and the Estes and the Wilcoxs, those pioneer New England families who had settled on the community farms thirty years before. And so, in Bay View, as in Wyandotte and in Chicago, Eber Brock Ward set the great American melting pot into action. 10

10. Milwaukee Iron Works, Records; MS.Census, Wisconsin Historical Society.

As had been planned, all iron and steel rails required by the Chicago, Milwaukee & St. Paul Railway were provided by the Bay View plant. Manufacturing facilities had to be enlarged in short order, so brisk was business. Two years after the first furnace had been blown in, Furnace No. 2 was ready for operation. Puddling mills were constructed with a capacity of thirty thousand tons a year, and a merchant mill, costing a quarter of a million dollars, was soon installed. No half-way measures were employed by the Milwaukee Iron Company, ^{a fact that} caused James M. Swank to comment:

"Wisconsin had no rolling mill until 1868 when Ward built his mill. It was from the first a large mill originally built to reroll rails. But it soon commenced to manufacture new rails." 11

11. James M. Swank, op.cit., 329.

The Milwaukee blast furnaces surpassed even those at

Chicago. Interested steel men from far and wide came to view them, came to learn how they were operated, came to hear how Ward could make them pay. Frederick Merk, in his study of the economic development of Wisconsin, mentions the furnaces and comments:

"The real beginnings of the industry (blast furnaces) dated from 1870, when the Milwaukee Iron Company completed in connection with its newly constructed rolling mills in the metropolis, a modern blast furnace said to have been the largest in the country. This was followed in the succeeding year by the erection of two other similar establishments... the three in Milwaukee were modern anthracite burners." 13.

12. Frederick Merk, Economic History of Wisconsin During the Civil War Period, 141.

Dr. Merk was wrong by two years on his date of the opening of Furnace No.1, but he was quite right in reporting it as one of the largest in the country. The other two furnaces which he mentions were the one located in the same mill yard and the other, also in Bay View, the Minerva Furnace.

Eber Ward had decided upon the Milwaukee location for his mill because of its proximity to both ore and coal fields and because the city was the division point of the Chicago, Milwaukee & St. Paul Railway. But the ore that the shrewd manufacturer was interested in was not located so far north as the Lake Superior region. At the time that he had become interested in the Medora and Eureka mines, he had heard of a vein of ore not more than forty miles distant from Milwaukee. Exploration had discovered the Iron Ridge in the vicinity of Slinger, Wisconsin.

Analysis showed this to be fine ore, suitable for the manufacture of rails. Ward and Hagerman organized the Menominee Iron Company for the purpose of mining this ore. This organization was formed even before the Milwaukee plant was thought of, but that institution now provided a splendid outlet for the newly-discovered iron, provided also a good return upon the Ward-Hagerman investment. With the Iron Ridge ore the Milwaukee plant was enabled to turn out rails that could not be duplicated by any other plant in the country. Dr. Merk recognized this fact when he wrote:

"The hard ore of the iron ridge mixed in proper proportions with the soft mineral of Lake Superior, afforded a product that for rails was unsurpassed - tough, durable, and of excellent wearing surfaces." 13

13. Ibid

Prosperity for all concerned followed the construction of the mill. A thriving community-center developed around the plant; new additions were constantly added to the works; new workmen were brought in. To accommodate the large lake boats which were carrying the ore from the north and the coal from the south, a gigantic dock, unique in American construction, was projected out into the lake. The dock was one hundred sixty one feet long and had twenty-six bins or "pockets", each of which would hold one hundred tons of ore. It was used not only for the purpose of receiving supplies, but was used likewise for shipping surplus ore from the Iron Ridge to the Ward works in Chicago. The "pockets" terminated in a chute, controlled from above, by which the entire contents of the bin could

be dumped into the hold of an ore boat by the mere shifting of a lever. The cars, arriving from the mines, could be run directly up on the pier by means of a trestle from which point they were unloaded into the pockets. 14

14. Milwaukee Chamber of Commerce Report, 1870.

In 1870, Eber Ward was devising and building labor saving devices which were to make mass production possible at a later day. He and his enterprises were in the vanguard of American industry.

It took four years to complete the Milwaukee plant and during that period the capitalization was increased to \$1,500,000, of which amount Eber Ward held \$426,000 and members of his immediate family owned another \$300,000. 15

15. Owen vs. Potter, Record, 22.

Here, as at Chicago, there was no question as to who was in control. There had been too many partners in the Wyandotte enterprise. Ward had not been able to develop that plant as he desired because of the interference on the part of others. No similar situation was permitted to arise at Milwaukee and at Chicago and it is a testimonial to the great industrialist that these two organizations flourished and lived on while Wyandotte, especially after Ward's death, declined steadily.

Statistics compiled from the records of the Milwaukee plant, which was rolling rails for only one railroad while Chicago was rolling rails for five, gives some idea of the enormous business which Eber Ward was building. In 1871,

when the Bay View works, not yet entirely completed, commenced production, the value of the finished product was \$1,920,000; but within two years this ~~item~~ had increased to \$3,290,000. While value-of-product figures for later years are not available, statistics on pig iron indicate that this rate was maintained with only a slight decrease during the Panic of 1873. The Milwaukee pay-roll shows a steady increase from year to year. In 1870 there were six hundred men working in the plant, with a pay~~roll~~, as announced by Hagerman, of \$413,673.15. Two hundred workers were added during the following year, and the pay~~roll~~ went to \$600,000. 1872 saw another hundred workers, mostly men from England brought in to care for the more technical work, and brought the pay roll to \$700,000. 16

16. Statistics used are taken from Chamber of Commerce Reports; from the financial files of the Milwaukee Sentinel; and from reports issued from time to time by Secretary Hagerman.

Similar conditions prevailed at Chicago. In both the South and North works business increased year by year, the plants attaining a position of leadership in the industry. Though no steel was being manufactured or rolled at Wyandotte, that organization did a lucrative business in iron until its collapse in 1893. Eber Brock Ward was accomplishing what he had set out to do when he sold his shipping business to Captain Goodrich. He was developing the Middle West industrially; he was finding employment for thousands of men; he was drawing inhabitants and business away from the populous eastern centers. Even as his boats had been the means of bringing scores of settlers into the Great Lakes region, so now his industries

were bringing many others.

Peculiar was the fact that the Milwaukee and Chicago plants, though owned by the same man, were in competition for all business except that originating with the railroads which had been customers from the outset. Milwaukee held to its original purpose and provided the rails for the Chicago, Milwaukee & St. Paul Railway. Chicago, on the other hand, made rails for the Michigan Central, the Burlington and the Flint & Pere Marquette. This arrangement was never quite satisfactory to Captain Stephen Clement who desired to see his Milwaukee shops expand even more rapidly. When the good Captain became rather insistent in his demand, Ward removed him from the presidency and assumed the position himself. For all other business, and for the rails required by other railroads, the Chicago Rolling Mill Company and the Milwaukee Iron Works competed as though there were no common ownership, the shrewd Ward figuring that such competition would keep others from entering the field. 17

17. Owen vs. Potter, O.W.Potter, Testimony, 1105.

Pressure was brought upon Ward to convert the entire Milwaukee plant to steel and to eliminate iron manufacture entirely. Orrin W. Potter and Alexander Mitchell were strongly in favor of such a move , but Eber Ward refused to stop the production of iron, the metal which had brought him great success during the Civil War. The Milwaukee plant remained a combination works until after the death of its founder.

Eber Ward, despite his sentimental attachment to iron, believed in steel as he believed in the Middle West. He had

risked his fortune upon that belief and he had not been found wrong. Others had either not the money or not the desire to follow his lead. Building a steel plant was a costly undertaking. Ward had the means and, as was so characteristic of the man, he was willing to gamble that he was right. Because he had the money, and because in him was the constant urge to expand, it was not long before Ward was buying up those more timid souls who had gone into steel half-heartedly and who were now finding the competition too rough for their liking. The Peoria mill was purchased and added to the Ward empire, as were also two smaller Chicago concerns which had timidly made a venture into steel. Here was the beginning of that consolidation which was to make steel mighty.

Often the palm for the development of the steel trade is given to Andrew Carnegie, and well does he deserve recognition. But when Eber Brock Ward was making that first American commercial steel at Wyandotte in 1864, when he was rolling the first steel rails in Chicago in 1865, Andrew Carnegie was toying with the idea of buying into the Iron City Forge Company, a small concern with four partners. At a time when Eber Ward was sinking millions into steel at Wyandotte, at Chicago and at Milwaukee, Andrew Carnegie was risking \$8,935.00 for his interest in the little iron factory. Not until the Ward enterprises at both Chicago and Milwaukee had become a national success, not until steel was showing a substantial profit in those plants, not until their founder had died, did Andrew Carnegie, in 1875, go into steel. And when he went into the business, he plunged not with

millions as had Ward, but with the Carnegie, McCandless & Company, an organization with a total capitalization of \$700,000, less money for the entire concern than Ward had invested in Chicago alone, to say nothing of the Ward holdings at Wyandotte, at Milwaukee and in the mines and boat lines which were directly connected with his enterprises. 18

18. Ida Tarbell, op.cit., 89; Herbert N. Casson, op.cit., 83.

In time, Carnegie developed a wonderful steel enterprise, one that Morgan and Gary were forced to buy in 1901 in order to secure a monopoly in steel. But the historic fact remains that the gigantic United States Steel Corporation was built not upon the Carnegie Bethlehem Works, but upon the Ward enterprises at North and South Chicago and at Milwaukee. The man who directed American steel through its infancy, the man who built the massive steel industry of the Middle West by constructing his own plants and by consolidating others with his organization, the Pathfinder of American steel, was Eber Brock Ward.

Chapter XIII
RIDING THE IRON HORSE

Little did Eber Brock Ward, in those days when he was listening to the gossip of the waterfront, think that the time would come when he would turn his attention to the "Iron Horse" of which there was so much uncertain talk. And yet, what he heard was not all idle gossip. The railroads were slowly but surely extending their lines into Ward's Middle West; they had taken much of his passenger business, had brought him to the conclusion that shipping was doomed and that the puffing locomotives on their iron rails would soon carry all of the available traffic. It was because he had reached this belief that Captain Goodrich had been able to buy much of his fleet while the former mariner turned his attention to other enterprises.

Great changes had taken place along the shores of the Great Lakes since that day in 1818 when, in company with his father and his three sisters, Ward had first come to the shores of Lake Erie. Where there had been nothing but sparse settlements, there were now large cities; where there had been only woods, there were now heavily laden orchards and fertile fields. And Eber Ward gloried because his hand had directed so much of the change. His ships had sailed to every corner of the lakes, had provided the only satisfactory means of

communication between the distant points of habitation, had been the supply line by which the settler could send his crops to the eastern market and could, in return, supply his varied needs from that market.

All that had now changed. No longer was water communication the only means of transportation in the country. The railroad was competing with the lake boats. The telegraph was bringing news as rapidly as it happened. Industries with smoking chimneys now adjoined peaceful farms. Where formerly each had made his living from the land, now many were thronging into the new cities, seeking jobs that would pay definite, and they hoped, steady wages. The economy of the Middle West was changing and Eber Ward was no small force in that change.

Ward never lost the pioneer spirit. Adjusting himself to changing conditions was a simple process for him. All his life he had to do just that. He had taken up shipping and had made himself the largest shipper on the lakes at a time when that business was essential. He had gone into industry and within a short time had become the "Iron King" of the country. He had foreseen the future of steel, and he had hastened the day when steel would become a cheap and useful commodity within the reach of every American. So now he would ride the "Iron Horse" which had driven him from his first love - the lakes.

It was while he was engaging in the iron industry during the Civil War that Eber Ward determined to go into the railroad business. Because his boats were serving both the east and west terminals of the Michigan Central and because his good friend Joy was the leading spirit in that road, Ward purchased

much of the stock and was ultimately elected a director of the railroad. As early as 1857 he had become interested in the Detroit & Milwaukee Railway, a line which was to circle the lake and touch at the points formerly served by the Ward boats. When the road became involved in financial difficulties, Ward advanced a needed loan taking stock as security. In addition the Detroit & Milwaukee owed \$45,000 to the United States Government for duty on its English rails. The Detroit industrialist underwrote the bonds but collected \$10,000 a year from the railroad for his trouble. 1

1. Detroit Free Press, September 17, 1869.

Beyond these investments, Eber Ward gave scant consideration to the railroads. He was busy with his steel venture and that made him conscious of the value of standing timber. Charcoal was one of the essentials of his new enterprises, and many furnaces had been forced to close down because of the lack of fuel. Ward had forestalled any such calamity by building his plants in the midst of large forest tracts or near available coal supplies. He had prepared still farther for the day when his forests would be no more by purchasing large holdings in distant regions. Much of this timber land was located in the northern reaches of Michigan, points that were inaccessible by either boat or railroad. This situation brought Ward to the realization that his boats could not go everywhere, that a railroad was the only means for bringing his timber to market. The country beyond the shore would be dependent upon the rails and the old shipmaster

determined to provide those rails.

On January 23, 1857, Eber Ward filed with the Secretary of State at Lansing, incorporation papers for the Flint & Pere Marquette Railway. He planned a line that would run across the State of Michigan from his holdings in the Saginaw Valley to the shores of Lake Michigan. Pere Marquette was at that time the port which was later to be known as Ludington, named, perhaps erroneously, for the Milwaukeean who owned large stands of timber in the vicinity. 3

2. Paul W. Ivey, The Pere Marquette Railroad Company, 215.

Starting construction in the Saginaw Valley, ^{the builders extended} ~~the new~~ road ~~was built both~~ westward to Lake Michigan and southward to Detroit. The line was opened for business between East Saginaw and Mount Morris, a distance of twenty-six miles, in 1862. During the first year this short stretch showed gross revenues of \$31,764.00 of which \$12,510.00 came from freight and the balance from passengers. The following year seven miles were added and the link between Saginaw and Flint was thus completed. In reaching Flint, Ward tapped a country rich in timber. Here was located one of the largest mills in Michigan, a mill capable of sawing six million feet of lumber each year. The revenue of the railroad tripled since much of the lumber was shipped to ports in the north, there to be trans-shipped by boat to the east. Ward's plan of connecting the interior of the State with the lake ports by means of a railroad was already bearing fruit. 3

3. Ibid.

The Flint & Holly Railroad was the next to be constructed. It extended only seventeen miles, but its value becomes apparent when it is noted that the Detroit & Milwaukee extended to Holly and thus Ward had a line running from Saginaw to Detroit. In 1867, to eliminate the many names by which his various railroads were known, Ward consolidated them all under the name Pere Marquette Railroad Company. 4

4. Detroit Free Press, November 6, 1867.

The newly consolidated road showed a profit from the outset, paying a four per cent dividend the first year and eight per cent the next, beside accumulating a surplus of \$47,994.00 during these two years.

In the meantime Ward was not neglecting his westward extension to Ludington. The Government had made a land grant for this road and Michigan had turned the grant over to Ward, but the transfer was to hold good only on condition that at least twenty miles of track would be laid each year. On two occasions it was not possible to comply with this proviso, but more time was granted in each instance. Six sections of land per mile of construction was the Government's contribution; and since Ward required money for his enterprise, he immediately threw the land open to settlers. For the line from East Saginaw to Flint 153,600 acres had been allowed and all of this land was sold with little effort at from five to ten dollars an acre. The country was heavily wooded and a profit was assured the buyers, most of whom were lumbermen with saw mills in the valley. Farther west, where the lumberjack had not yet pene-

trated, there was no such demand; and Ward purchased much of the land for his own account with the thought that the day might come when he would wish to enter the lumber industry in addition to his other ventures. 5

5. Quimby Papers, letter to O.W.Potter, June 5,1866.

Eber Ward envisioned a prosperous future for the undeveloped country on the Pere Marquette terminus of his railroad. H.C. Potter, brother of O.W. who was running the Chicago mills, had been named secretary of the line and in his report to the stockholders he indicated that he shared the enthusiasm of his superior when he stated:

"The importance and the magnitude of the lumber traffic on the Muskegon and Manistee Rivers urge this company to speedy construction of its road west. " 6

6. Paul W. Ivey, op.cit., 217.

Later in the same report he describes the nature of the country into which the new line was then penetrating. He thought the description necessary because few people had visited the region. Said Potter of the district bordering on Lake Michigan:

"It is a region of country inviting to the farmer and the lumberman, and, in my judgment, the extension of the road to the Tobacco River would render the whole line north of Saginaw more valuable, place you in the heart of the lumber region, and tend to speed the rapid

settlement of the country, with a corresponding increase of business on the road." 7

7. Ibid, 218.

The astute Ward, ever ready to take a hand where a profit was to be turned, and thinking always of diversifying his holdings, purchased much timber land not only along the east shore of Lake Michigan, but north of the Saginaw country as well. And because his holdings had grown enormously, he rushed work on his railroad in order that the land might be made accessible. This shrewd planning on the part of the industrialist was one day to pay high dividends to his heirs.

While the Ward lines now had a terminus at Detroit through the Detroit & Milwaukee, their owner desired to carry the road through to the state line at the south junction of the Detroit River. Ultimately he hoped to continue to Toledo, for that city was developing into a sizable lumber center, and Ward was already thinking of building one of the world's largest saw-mills at that point. With this in mind, even while he was pushing his Pere Marquette westward to Ludington, he found time to continue his Holly branch as far south as Wayne, a link which was opened to traffic on June 4, 1873. 8

8. Detroit Tribune, June 4, 1873.

The following year the extension to Monroe was completed and Ward now had a through line running from Saginaw to Lake Erie. This was the first railroad which successfully opened

the trade route to the northwestern part of the State, and connected it with points south of Detroit.

During this same period Ward had leased the Bay City & Saginaw Railroad, which ran from his timber holdings to his lake port. On the day that the route to Monroe was opened, he announced the purchase of the Bay City line, thus adding another important link to his rapidly extending lines.

Railroader Ward was not satisfied with these consolidations. He was accustomed to do big things in a big way. To complete his contemplated network through the northcentral section of Michigan he required three other short roads. So in 1872 he purchased the Flint River Railway, which connected Flint and Otter Lake and which made accessible the Cedar River timber lands. This was a very short road of some twenty miles, but like all of the others, it soon proved profitable. At the same time he gained control of the nineteen mile Cass River Railway, which extended from East Saginaw to Vassar and which provided the first rail link between East Saginaw and Port Huron at the junction of the St. Clair River and Lake Huron. As a third purchase he acquired the East Saginaw & St. Clair Railway, a belt line extending around the city of Saginaw. It was in December of 1874 that the Flint & Pere Marquette entered Ludington; and the Ward dream of having a continuous rail line, under his own management, continuing from Monroe on Lake Erie to Ludington on Lake Michigan, was realized. 9

9. Paul W. Ivey, op.cit., 221.

Throughout the remainder of his life Eber Ward remained as president of the Pere Marquette. The new railroad did not bring settlers into the territory which it traversed so rapidly as its builder had hoped, but despite this fact it was never a losing venture. Fertile lands were still available in Ohio, Indiana and Illinois and there was little reason why settlers should seek homes in north-central Michigan. For the time being Ward was forced to be content with the profits derived from his freight loadings and from his lumber interests, profits which were by no means negligible. At a later time the land grant which he had received from the Government was to prove a bonanza. By 1877 the railroad had received 511,502 acres of public land under the provisions of the charter. Approximately one-half of this total had been sold to lumber interests for \$2,369,729.21. 10

10. Ibid.

By 1899, long after Eber Ward had ceased to be a figure in the development of Michigan, 468,690 acres out of the total grant had been sold at an average of \$10.34 per acre, bringing a total of \$4,847,007.00 to the coffers of the Pere Marquette. Following the practice established by the founder of the road, most of this money was turned back into the business for improvements and extensions, none of it being used for maintenance of way and structure. All of which causes Paul Ivey, historian of the Flint & Pere Marquette, to comment:

"A factor of great importance in the development of the Flint & Pere Marquette road was the amount received yearly from the sale of lands given

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it by the Federal Government through the State of Michigan at the rate of six sections per mile of constructed road." 11

11. Ibid, 230.

Eber Brock Ward, who during his shipping days had done so much to open the country bordering on the shores of the Great Lakes to settlement, was continuing as the pioneer in making accessible the northern sections of his favored State of Michigan. He proceeded with this task as he had proceeded with every other. He studied the venture carefully, determined upon his goal, and drove ahead. Much of his railroad construction work was being carried on at the very time that his resources were being strained by his steel mill enterprises. The Panic of 1873 made the task doubly hard, not only because of the scarcity of money but because the bankruptcy of many industries made the delivery of needed materials uncertain. While western railroads were causing the collapse of the House of Jay Cooke, Eber Ward went his way serenely. He knew well the Middle West, knew his own ability, knew that the foundation upon which he was building was sound. This pioneer of the lakes was taking to rails as he had taken to water. With confidence he carried on to the completion of his plans and to the acquisition of greater wealth.

In 1862 his little railroad had grossed \$31,764.00. Ten years later, even before the western terminus had been reached, the books showed a gross of \$1,133,622.00. Net revenue that first year was less than ten thousand dollars, but in 1872 it had reached half a million. While the depression of 1873

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cut into the business carried by the road, profits continued, and at no time during the period that Ward functioned as president of the Pere Marquette was there a deficit. Beyond making profits this industrialist had managed to make his vast timber holdings accessible, had managed, likewise, to open for future settlement large sections of Michigan that only the explorer had traversed.

What the railroad meant to the Saginaw Valley is indicated in the increase in logging, which totaled 133,500,000 feet in 1863 and jumped to 457,396,325 feet in 1868 after the railroad had been opened. Salt tells the same story. In 1860 only four thousand barrels were taken from this splendid salt field, a figure which increased to 555,690 barrels eight years later. 13

13. Ibid, 318.

Profits and pioneering in a new country were not the only reasons that made of Eber Brock Ward a railroad builder. With his shipping interests jeopardized by the inroads of the rails, he had turned to iron and steel. In iron he met much competition from other and older American iron masters, and in steel he found strong competition offered by the English imports. The English product was underselling the American and Ward determined to drive these foreign competitors from the field. He knew of no better way of finding business for his new mills than by becoming actively affiliated with the railroads. Once sufficient business was obtained to assure the continued success of the mills, it would be a less difficult task to close the American market to the English manufacturers. Needless to say,

the Pere Marquette was built entirely on Ward-made rails. Control in other roads was acquired in various ways. The purchase of stock and the building of a new mill were required to secure the Chicago, Milwaukee & St. Paul as a regular customer. The Detroit & Milwaukee technic was employed to gain control of the Burlington & Southwestern. That road found itself in financial difficulties as was so often the case with the rails in those early days. Despite the fact that he was then heavily involved in the Pere Marquette, Eber Ward found it possible to extend a loan of \$250,000.00 to the Burlington. When payment of his note was not met on the due date, the industrialist was perfectly willing to accept \$500,000.00 in stock in payment of the obligation. 13

13. Detroit Post, January 4, 1875.

With this sizable block of stock in hand it is small wonder that Eber Ward was soon found listed as a director of the Burlington & Southwestern, and it may be assumed that South Chicago rails were being used by that road in preference to the English product.

The Louisiana Central was crashed in much the same manner. Again a loan which could not be paid resulted in the transfer of a large block of stock and the ultimate announcement of Eber Ward as a member of the Board of Directors. Whenever money was needed by a railroad, the steel maker appeared to have sufficient sums available and he always collected a substantial interest, usually in stock, for his kindness. 14

14. Detroit Free Press, January 7, 1875.

Despite the fact that the pioneer railroad builders often lost their entire investment, no such calamity overtook the former shipping magnate. All of his ventures into the domain of the "Iron Horse" turned out profitably, and at the time of his death his railroad holdings were still rated well above the million dollar mark. Only in the case of the Flint & Pere Marquette did Eber Ward conceive and build a railroad. In his other deals he usually came in after the ground work had been laid, and the manner of his coming was such that a considerable profit resulted.

Eber Brock Ward was happy in his new enterprises. He had enjoyed his ships as he enjoyed his railroads and his mines and his mills. His Middle West was becoming an industrial center in which many thriving cities with large manufacturing sections were developing while a few miles beyond the farmer was still tilling the fertile soil. Ward watched this evolutionary process and saw in it the balanced economy, the union of city and farm, which he had always advocated. Prosperity for the Middle West, he would tell his friends, was assured. And when he spoke there was a ring of triumph in his voice for it pleased him to recall that even as Ward boats had explored the vast shoreline of the Great Lakes, so now the Ward railroads were opening up an equally vast hinterland. The industrial financier of a new day was proud of his part in the new country.

Chapter XIV
SAWDUST AND BRINE

When Samuel Ward first came into Michigan, Bay City and Saginaw were tiny settlements that warranted only occasional stops for purposes of trade. There was little to lure pioneers into the wooded valley in those days. There was little to keep them there once they came. Timber, the very finest white pine, abounded along the river bank and far inland. But white pine on the Saginaw had no value in the twenties and in the thirties. Ample trees were available at far more accessible places.

But despite all this the settlers came. They were of that hardy race that saw in the forests only logs from which to build rude cabins and in the soil the mere possibility of subsistence. They pictured a great future for the Saginaw Valley, pictured it not for themselves, for prosperity would be too long in coming, but pictured it rather for their children and for their children's children. In the meantime, the Valley would give them a living.

While they waited for that distant brighter day, they were completely dependent upon Samuel Ward and later upon Eber Ward, the nephew. What news they received from the great world beyond came after it ceased to be news and came either on one of the Ward sail boats or on the later steamers. The coming of

the boat was an event of great importance in the Valley. Settlers came from miles around, gathered on the Ward dock long before the steamer hove into sight, gathered and waited for word from friends and relatives in New England. They were eager for the newspapers which bore a date-line a month old. They anticipated this or that little comfort which had been ordered from the East. The coming of the Ward steamer broke the monotony of frontier existence.

There was other business to attend to while the boat was tied up at the dock. The produce which had been raised in the Valley and which could be spared, would have to be sent elsewhere if the settler wished for a little money with which to purchase what he could not raise or could not make. There was no market for his crops around Saginaw. Eber Ward and his ships provided the only market, the only link with the buyers of the East. The Valley was almost self-sufficient except for such things as coffee and tea and spices. If the settler desired any of these luxuries he would have to barter with the Captain to secure them. "Saginaw was entirely dependent upon Ward for all of its supplies", states William B. Mershon, who lived all of his life in the Valley. 1

1. As related by William B. Mershon to the author.

Because the settlers of the Saginaw were so completely dependent upon the Ward boats, there were those who held the Captain not too highly. They grumbled because his boats did not come often enough; growled because they thought his offering too low on their produce; complained that his price was too high

on the luxuries he brought from the East.

Yet the wiser heads among them realized that they could not exist without the Ward line and, when the indomitable pioneer built his railroad into the hinterland, they knew that he was opening up vast inland reaches even as his boats had made accessible the remotest places along the shore. It was the Ward railroad that made available the huge timber for which Michigan became famous while, at the same time, it made of the peaceful Valley something more than an impoverished frontier settlement.

The wealth of the Saginaw had not remained unnoticed by Eber Ward. From time to time he acquired bits of property, usually timber land since he needed timber for his boats. Beyond this, he reasoned, the day would come when an industrialized Middle West, finding insufficient lumber in the denuded forests of the East, would seek elsewhere for its requirements. When that time came it would be well to be the owner of Michigan timber. 2

2. James G. Mills, Our Inland Seas, II, 350.

The Government land grant with which Ward had built his railroads, enabled him to acquire the lands which he considered worth-while. Timber tracts were selling at \$1.25 an acre, and for a man in Ward's financial circumstances, it became a simple matter to acquire as much of the public domain as he desired. And those desires increased steadily. He bought timber around Flint, at Otter Lake, and on the Cedar River. As his road extended westward toward Lake Michigan, he secured large holdings

along the Pere Marquette River. These acquisitions were made years before the country had been opened for settlement, years before there was any demand for Michigan lumber. But Eber Brock Ward was accustomed to look ahead.

By the time the Civil War burst upon the country, the white pine stands of the East had been exhausted. Eyes were turned to the forests of the Middle West. The Saginaw Valley beckoned to the lumberjack with his mackinaw and his heavy calked boots. There had been several small saw mills in the Valley for many years. A portion of the Ward business had come from those mills. Lumber had been freighted to Detroit, to Chicago, to Milwaukee. But this business was as nothing compared to the period following 1860. It was then that the lumber barons came, came and robbed the forest of its stately white pine.

The Pere Marquette Railroad was ready for this new business. Eber Ward once again had seen the trend of the times, had anticipated future demand, had placed himself in a position from which he could not help but profit. He opened short spur lines into his own timber lands on Otter Lake and along the banks of the Cedar. He erected a large sawmill at Saginaw. The man of ships and of steel and of many other things now blossomed forth as a potential lumber baron. The importance of the railroad to the Valley is noted from the fact that thirty-six sawmills were soon operating in Bay City, while Saginaw boasted seventy-four. All of this business was carried by the Ward railroad. There was no other way out of the Valley. 3

Eber Ward had planned the western terminal of the Flint & Pere Marquette at the junction of the river and Lake Michigan. The little town of Pere Marquette had developed at that point for no good reason whatsoever unless it be that some early settler saw in the site a good location. Ward, too, thought it well situated because his boats had found there a rather friendly harbor, a harbor that would act as an excellent outlet for his railroad. As the industrialist had anticipated, the coming of the Pere Marquette caused a boom on the west coast of Michigan despite the panic year of 1873. Lumber was soon to be crowned king of the State and the new railroad traversed the most densely wooded tracts. Of the choice timber lands in Mason, Osceola, Oceana and Newaygo counties, Eber Ward owned much. His surveyors told him that he possessed four hundred million feet of standing timber, all splendid pine, the only wood considered in those days, worth marketing. These vast Ward holdings were in addition to other tracts held near Saginaw and in northwestern Ohio, where the industrialist had made extensive purchases for mills which he planned to erect in Toledo. 4

4. Owen vs. Potter, Record, 774.

So it was that during the Civil War period the peaceful quiet of the Michigan forests was disturbed by the coming of the woodsman. Lumber barons and lumberjacks were moving westward, were moving into the Saginaw Valley, into the Muskegon district, into the regions watered by the Pere Marquette River. With their axes and cross-cut saws they came, came by

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Ward boat to Saginaw and by Ward railroad to the east shores of Lake Michigan. With them came the saloons, and the brothels, and the faro dealers. A new, unknown kind of life was disturbing the quiet of the pioneer in central and northern Michigan. 5

5. Stewart Holbrook, op.cit., VII, VIII.

The "Hell-roaring" era was casting its spell over the rivers and valleys of Eber Ward's adopted State. The ring of the woodsman's axe rang through the forests that had heard nothing more than the report of the pioneer's gun. And Eber Ward had much to do with bringing about the change.

The "pathfinder of American steel" had been waiting for this moment. He was ready to plunge into the new activities. He owned a railroad which could carry supplies into the dense forests, which could bring the cut timber to market. He owned ample lands which would supply the timber. Snaking logs out of the forest called for a high type of organization. It meant securing the services of men who were accustomed to the task, lumberjacks of whom Eber Ward knew little. This calculating business genius could see no profit in hauling timber out of the forests. He had found this end of the business not to his liking at Saginaw. There were scores of experienced lumberjacks in the woods, all ready to serve, all ready to contract for the work. So Ward assigned the task of cutting his logs to the lowest bidder, to the individual who would fell the trees,

trim them, and float the logs to Pere Marquette at the lowest cost. 6

6. As told by Charles Hanson and George Ackervill of Ludington, two men who worked in the Ward mills.

This system would spare the new mill-owner the difficulty of organizing his lumberjacks. He knew sailors and he knew iron and steel makers, but he recognized that woodsmen were a race in themselves, men who had to be understood, men who did not lend themselves to the ways of ships and of mills. Ward was satisfied to let those who were acquainted with the wandering woodsmen do the managing.

Because the westward migrations from the Maine woods had been heavy, Eber Ward found much competition for his contracts. Logs, by such agreements as he was able to enter into, could be hauled to his mills at a much cheaper figure than he himself could have done the job. The woodsmen operated under a system that even the ingenious industrialist had never thought of. The contractor, who secured the work by virtue of his low bid, would hire his men for the princely sum of fifteen dollars a month to which would be added lodgings and food. The men would agree to get the timber out within a period that assured the contractor of a satisfactory profit. If they failed, the men were simply not paid. 7

7. As told by George Ackerville of Ludington.

Eber Ward did not understand such methods of doing business. He alone had always taken all of the chances in his enterprises. His men had been paid regardless of what profits accrued to him.

Many times there were no profits. "Lumberjacks are a peculiar lot", said Eber Ward, and let it go at that. His logs were being hauled from the woods, that was all that mattered.

The Pere Marquette Lumber Company, with Ward owning all of the stock outright, was organized at the terminus of the railroad which bore the same name. This was the organization which was to saw the logs which were being floated down the river by the contractors. At the outset, Ward's son, Milton, was placed in charge, but, as had happened on previous occasions, this young man showed no aptitude for business, and ere long J.S. Woodruff, who had learned about boats at Marine City, was brought in to learn about lumber. He learned rapidly and at an annual salary of \$2,500.00 he made his employer one of the largest and most important lumber barons of Michigan. 8

8. Ibid.

It was characteristic of Eber Ward that he never engaged in halfway measures. Once he determined to enter a new field, he plunged without restraint. He had built the largest and finest vessels on the Great Lakes; he had erected the leading steel mills in the country; he would build a sawmill that would become the talk of the Northland, that would show these Maine loggers how the Middle West did things. In order to care for the logs which were already coming in, Ward built his first mill in 1870, a mill with a capacity of 85,000 feet of lumber a day. He erected it in the village of Pere Marquette, in the Fourth Ward, on land that abutted the river. He built it on fifty-five huge stone piers, out over the water, so that the

logs could be floated in with a minimum of handling. Fifty by one hundred thirty was the area of the ground space in that first mill, and it cost some \$60,000 to build. 9

9. History of Mason County, Michigan, 872.

The mill was soon too small for the great runs which were coming in from the camps, and in the following year, Eber Ward constructed his second mill. Samuel Moffat, a millwright, designed what was to be known as the South Mill, the one built the previous year being referred to as the North Mill. Moffat had won Ward's confidence, and as a result was permitted to plan as he thought best. Arrangements within the structure and the type of machinery to be used were determined entirely by the builder. The question of cost was never raised. That was Ward's way. He knew nothing of sawmills, but he did know how to employ men who were fully informed and whom he could trust. Once such men were in his organization, they were given complete freedom of action. If they failed, Ward dropped them; but if they succeeded, as was usually the case, they were taken into the inner circle, and as Ward prospered, so did they. Moffat succeeded. The South Mill was considered one of the finest sawmills in the United States. 10

10. Owen vs. Potter, Record, 774.

Where the first mill had cost \$60,000, the South Mill ran to \$146,000. Sawyers sang its praises throughout the country of the big trees. There were the great, double sixty inch circular saws which were used to size the logs. There was

another single saw of equal size to care for logs which, because of unnatural growth, could not be shot into the gang-saw carriage. And then there were other gang-saws, all new in that day, which cut the huge logs into fine lumber, gang-saws with as many as thirty-six saws in one block. Within a few minutes a monarch of the forest would be cut into fine lumber ready for the market which was clamoring for Michigan white pine. 11

11. As described by William Miller, sawmill worker; also History of Mason County, 875.

With such unheard of machinery in the mills it is small wonder that the new Pere Marquette enterprise formed the subject of conversation where-ever lumberjacks gathered after a hard day in the woods. Eber Ward was showing the way in this industry as he had in the others which he had entered.

Just as this Midwest industrialist had erected towns about his works at Wyandotte and at Chicago and at Milwaukee, so he now built a lumber town on Lake Michigan. Boarding houses were constructed as were also small company homes which were sold to the workers at a reasonable cost and under favorable terms. The foundations were laid for one of the most important cities on the eastern shores of Lake Michigan.

Many years before Eber Ward had come to Pere Marquette, Nelson Ludington of Menomonee and James and Harrison Ludington of Milwaukee, had noted two majestic forests in that vicinity. They made large purchases of this timber to add to extensive holdings which they had previously acquired in the upper-peninsula and in northern Wisconsin. The property in Wisconsin was deemed more accessible and was logged first. Michigan

holdings were sold to Ward and to others. The Ludingtons did retain possession of some of the land around the harbor, and so it came to pass that in 1874 certain political-minded citizens renamed the port of Pere Marquette, Ludington, thereby depriving the famous Jesuit explorer of the recognition which he so richly deserved. Many were the protests of the older citizens. Ward, they pointed out, was the man who had developed the city. It was his workmen, brought from distant parts, who had populated the district. His boats were making the harbor famous. His money was furnishing the life blood for its enterprises. But grumbling availed little. Ludington it was to be and to remain. Eber Ward merely smiled. He had never been interested in such empty glory. But to this day, citizens of the port are loud in protesting that their town should be known as Pere Marquette. Only the railroad which enters the town and the large carferries, successors to the original Ward line, still bear the historical name. 12

12. As learned from conversation with numerous citizens; also Perry F. Powers, A History of Michigan, I, 398.

Oblivious of the turmoil occasioned by the naming of the town, the trimmers and the great gang-saws in the Ward mills hummed on. There were days when as much as thirty thousand feet of lumber was cut, a record even in the days of the great log drives. A season's total often showed twenty-two million feet of lumber, and it was all of the much demanded white pine variety. 13

13. Owen vs. Potter, Record, 774.

Eber Brock Ward was not one to depend upon the regular trade outlets to dispose of the vast quantities of lumber which his two mills at Ludington, his two at Toledo, and his Saginaw works were turning out. At the corner of Roby and Blue Island avenues in Chicago he opened his own lumber yard, a yard which was soon selling thirty-five million feet of white pine annually. To carry that lumber from his mills to his trade outlet, the resourceful Ward built three large lumber barges, each capable of carrying 750,000 feet of timber. George Ackerville tells of these three barges, piled high with lumber, being towed southward by the tug Ward, which had been constructed for the purpose in the new shipyards at Wyandotte. The barges provided cheap transportation from the dense forests to the Chicago market. 1

14. Details relating to Ward Chicago Lumber Yard in Owen vs. Potter, Record, 774.

Labor in the Ward sawmills did not fare as well as did labor in the Ward iron and steel works. There was an abundant labor supply in the vicinity of Ludington. Most men of the North knew how to handle logs. Others had followed the logging camps westward. In addition, it is said, Ward brought in many immigrants, men whom his agents found at Ellis Island, men who had come to the land of plenty but now did not know where to turn. A dollar and a quarter was considered a good day's wage for inexperienced help, but Mrs. George Marcellus, who is the daughter of one of the pioneer sawyers, comments that with this sum "everybody seemed able to buy all they needed including a home". Eber Ward came to his sawmills only on rare occasions, being content to permit Moffat and Woodruff to run the mills as

they thought best. The enterprise was showing a substantial annual profit. Ward noted that the affairs at Ludington were in capable hands, when he visited the place for his annual three-day inspection. When things were going well, he saw no reason for interfering. Once again he had selected his aids wisely.

When Eber Ward's untimely death took him from the scene of his many endeavors, the sawmills were just beginning to swing into full production. The Ludington property was left in its entirety to his second wife, and it is a matter of record that this inheritance proved a bonanza, turning out many millions of dollars for its new owners, operating under the name of T.R. Ryan Company, a subsidiary of Ward & Company. Mr. Ryan, who was a brother of Mrs. Ward, was in full charge of the lumber holdings. In the industry, at the time of his death, the founder of these sawmills in the Northland was recognized as "the largest pine land owner in all the vast pine region of these north central states". 15

15. William Bancroft, op.cit., 341.

The Ward mills were cutting logs into lumber at a rate that surpassed the efforts of others in that day. Pine lands, it was assumed, were so extensive that they would never be depleted; yet it was the ruthless exploitation of the forests, an exploitation symbolized by the Ward mills, that makes it necessary in this day to supply the largest sawmills by hauling logs from the most remote and distant places.

During his short, periodic visits to his Saginaw and Ludington sawmills, Eber Ward noted the mountains of sawdust

which were collecting everywhere around the works, huge piles of waste spewn from the jaws of the gang-saws. For lack of a better place of deposit, this waste was thrown into the lake and the filled in areas came to be known as the sawdust flats. To the practical Ward mind such procedure smacked of inefficiency. There must be some use for this sawdust. It should, said the owner, be made a profitable by-product of the lumber business. Woodruff, with whom Ward discussed the matter, shrugged his shoulders. Every sawmill he had ever visited was marked by a steadily growing sawdust pile nearby. He had questioned some of the loggers who had come from the Maine camps. They had answered that "you can't cut logs without making sawdust" and they had never heard of "sawdust being et". That settled the matter as far as they were concerned, settled it, too, for Woodruff. But it settled nothing for Eber Ward. There must be some use for that sawdust.

Even before this Michigan industrialist, in his travels around the lakes, had heard the rumors of iron ore deposits in northern regions, tales of large salt pockets in the State were being spoken of. None of these early settlers was familiar with salt, but from time to time some learned traveler from the East would go through the country and find evidences of salt. Eber Ward was always interested in new opportunities and these rumors did not pass him by unheeded. It appeared that the Saginaw Valley was the center of all of these discussions and Ward was ready to reduce rumor to fact. The situation was still too uncertain for a venture on his own, but he did think that the State should make an investigation to determine whether

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there was anything to the stories which even the Indians were discussing, stories of salt licks and of salt springs. 16

16. Quimby Papers, Letter Eber Ward to Samuel Ward, June 10, 1837.

By 1838 the State was ready to act. Three thousand dollars was appropriated and Dr. Houghton, State geologist, was ordered to conduct the investigations. The following year, upon the request of Houghton, an additional grant of \$15,000 was made, experimental wells were sunk, and salt was found. Because the wells had not been sunk deep enough to yield brine in paying quantities, the salt legend was forgotten for the time being. Yet under the dense forests of Michigan, according to later analysis, lay brines more highly saturated than in any other section of the country. Potentially Michigan was to be the salt producing state of the nation. But lumber was to come first. 16

16. United States, Tenth Census, Report on Manufacture, 1880, 30.

Twenty years later, when the great logging era again called attention to the Saginaw Valley, the legislature was reminded of the investigations made by Dr. Houghton. Salt was coming into Michigan from New York and from Ohio. If there was actually salt in the state, such importations were poor business. In order to stimulate private enterprise in the salt field, it was voted to exempt from taxation all property used in the manufacture of salt and to offer a bounty of ten cents per bushel on all salt made in the State. 17

17. J.W. Jenks, "The Michigan Salt Association", in William Z. Ripley, Trusts, Pools, and Corporations, 3.

Nothing more was required. Those in Michigan who had the means began to sink salt wells. It would exempt their lands from taxation, would pay them a ten cent royalty if they could produce salt. Among those who tried for salt in the Saginaw Valley was Eber Brock Ward. His boats were serving the district, his railroad was doing business; salt would mean increased traffic for both. But so many were entering this tax exempt field that competition was beating the price of salt down. A situation of this nature was not to be tolerated by Ward. It was through his efforts that the Saginaw & Bay Salt Company was formed, an organization to which most of the salt manufacturers in the Valley belonged. It was the type of combine which was to become so prevalent in a later business period for the purpose of controlling prices. Under the Ward plan, all sales were to be made through a central agency and manufacturers were to make the organization the sole outlet for their product. Duncan Stewart, a Ward associate, was named President and in that position handled the details of the amalgamation. Stewart, as might be expected, shipped all of the Saginaw salt in Ward bottoms, and this despite the fact that other shippers, Captain Goodrich among them, were clamoring for the business and were even offering lower rates. Until the storm broke, the salt association proved profitable for Ward as well as for Duncan. But the so-called "shipping scandals" soon broke up the organization, which has been called the "earliest form of pool". Eber Ward had scored another first. 18

18. Ibid, 5.

Ward was now interested in salt. In his active mind, as he talked to Woodruff in Ludington, sawdust and salt brine seemed to run together. "Why not", he asked Woodruff, "use the sawdust to create the steam required to bring the salt brine to the surface". Here was a new idea. Salt wells would not have to be dug. Ward proposed to produce salt by merely drilling two holes to the salt beds. Hot steam, generated from sawdust, would be forced down the one opening and salt brine would overflow into prepared vats from the other. For Ward to get an idea meant to test it. Woodruff went to work on his new problem and within a short time the great sawdust hills at both Ludington and Saginaw were going up in smoke while they produced the steam which was forcing the salt brine to the surface. The Ward Pere Marquette Lumber Company dug two such salt wells, each two thousand feet deep. There was no further expense. Sawdust had become a by-product of the lumber industry. 19

19. As told by George Ackerville.

The two salt wells produced seven hundred barrels of salt a day, more than the entire State of Michigan could boast of in 1860 when four thousand barrels had been accumulated by all competitors. So rapid was the development of this new industry, that two years later production jumped to 243,000 barrels, while in 1873 a total of 823,346 barrels was marketed. 20

20. S.S.Garrigues, Report by State Salt Inspector, 1881.

William B. Mershon, who lived through it all, relates that Eber Ward developed salt beds in Saginaw, in Manistique,

and in Ludington. While many others entered this new field of enterprise, it was Ward who showed that the salt beds were widely spread in the State, it was he who first brought the various refiners into one organization in order to assure adequate profits; it was he who developed the cheapest methods for extracting the salt from the beds. So extensive were his salt workings that they would have been sufficient to take up his entire time. But to the energetic Ward they remained a by-product of his sawmills. Despite this fact, his salt enterprises became so extensive that they laid the foundation for the Morton Salt Company, which was one day to enter the field and develop, on the Ward holdings, the largest salt wells in the country. Eber Ward, the pioneer in shipping and in steel was likewise the pioneer in salt.

Chapter XV
BLACK MAGIC

There was nothing in the life of Eber Brock Ward that would indicate an interest in the manufacture of glass unless it was a faint memory of the greased paper which his father and uncle Samuel had placed in the openings of those little rude cabins, which they had erected at Yankee Point and in which the boy had spent his early days on the St. Clair. When this busy empire builder went into shipping, he was merely following the path which had been taken by his uncle. When he went into railroads and into iron and into steel, he attempted to offset the inroads made upon his shipping interests by the "Iron Horse". When he engaged in the logging boom, it was the natural sequence of events, the result of his days in the wilderness. Salt had been nothing more than a by-product of lumber. But in all of that vast industrial domain in which Eber Ward moved, there was nothing to interest him in glass.

The art of making glass, though known to man from an early day, had always been surrounded by mystery. In ancient times, the Egyptians held a monopoly on the art and during the thirteenth century, Venice was the leader in the industry. Here too, great secrecy enveloped the process. On the little island of Murano, nestling among the lagoons of Venice, the Italian artisans fired their pots behind closed windows and

barred doors. Murano's glass works were veritable prisons for the men who knew the secret of blowing molten glass into shapes of gleaming beauty, and who were to make Venice famous throughout the courts of Europe. 1

1. Rhea N. Kittle, "Glass" in Encyclopedia Britannica, (14th Ed.) X, 410.
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The good people of that early day, marveling at the glittering creations and hearing vague rumors that glass was being made from common sand, called it "Black Magic". A sorcerer's wand, they thought, was required to bring from the boiling caldron the bright, transparent product which appeared in so many shapes, and which served so many uses. And Eber Ward, who in the seventies was studying spiritualism for the purpose of determining what validity there was to the claim of transmitting messages from the beyond, may have heard of this "Black Magic", may have become intrigued thereby.

Glass, especially plate glass, was not being manufactured to any great extent in the United States at the time. In 1852, John B. Ford established a factory in Brooklyn, and several years thereafter another at Albany. Yet neither of these plants made much headway. The Americas continued to import most of the required glass from England, the country which had wrested the secrets of "Black Magic" from the Venetians.

In Toledo, where Ward was now operating two successful sawmills, Edward Drummond Libbey was making notable progress in his cut-glass factory. Ward met Libbey, saw the marvelous creations that were being produced at the glass works, and bought several especially fine pieces for his palatial Front

Street home. In Toledo, too, he met John B. Ford, whose glass ventures had been not too successful. But Ford was recognized as a genius in plant organization and the astute Ward was always interested in men who possessed special abilities. Ford was placed on the Ward payroll with instructions to bring efficiency to the Wyandotte factories. It was from him that Eber Ward learned more about the "magic". 2

2. Earl Aiken, Aladdin was an Amateur, MS.

At the time that the ironmaster was still sailing the Great Lakes, Forrest Shepherd, an English mineralogist and geologist, was staking through the Mississippi Valley country, seeking mineral deposits which might prove of value. He found some coal in Kentucky, some lead in Missouri; but, more important, silica or sand rock on the east side of Platin Creek near St. Louis. The geologist recognized the formation as a high grade of sand, suitable for making the finest glass. A group of Connecticut capitalists formed a company which disposed of much that Shepherd had discovered, did not, however, pay any attention to the sand on the Platin. The manufacture of glass held no appeal for American capitalists. Not so thought Dr. William H. Bidwell, one of the original members of the organization. Glass was exactly what the United States needed. With Shepherd and Dr. Vincent he organized a company to purchase the sand banks. Dr. Vincent, a careful man, carried two casks of the precious sand to England for the purpose of having it tested by the Thames Glass Works. 3

3. Details from Franklin, Jefferson, Washington, Crawford and Gasconde Counties, Missouri, 436-440.

The mineralogists of the Thames factory, after an analysis of the Missouri sand, told Dr. Vincent exactly what the United States Government was to tell Eber Ward at a later date. The sand found on the Platin was as fine as any yet discovered and was ideal for the manufacture of plate glass. The United States geologists, when they got around to it, found, in addition, that the Missouri deposit was one of the most important beds in the West, that it is sand of the greatest purity, that there is almost an inexhaustible supply, and that the cost of mining would be but nominal. 4

4. United States, Tenth Census, Report on Manufacture, 1880, 1067.

So glowing were the reports that a stock company, said to have been capitalized at \$400,000, was organized, largely with English money, for the purpose of producing glass on the Mississippi. Dr. Bidwell became the moving spirit in the enterprise. From England he brought Obed Blake, who knew glass, together with a group of European glass-makers. But when the Londoners, who were investors in the enterprise, learned that there was a "double liability" clause in the Missouri laws, when they learned that if the venture failed they would be held liable for twice the amount they had invested, they decided that American laws were rather queer and withdrew from the organization. They informed Dr. Bidwell that they preferred to do business in England. The Platin sand might be the finest in the world, but they wanted none of it. 5

5. History of Franklin County etc., op.cit.

Such was the situation when Eber Ward first heard of the glass sands of Missouri. He learned that the English stockholders had lost interest and he discussed the situation with Libbey and with Ford. Buying bankrupt businesses had become common with him. Usually he made a success of such undertakings. "Why not," he said to secretary Bronson, " why not take a fling at 'Black Magic'?" "Why not?", said Bronson.

The deeds and land titles, on file in the offices of the Pittsburgh Plate Glass Company, indicate that on July 3, 1871, Eber Ward paid ten thousand dollars to Oliver B. Bidwell for the Platin sand tract. Bidwell had paid thirty thousand dollars for the same piece of land just two years before. In addition, Ward purchased from Ferdinand B. Kennet, a parcel of land for \$31,404.25. As had been the case in most of his earlier ventures, Ward started in glass as a lone wolf. He made up his mind and plunged, paying little heed to the opinion of others. Once started, he would invite others to participate, would organize a company. He held the Platin purchase for ten months before he was ready to proceed. Then, on May 3, 1872, he formed the American Plate Glass Company and sold the land, which he had secured along the Mississippi, to that company for \$52,927.50. Within ten months the Detroit industrialist had realized a handsome profit. 6

6. St. Louis, Missouri, The Missouri Republican, May 3, 1872.

Capital stock of the company which Ward and his associates organized was set at \$250,000, a sum which soon proved too small and which was increased to \$500,000 within two years.

Allen A. Griffith, another mineralogist, was employed for the purpose of analyzing the sand and working out a formula for the plate glass which the company hoped to manufacture. The necessary furnace, holding only a few glass pots, was installed. A table, one hundred fifty feet long, was constructed for polishing the glass, and Fred Holdingshausen, who remembers those early efforts, relates that it required a ten-hour day to polish one piece, five hours to the side. The plant, such as it was, having been completed, Eber Ward found that in glass, as in steel, it was well nigh impossible to secure the services of experienced men in the United States. Again he was forced to turn to Europe. Again he brought immigrants from England and from France, where the ancient art of glass making flourished.

Since the Platin sand pits were located some thirty miles south of St. Louis, Ward once more was forced to build a town to house his employees. On a beautiful site in the valley, with Buck Knob, the famous sand hill, in the distance, and the Selma Hills forming a background, the new town was laid out. Because the workers would come from Europe and leave their families behind, two large boarding-houses and five other homes, arranged especially for bachelor living, were provided. John Pursall, who worked in the plant for more than sixty years, recalls that the houses were soon completely filled with workers, and that, when business was good, as many as eight men would be lodged in one room. On the main street was located the inevitable Ward General Store, ready to supply the wants of the workers, ready to accept the all too common scrip in times when "hard money" was scarce. The Company street, says

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Pursall, was dubbed "Smokey Row" by the residents because it always seemed to be in direct line with the heavy smoke coming from the plant, especially on those days when the good ladies of the village were wont to hang out the wash. To the west, on a slight elevation, were located the homes of the company officials. Here lived the superintendent and his staff. "Chicken Hill", the workers called the district, because the officials were said to enjoy chicken dinners on Sunday while pot roast served the workers. But "Smoky^e Row" and "Chicken Hill", homes used by workers and officials, were all owned by the company.

Nor did Eber Ward neglect to legislate against the sale of liquor, even as he had done in Wyandotte, in Milwaukee, and in Chicago, and in Ludington. It is written in the deeds of this town that intoxicating beverages are never to be sold within its limits. The saloon was not to rear its head in any Ward community. But thirsty glass workers found a way of evading the Ward edict even as had thirsty mill men. First, a little cross-roads section, three miles to the north, blossomed forth as an oasis to which the thirsty migrated on a Sunday to spend the day in relaxation. At a later day, the village of "Tanglefoot", a short distance to the west, welcomed the workers. The little settlement received its name, Fred Holdingshausen recalls, because "people got their feet tangled in the brush after drinking the whiskey they sold there". The name failed to please the village residents, and it was soon changed to "Limitville" because where it touched the Ward holdings was the limit where liquor could be sold. Finally, from all of these names, emerged the present Festus to designate a snug

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little Missouri village, which still sells its liquor to the workers from the neighboring factory town. The Ward prohibition proviso remained in force, with the result, say the old-timers, that "Festus got all the business".

The new glass town, too, would require a name. Because those who were associated with Eber Ward lived in Detroit, and because they were largely New Englanders who were accustomed to name the new from the old, they designated their Missouri holdings as "New Detroit". The English and French and Irish residents of "Smoky Row" were in no mood to accept the name of the Michigan metropolis. Complaints were loud that while the factory was located on the Mississippi, the management came from the Detroit River. Much of the material needed for construction had come from Detroit. The profits, too, would go to the East. At least, thought the workers, they should have the final word in naming their town. At a meeting of the directors the question was under discussion when Ward, who had spent some time on the Mississippi, stated that "the natives have a name of their own - Crystal City". Because he cared nothing for names, cared only for production, he suggested that the wishes of the workers be respected, a suggestion which was readily agreed to by the remaining directors. Henceforth, the glass town on Platin Creek was to be known as Crystal City. 7

7. Missouri Historical Review, IX, 180.

The fact that the Missouri sand deposit was located near the newly developed coal fields of Illinois and Kentucky had

not escaped Eber Ward. In fact, this proximity of raw materials had convinced him that glass could be made at a profit on the Plattin. He acquired a nearby coal mine, and when his plant was completed, his barges were prepared to haul the coal from its source to the glass works. Fred Holdingshausen remembers the landing at Plattin Rock, where the barges were met by ox teams, which carted the fuel to the furnaces. Nor was it a one way haul for the oxen. The manufactured product would have to be sent to St. Louis, thirty miles to the north, and the river provided the best means of transportation. So the oxen, after delivering coal to the furnaces, would take on a load of glass, carry it to the barges on the Mississippi and start it on the way to market. Communications were primitive in Crystal City.

By 1874 the gas furnace had been installed, sufficient workmen had been brought in, and the plant was ready to go into mass production. Eber Ward and his fellow Detroiters were on hand to see the first glass poured. What they saw did not please them. The scene was reminiscent of that day at Wyandotte when the great industrialist had ordered the first American made Bessemer steel rolled by machinery which was not built for that purpose. The Crystal City furnace had not been properly constructed despite the fact that an English furnace-builder had been imported for the task. As the heat was stepped up to the point needed to fuse the sand properly, the furnace melted down. The result was a conglomerate mass of glass pots, brick, and dark hued, partly molten, sand. What had been intended as the first Mississippi glass, came forth as something far different. Eber Ward stormed and threatened. "Black Magic", he

grunted, and stomped out of the factory and up "Chicken Hill" to talk it over with his associates. 7

7. Lewis W. Roop, "Works Number Nine", Pittsburgh People, November 1940.

He had come to Crystal City to make glass not steel, Ward declared to his startled superintendent. He had tried to hire experts but found only bunglers. He would drop the whole enterprise. After a time they calmed the short, heavy-set industrialist, and he was willing to give them another opportunity, an opportunity which they took thankfully, and which proved successful. Crystal City glass made its appearance on the market, and it was said that

"...with appliances inferior to those now in use, a considerable quantity of glass of good quality was produced." 8

8. Joseph D. Weeks, "Report on Manufacture of Glass", Tenth Census, 1880, 1137.

Eber Brock Ward had scored again, had scored in a field which was in no way related to any of his other ventures. The plant soon employed more than three hundred men. Glass was made in sixteen pots, causing the Census Report to add that "it was the largest plate glass company in America during the period". To Crystal City goes the credit of being the first in the United States to manufacture plate glass by mass-production methods.

The new plant was to enjoy many years of prosperous operation. Workers from various countries had been brought to this glass town on the Mississippi, and the old-timers relate

how the canny Ward pitted one nationality against the other in an effort to increase production. The Irish were assigned to one glass gang, the English to another, and so on. Each group aspired to make the best record, to pour the most glass. Sometimes the rivalry led to fighting, but that troubled Ward not at all. "Let the best gang win," said he. Production was steadily increasing. Nothing else mattered. There were occasions when there was more "Black Magic", like on that opening day. But the principal owner of the glass-works never knew of these later accidents. Spoiled glass was buried deep on the company grounds, and John Pursall is authority for the statement that even to this day, workmen, excavating for new construction, unearth some of this glass ruined in another day.

Labor conditions at Crystal City paralleled those prevailing in other Ward towns. Two dollars a day was a high rate of pay, one dollar and a half was normal. Similar wages were being paid in other industries. The workers could purchase the "Smokey Row" homes at reasonable prices. A small down-payment and the balance in monthly installments enabled all who so desired to become home-owners. During the depression, paper scrip was good at the company store in Crystal City as it was at the stores in other Ward towns. The paper was little more than Eber Ward's promise to pay, but the promise was made good in every instance.

And then, just when the first good plate glass was being poured in the United States, just when the American product was beginning to compete with the foreign importations, news of the death of Captain Ward reached Crystal City. The sad

news brought much worry to the little town. With the guiding spirit gone, what would happen to the Platin works? On October 20, 1876, the American Plate Glass Company, as organized by Eber Ward, was sold to Samuel P. Burt, who had been with the industrialist in lumber and in shipping. The Crystal City Plate Glass Company was organized with a capital stock of \$1,150,000, a sum which was increased \$350,000 within a short time. In 1876, a new Siemens furnace was installed, and Crystal City was assured of continued plate glass production. Practically all of the old stock-holders remained in the new company, with Ethan Allen Hitchcock, later to become ambassador to Russia, retaining his position as president, and with George Neale, who had been brought to Crystal City by Ward, continuing as plant superintendent. 9

9. Ibid.

The company prospered from the outset, prospered because of the superiority of its product which was referred to in the Census Report as "plate glass the equal of any made in the world".

Because Crystal City glass was of such high quality, and because the company was rapidly winning a monopoly in the American plate glass market, it was logical that, when the Pittsburgh Plate Glass Company was organized in 1895 by a consolidation of smaller plants, the Crystal City Glass Company should become a very important unit. This was the era of Big Business, and consolidation of glass companies could hope to gain control of the market without including within its corporate being the

Crystal City plant. In the Census enumeration of 1900, the Pittsburgh Plate Glass Company controlled ten of the thirteen works reporting.

So it came to pass that Eber Brock Ward, who founded the steel works from which sprang the United States Steel Corporation, who established the salt wells from which grew the Morton Salt Company, also organized the first successful plate glass industry in the United States. The pathfinder of American industry in the Middle West he truly was. Yet he was not destined to witness the gigantic developments which rose on the foundations which he had laid.

Chapter XVI
SILVER AT THUNDER CAPE

When the Captain of the little steamer Ocean, which Eber Ward had portaged around St. Mary's Falls in those days before there was a canal, took his ship on the uncharted stretches of Lake Superior, he found, at the westernmost point of the north shore, two huge land arms projecting out into the water. Point Magnet and Grand Point, extending for miles into Lake Superior, function as nature's breakwater for old Fort William, which the Hudson's Bay voyageurs established many years before the Ocean made that trip. Standing guard is what, when compared to the surrounding country, looks like a towering mountain, a mass of solid stone that uses Grand Point as its base. Thunder Mountain, the Indians called it because here, during a storm, the cataclysms of nature reproduced themselves ten fold, and the raging elements reverberated until there were those who thought the Evil Spirit made his habitat on Grand Point. Thunder Cape the modern mariner calls it as he comes to know it well. For the mountain is his landmark, his guide through the turbulent waters of Superior.

Lying not more than a quarter mile off shore from Thunder Cape, in the waters of Thunder Bay, is an island so small that it is not even recorded on the maps. The cartographers deem it not worth-while; have, perhaps, not yet discovered it. Legend

has it, that during the early days of the last century, a serious storm cast a shipwrecked crew upon this little island. While awaiting better weather, the men noticed a glittering spar crossing the west end of their refuge. So beautiful and so intriguing did this substance appear, that some of the crew, to while away the time, chipped off small fragments to take along as mementoes of their shipwreck. When they returned to civilization, they were to discover that their tokens were excellent samples of native silver. 1

1. Perry F. Powers, A History of Michigan, I, 193.

Whether or not this legend has basis in truth matters little. Nothing came of that early discovery. In 1868, more far-reaching results were forecast when Thomas MacFarland, a prospector, discovered the silver vein on the island. He staked his claim and attempted to organize a company for the purpose of working his find. But the \$40,000 which he required was not to be had. Thunder Bay, even in 1868, was little known, had attracted few inhabitants. To sink \$40,000 into the wilderness held no appeal.

MacFarland, not to be discouraged, told his story of silver at Thunder Cape to friends in Montreal, and ere long the Montreal Mining Company was organized. Once again the man who had discovered the silver was doomed to disappointment. Before paying for their stock, the incorporators looked at a map. The island was not to be found. They learned that this uncharted piece of land was only seventy-five feet long and sixty feet wide and that it was often submerged in a storm. They reasoned that there could not be very much silver in such a place, and

they permitted their incorporation to lapse. 2

2. Springfield, Mass., Republican, August 1, 1871.

Captain William B. Frue of Houghton, Michigan, had sailed Ward boats on Lake Superior and had found this so profitable that he now captained his own vessel. He knew the lake, knew its shorelines, knew Thunder Cape and Thunder Lake. He believed in the future of the Lake Superior region, and it was entirely possible, he told his old friend Eber Ward, that MacFarland knew whereof he spoke. There was much copper around Houghton where Captain Frue lived. There was a veritable collar of iron around Lake Superior. Was it not plausible to assume that there was silver at Thunder Cape? Eber Ward did not know, but he was willing to find out. Forrest Shepherd was busy at Crystal City. It was he who had pronounced the Platin sand as of the highest grade and he had been proved right in his analysis. Ward dragged Shepherd from his studies of sand in Missouri, set him to studying rock formations at Thunder Cape. When the mineralogist confirmed the MacFarland claims, Eber Ward, as was his custom, was ready to act.

Through Captain Frue he purchased the little island, as well as one hundred acres of land on Grand Point, for \$250,000. There would have to be much silver on the property to justify so large an expenditure, but once Ward was convinced of a project he never resorted to half-measures. Edward Larnard of Pittsfield, Massachusetts, and Alexander H. Sibley of New York, came in as partners. Captain Frue was to remain in charge as superintendent of construction and later, as chief of mining

operations. 3

3. Duluth, Minnesotian, October 29, 1871.

The superintendent was not one to delay when a task had been assigned to him. He had always proclaimed Lake Superior as the foremost of the inland lakes, and now he was to have an opportunity to prove his claim. On August 30, 1870, he plunged into his new duties. On that day, in the name of the mining company, he chartered the City of Detroit from Eber Ward, loaded the ship with hoisting machinery, pumps, and mining tools, employed thirty-four laborers, and set out for Thunder Bay. Crude shacks to house the employees were thrown up on Grand Point, directly behind the great Cape, and, without further delay, the good sea-captain prepared for his mining operations.

Silver Islet, Ward and his associates had called this bit of land, or rather of rock, lying there under the shadows of Thunder Cape. As Silver Islet it has come down in history, giving its name, in the meantime, to the company which was to exploit it. The Silver Islet Mining Company, with Eber Brock Ward as president, was prepared to extract millions from its surface.

Yet Silver Islet was more of a name than an island. Not a tree, not a blade of grass could be found on the four hundred square feet of land which was exposed to the sun on a calm day. Nothing but solid rock greeted the expectant visitor, who had heard much of this little island which was made of silver. At its highest point the rock reached scarcely eight feet above

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the water and from this elevation it sloped gently toward the bay so that the south end, the location of the silver vein, was as much as four feet under Lake Superior. 4

4. John H. Foster, "The History and Settlement of Silver Islet", Michigan Pioneer Collection, XIV, 197.
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The island presented no pleasant prospect to those thirty-four hardy souls, who came to build the mine. Such has the lure of wealth always been, that men will brave every hardship, will attack the seemingly impossible, will labor under the most adverse conditions, in the hope of gaining riches. Captain Frue and his crew were no different.

Because much of the island was always under water, and because, during a storm, the waves lashed high over the entire rock, the first problem to be met was that of protecting the workings so they would not be flooded once construction began. The captain knew what there was to know about boats. He knew how to place a vessel in dry-dock, knew how to effect repairs when the bottom had been injured. The same procedure, he believed, would prove satisfactory on the island.

Thirty days after the laborers reached Grand Point, four hundred sixty feet of cribbing had been prepared. All well bolted, thirteen feet in height, the cribbing was towed to Silver Islet, placed in position, and submerged with stone quarried on the mainland. Inside of the cribbing a cofferdam was built of wood and clay, two syphon pumps were set to work, and, ere long, seventy feet of the silver vein had been exposed and had been protected from the waters of Lake Superior. 5

5. Ibid, 201.
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Captain Frue had done his work well. He had placed an island in dry dock by the same methods he formerly employed upon his vessels. Eber Ward chuckled when he came north to inspect the work. His confidence in his old sea captain had not been misplaced. Just one month after Captain Frue and his laborers had reached Silver Islet, mining operations were ready to proceed. The rock from the shaft was used to strengthen the breakwater. Fifty feet below the surface a rich silver vein was uncovered. During the first three weeks of operation, silver ore valued at \$100,000 was taken from the little pit. Here was a mine that would produce great wealth. Captain Ward's quarter million dollar investment in the rock off Thunder Cape was to prove one of the most profitable he had ever made. 6

6. Springfield, Massachusetts, Republican, August 1, 1871.

Then came winter. The icy blasts from Lake Superior swept over the little islet. Breakwaters and cribs, that had sufficed to keep out the water during the calmer summer weather, were no longer effective. Huge, cold waves broke over the island and the miners were forced to retreat behind Thunder Cape for protection. Soon the two syphon pumps, that had formerly done duty in the hold of a Ward lake steamer, froze. Ice and sleet and snow filled the Silver Islet shaft. Captain Frue and his men would have to await the coming of spring before more riches could be taken from the rock.

During that first winter on Grand Point those hardy men, many of whom had been followed by their families, lived the lives of pioneers. Deep and drifting snows made it impossible

to leave the little settlement. The storms on Lake Superior kept all ships away and communication with the civilization of the East was completely severed. A situation of this kind had not been anticipated. The housing accommodations were poor for such weather. The food supply proved insufficient and had to be rationed. Life was not happy at Grand Point during that winter. 7

7. John H. Foster, op.cit., 199.

The summer that followed found Captain Frue as active and as eager as ever. As early as possible he visited the little islet which he had been watching so anxiously all winter. The inspection did not prove heartening. The cofferdams had been piled high on the island by the ice-shoves. The breakwaters had been demolished and the shaft was frozen solid with ice. No work would be possible until the hot summer sun would have time to melt away the last vestiges of winter. So great was the destruction that the work would have to be done over again. It was not a happy prospect, but the \$100,000, which had been taken from the shaft during the three weeks of operation, acted as an incentive to further effort. It would be worthwhile to repair the damage, thought Captain Frue, and Eber Ward agreed with him. Neither man was accustomed to give up without a struggle.

Not only was the great Detroit industrialist unwilling to abandon his Silver Islet project, but he was determined to sink even more money into the venture. He would make of it an even greater development than he had originally planned.

During the winter he had studied the reports of his engineers. These reports told of the fabulous wealth up there in the north, beneath the waters of the great lake. They told of a silver vein that was eight feet wide at the top and averaged seventy percent pure silver. They related that the vein spread to a width of thirty feet farther down and that the silver was just as pure. It was the following paragraph in the report by Charles H. Palmer, which fixed Eber Ward's determination to proceed with the work:

"I examined the mine carefully and it seemed to be as rich on the bottom as anywhere. The mine will hold out for years. It will only be necessary to pump out eight gallons of water per minute to keep it going." 8

8. Engineer's Report in Portage Lake Mining Gazette, May 1872.

Pumping out eight gallons of water per minute meant nothing at all to Captain Ward. Very often he had been forced to do better than that when one of his ships had sprung a bad leak. It would be a simple matter to keep the mine dry. Eber Ward was yet to learn that a mine shaft could not be compared to the hold of one of his vessels.

Captain Frue received orders to undertake repairs. New cribbing was constructed, new breakwaters were built - all bigger and stronger than before. On Thunder Cape a little village took form. More substantial homes were built for the workers. Large warehouses and docks were erected. Eber Ward was building another town, this time in the extreme northwestern section of his Middle West, this time in Canadian territory, - in Canada, the land in which he had been born.

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The ore, which had been taken from Silver Islet during that first profitable month, had been carried to New York by Ward boats. There it had been fed into the huge smelters which reduced it to silver. Going to New York for smelting was, to Eber Ward, a waste of time and effort. He saw no reason why he should not do the smelting himself. The great industrialist was not accustomed to depend upon others for processes in his own production. Wyandotte, which had been in disfavor with Ward since the days of steel experimentation, had not become a "goose patch" as its founder had predicted. In fact, Wyandotte had not been neglected. It was located on the Detroit River and Ward had high hopes for that waterway. And so it was that Wyandotte had prospered as an iron town, though steel was never again to be attempted in its mills. The new dry docks had been built there by Ward and now the proposed smelter was to be located on near-by property. It would be a simple matter to ship the silver ore from the head of Lake Superior, through the St. Mary's canal, to the smelter at Wyandotte. While being carried to New York the ore was already passing this town.

Ward engineers erected the smelters in record time, and then, the industrialist was forced to meet a situation which had confronted him on so many previous occasions. Men, who understood the refining of silver, were not to be had in the United States, just as men who understood steel and men who knew glass were not to be had here. Eber Ward followed the procedure he had come to know so well in his other enterprises. If there were no experts available in a given field, he would bring them in from wherever they could be found. From Germany, he

brought George Curtis, a silver worker, to be the chemist in his Wyandotte smelter. Rapidly the organization of the new plant was completed and ere long, five hundred men were kept busy refining the ore which was being brought from Silver Islet. 9

9. VanAlstyne Papers.

At the head of Lake Superior, ore was again being taken from what was called "the richest silver mine in the world". On a little body of water behind Thunder Cape, a stamp mill had been erected under the direction of William F. Forster, another of Ward's expert importations. Ten batteries of stamps, with five to the battery, were in operation and, with the mine operating day and night, business was good at Thunder Cape. To the natives at nearby Fort Williams so much activity was confusing. They wondered what was in store for their peaceful land. 10.

10. John H. Foster, op.cit., 203.

Twenty-four hour shifts were the rule on Silver Islet. From six in the morning until six at night, the day crew built breakwaters, manned the pumps, blasted silver ore; and from six at night until six in the morning, the night crew continued the operations. Twelve hours of labor was common in that day, but twelve hours on the islet was far more fatiguing than the same time spent in the Wyandotte mill or the Crystal City glass house. On Silver Islet there was room only for the shaft. No trees, no grass, no place to rest or even to eat in peace and quiet was available. So small was the islet that once the crew

was landed, no way of getting a respite from the grind was possible. The men would simply have to wait until their shift was over and a boat would carry them back to the mainland.

Engineer Palmer's report to Ward had been entirely accurate. Despite the extreme difficulties under which the men worked, the mine proved fabulously rich. Many tales have come from the northland telling of the wealth which was extracted from the rock. Millions were said to have been taken from that little fourteen acre spot in Thunder Bay. The vein was thought to extend far out into Lake Superior. In Algoma it was reported that "more silver had been taken out of the same amount of vein stone broken in Silver Islet than from any other mine in the world". 11

11. Algoma West Roland, 89.

There is definite proof that this statement is not based upon mere rumor emanating from the Thunder Bay district. During certain periods, as much as \$17,000 worth of silver was produced from a single ton of Silver Islet ore, while the average return, during the five years that Eber Ward operated the mine, was from \$2,000 to \$4,000 per ton. These figures take on significance when they are compared with the returns of the more famous Comstock and Colorado mines where a yield of from \$80 to \$200 per ton was considered an achievement worth chronicling to the world. 12

12. Chicago Tribune, February 18, 1875.

Blasting the ore out of Silver Islet was a difficult

undertaking, a constant tussle with the elements. But the effort brought great rewards. One Ward boat, in the spring of 1874, carried a silver cargo worth \$280,000 to the smelter at Wyandotte, and during that winter \$800,000 was taken from the mine. During Ward's life the venture yielded \$3,089,157.18 in silver, far in advance of anything that had been achieved in any other American mine from the same amount of ore. Despite the unusual working conditions, and despite the fact that the Company was forced to pay five percent of its profits to the Canadian Government as royalty, the investment proved one of the industrialists' most profitable. 13

13. Owen vs. Potter, Exhibits, 349.

Death stopped the work at Silver Islet, even as it had closed the busy mills at Chicago, Milwaukee and Wyandotte and the glass house at Crystal City. So involved was the gigantic Ward Empire, that all units in its far-flung realm were forced to pause, to take stock, and to await developments. The Midwest industrialist had a personal interest valued at \$810,000 in Silver Islet, a sum which he had already more than taken out in profits. Second largest stockholder was his friend, Edward Larnard, who now became president and managing head of the company. But Larnard, fine man though he was, did not possess the business acumen of Eber Ward. Nor did he enjoy the respect and the confidence of the industrial world. Silver Islet stock was quoted at \$2900 a share in 1875 but dropped to \$16 after Ward's death. Under the difficulties encountered at Thunder Bay, the mine could be made to pay only under dynamic

leadership. Never again was Silver Islet to pay such fabulous dividends.

A new company, with a capital stock of \$1,000,000, was formed under Larnard. The smelters at Wyandotte were abandoned and the ore was again shipped to New York. The shaft was down to nine hundred sixty feet and it was said that the miners "struck richer silver than any previously taken out". 14

14. Silver Islet Annual Report, 1879.

But even this fact failed to bring further success. Captain Frue had resigned when his good friend Eber Ward died. The water kept seeping into the workings. Mining became more difficult as the shaft was extended out under Lake Superior. Many hours of operation were lost while water was being pumped from the mine. In 1884 the project was abandoned. The mine was no longer paying its way. 15

15. Sutter Scrap Book, III, Burton Collection.

The waters of Lake Superior were once more supreme at Thunder Bay. The little village behind the Cape became a ghost town. Silver Islet has been forgotten and tourists view with little understanding the dilapidated buildings along the shore, buildings which now house a summer colony. The islet shows no sign of the workings. Only a few iron spars mark the spot where the shaft had been, and yet, Engineer Shepherd had said:

"Had this mine been on the mainland
and worked under ordinary circumstances,
what a wonderfully rich mine it would

have been. Even where it is, with all its disadvantages, it has produced largely and has been a very profitable affair for its stockholders." 16

16. Cited in Algoma West Roland, 170.

But to Eber Brock Ward thoughts of Silver Islet were always as dear as were remembrances of that first American steel rail which Orrin Potter had forced through the rolls at North Chicago. A huge silver nugget, weighing 2550 pounds, was displayed prominently in the Ward office in the Moffat building in Detroit. There it rested next to a cutting from the first steel rail. It was said to contain \$4,000 in silver. The nugget and the rail were symbolic of the vision and the achievement of the short, heavy-set man who transacted so much of his business from that office.

Chapter XVII

THE PATHFINDER OF BIG BUSINESS

Life was comfortable in the United States prior to the Civil War. Wealth had not become concentrated. There were no rich, no poor. A sparse population, spread over a great fertile area, produced what it needed, lived in quiet and in peace, not even dreaming of the hustle and bustle that was one day to be America. Four-fifths of the population tilled the soil, the other fifth engaged in the manufacture and distribution of the few, simple necessities which the pioneer required. There had been little change on the land. The settler of Lincoln's day farmed much as had the farmer of Washington's day, in fact, farmed much as had those Pilgrims of old. There was equality of material possessions and, if here and there, an American was unable to make his way in a certain community, there was always the West. True, it was no easy task to reach this beckoning country. There were as yet few railroads, but transportation was to be had along the waterways, great highways which wound their course through all the great western country. And here, on virgin land, the migrant from the seaboard would find new opportunity, would be able to carve a place for himself and for his family in the life of the West. Hunting, and fishing, and perhaps a bit of horse-racing, were all that the pioneer had for entertainment. He lived in his drab

surroundings, not rich, not poor, with enough of everything to insure existence. Life was static before the Civil War.

But great changes were in the offing, changes which were to be hurried by the "irrepressible conflict". The iron rails were pushing steadily westward, urged on by land grants offered by both state and nation. New inventions were slowly revolutionizing farming. Here and there, the industrialist, encouraged by the war tariff, was expanding his business. There were signs that the static, peaceful life of America was due for a change. The homestead law made the acquisition of western lands a simple matter; and this fact, coupled with the increased ease of transportation, brought many settlers to the Middle West.

In Eber Brock Ward this slow, yet inevitable shifting of the American scene, was vividly portrayed. He was the first incarnation of the industrialist. In the growth of his enterprise was embodied first that movement which was to create colossal business and giant industry, the very key note of future American development. This Detroit shipping magnate, who became known as the first "ironmaster", who turned to steel in Chicago and in Milwaukee, to glass in Missouri, to lumber and salt in Michigan, and to silver on Lake Superior, this man whose holdings covered the entire Midwest, personified the industrial tycoon of the present business world, typified, likewise, the interlocking of various commercial ventures, a practice which was to culminate in the later pyramided holding companies, which, in turn, brought on so many, as yet unsolved, economic problems.

It is these things which the life of Eber Ward, and the story of his industries, tell. It was he who laid the groundwork upon which ~~modern~~ business enterprise has been reared. It was he who pointed the way when so many others hesitated during those trying Civil War days. He was the man whom they followed, once the course had been charted. For it was Eber Ward whose mind conceived buildings of more than three or four stories in height, buildings which would tower sky-ward on frames of steel. It was he who saw the railroads streaking westward on gleaming steel rails; he who envisioned giant bridges that would carry any load; he who dreamed of a new economy, a combination of farm and industrial city, in the Middle West. And because he believed in the possibility of all of these changes, he had made the manufacture of cheap steel practical, had brought sawmills and salt works to Michigan, a glass works to Missouri, and other industries to St. Clair, Wyandotte, and Toledo.

Nowhere in the United States, during that Civil War period, was there a man who owned such widely diversified industries; nowhere one who was doing as much as he to aid the rapidly changing economy of the country, a changing economy which was to make of the United States, instead of a slow-moving, self-satisfied community, a busy, eager, forward-striding industrial land.

It was during the early fifties that Eber Ward first worried about the inroads which the rails might make upon his shipping monopoly. Then, impetuously, he had turned most of his fleet over to Captain Goodrich, retaining only a few vessels.

He soon realized that the sale of the boats had been a serious mistake. His mills required shipping to carry ore from the mines, and the finished product to the markets. His lumber needed to be taken from Ludington to Chicago. His glass would find ready sale in the East. Luckily, Ward still retained the St. Clair shipyards. Part of the damage could be repaired here. Just as Ward had feared for shipping, so other American owners had disposed of their vessels, had failed to build more. The result was that ere long there were not enough boats under American registry to carry the business of the Great Lakes, and Eber Ward was loud in his protests against the Canadian shipyards which were building boats with Canadian capital and Canadian labor, and which were then placing those boats under American registry. The Canadian born Ward was too good an American to stand by and permit this situation to continue. His answer was a new shipyard at Wyandotte. 1

1. Detroit Free Press, December 8, 1866.

Frank E. Kirby, who had gained a reputation for the yards which he had built along the Atlantic seaboard, was called to Wyandotte, and was ordered to build ways which could handle boats large enough to supply the increasing demands of lake traffic. Seven acres of land, with a river frontage of seven hundred feet, were utilized by Kirby for his project. The dry docks represented the latest improvements in this type of construction. Here was a yard that could build ships of wood, or of iron, or of steel, and a six hundred foot slip could be used in addition to the ways. When completed, these ^{docks were} acknowledged

~~that the docks were~~ "the equal to any in the United States, and excel any on the Great Lakes". 2

2. Silas Farmer, op.cit., 911.

In the Detroit Dry Dock Company, as the new organization was named, was to be found Ward's answer to the lack of adequate shipping on the lakes. Here, too, was his answer to the Canadian ship-builders, and to the situation which required him to depend upon private carriers for his ore. Ward firmly believed that every process in any of his business enterprises must be controlled by him. To be dependent upon others for even the slightest service, he maintained, might at some time threaten the entire business. Thus he had secured iron mines from which to procure the ore for his furnaces. He had purchased great Knob Hill for the sand for his plate glass furnace, and he had bought coal mines to furnish the fuel. His lumber holdings furnished the wood for his boats; his sawdust, the power for his salt blocks; his railroads the contacts with the farthest points of his empire. So, too, he would now build the great "red bellies", which the ore trade demanded, and he would build them in his own shipyards, from steel rolled in his own mills. None of these ventures was owned, as was later the case, by his steel companies. Dry-docks and boat-lines were independent enterprises, owned by Ward, who had different associates in each. Yet it was Ward who set the price which his steel company would have to pay for his ore and for shipping that ore in his boats. 3

3. Owen vs. Potter, O.W.Potter, Testimony, 1263.

As a ship-builder, Eber Ward relived the days of his youth. Here was his first field of endeavor and he loved it. Ere long he built ships which surpassed anything that had been seen on the Great Lakes. At his Chicago mill he had rolled great steel plates from which, in his Wyandotte yards, he built the first all-steel tug in the United States. Other small boats were completed in rapid succession, and within a short time Ward again controlled the river traffic, controlled that traffic not only because of his boat-line but by virtue of his directorship in the Tug Owners' Association, as well. Here he laid down the rules which kept all competition from his favored shores. 4

4. Detroit Free Press, January 30, 1869.

But tug-boats were not to be the limit of Eber Ward's re-entry into the shipping business. If steel was feasible for tug construction, it would be for larger boats as well. A number of steel craft, suitable for every conceivable use, was constructed. All were operated, not as one great shipping line, but as separate companies, many at times competing with each other, even as the Ward Milwaukee mill was competing with the Ward Chicago mill. There came into being the Ward Grand Trunk Railway Line, which handled the traffic at the terminals of the Ward Pere Marquette Railroad, and which was ultimately to grow into the Pere Marquette Carferry Company with its fleet of giant trans-lake steamers. There was also the Ward Sarnia Line, which engaged in a general passenger business along the length and breadth of the lakes. 5

5. Ward Log Books, Burton Collection.

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Most important of all was the Inter-Ocean Transportation Company, whose boats were to serve the Ward mills at Wyandotte, Chicago, and Milwaukee. It was for this line that the largest ore carriers on the lakes were built, ore carriers so large as to necessitate the widening of the St. Mary's ship canal. Pride of the fleet was the "red belly" V.H.Ketchum, built and launched in 1874. The vessel was twenty feet longer than any other boat afloat on the Great Lakes. Two hundred thirty-three feet long, with a forty-one foot beam, the V.H.Ketchum was in advance of dock facilities and, as a result, proved unprofitable at the outset. But dockage was soon increased, and this vessel, which rode the waters of the lakes until recent times, earned a fortune for her owner. Her owner was Eber Ward. 6

6. Ralph D. Williams, op.cit., 184.

Nine additional vessels, of similar size, were soon carrying thousands of tons of ore from the mines on Lake Superior to the Ward mills. The ironmaster had come back into the shipping business stronger than ever, and it is small wonder that the "Eber Ward liners were the best known boats on the lakes in 1870." 7

7. Stanley Newton, Sault Ste. Marie, 161.

And Eber Brock Ward, lumber baron, salt magnate, iron, steel and silver king, was proudest of all of his fine boats. Much of his far-flung empire he entrusted to his selected employees and associates, but he retained for himself the supervision and management of his shipping lines. A few days spent

at each of his industrial plants sufficed to give him a clear picture of what progress was being made, proved ample for such instructions as to improvements as he wished to suggest. But for his boats he had more time. Seldom did he go by rail to Toledo, or to Chicago, or to Milwaukee. His ships provided the transportation.

It was in 1870 that Ward built his finest lake steamer, which he named The Ocean in honor of that first little steamer which had been portaged across the Falls of St. Mary's many years before. The Ocean was his pride and was designated as the flag-ship of his passenger-carrying fleet. He thought it the fastest boat on the lakes, but the Empire State, under competitive ownership, challenged that claim. Eber Ward, the leading Midwest industrialist, who through his varied enterprises was pointing the way to future industrial development and organization, found time to be irked by the claims of the Empire State. A test was called for. A race on Lake Erie was to decide the champion. Captain Willoughby of The Ocean was instructed to spare neither "time, means or help" in putting his craft into the best possible condition. The bottom was scraped and greased from stem to stern; the engines and boilers were overhauled; and great quantities of greasy bacon were consumed in the task, as were also many barrels of rosin. Only one condition did Ward set: there were to be no passengers on either boat. Overheated boilers were known to explode.

On the day of the race, millionaire Eber Ward was in the boiler room of The Ocean. "We are the challengers, and it would not be nice to return without the broom which The Ocean so long

has been entitled to carry", he told the crew. Ten thousand dollars he had wagered that his ship was the fastest on Lake Erie, and he was on hand to make certain that no mistakes were made in that race from Cleveland to Detroit. There he stood in the engine room, stolid yet anxious, watching the steam gauge, encouraging the men, casting his eye, now and then, in the direction of the other boat which could be seen from the porthole. The smoke stacks of The Ocean became so red from heat that it was necessary for all hands to stand-by to prevent a fire. The boilers were forced to their very limits. The furious pace soon told on the Empire State. The Ocean steamed into Detroit well in the lead. Eber Brock Ward had won the race, and his vessel thereafter carried a broom at her masthead, indicative of the fact that she had swept the lake clear of all competition. Such is the story of the race as told by Henry W. Inman, wheelman on The Ocean, on the memorable occasion. 8

8. Detroit News, May 25, 1901.

The character of Eber Ward is revealed in this incident. His ships would always be his first consideration. Millionaire though he was, he was willing to risk his life in the hold of a vessel whose boilers were being forced beyond the point of safety. Ward would never admit that there were any who could surpass him. Ten thousand dollars he won on that race. Five thousand was divided among the winning crew members. The other five thousand was given to charity. That was Eber Ward.

And the broom, symbolic of Ward superiority on the lakes,

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became the symbol too, of the many Ward blast furnaces. For years thereafter, whenever a furnace completed a successful blow, and after the molten iron had been poured, a large steel broom was hoisted to the top of the structure. Residents of Chicago and of Milwaukee often saw this broom, designating a "clean sweep", projecting from the top of the furnaces. Others saw it as well, for the broom was taken up by the industry and soon made its appearance throughout the country.

As production in his mills increased, Ward found that the ^{ore} output from his mines was insufficient. To the Iron Ridge and Upper Peninsula mines he soon added others. Coal mines had been secured in Illinois and in Kentucky to supply his Crystal City glass works. The Jackson Coal Company was organized in Michigan to assure a fuel supply at Wyandotte should the charcoal give out. The Superior mines were organized under the corporate title of Wisconsin Iron Company, and the financial set-up of this company is indicative of the Ward method of handling his various ventures. The company was organized with a capital of \$1,500,000. Of this amount Ward held \$426,000, a two-fifths interest was held by the Milwaukee Iron Company, and the balance was underwritten by the North Chicago Rolling Mills Company. Since Ward held the controlling stock in both of these companies, the Wisconsin Iron Company was under his complete control. Minority stockholders would have little to say in the management of the business. One such minority stockholder was Mark Hanna of Ohio, later to become famous as a President-maker. But in the late sixties Hanna was a debtor of Ward's in the Wisconsin

Iron Company. 9

9. Owen vs. Potter, Record, 22; Testimony, 1051.

For a half million dollars Ward purchased the Eureka Mine in Colorado for the purpose of increasing his silver output and keeping his smelters busy. At the outset it appeared as though this shrewd financier and industrialist had made a poor investment. The Eureka failed to produce silver and Ward was certain that either the mine had been "salted", or his engineers, for the first time, had failed him. He vowed to get his money back or ruin those who had made the sale. A court trial was lost for it could not be proved that the mine had been tampered with. Ward ordered work to continue. He placed a new manager in charge and soon found that again his engineers had been correct in their analysis. Before long the mine produced silver in very profitable quantities. But Ward was not to realize upon this investment for he died just as pay dirt was reached. 10

10. Ibid.

The Detroit industrialist was always in the market for any business if he thought it would prove profitable. In 1869, the Leland Furnace failed. The Leland was a good piece of property, but had been mismanaged. Ward purchased the Leland for E.B. Ward & Company by assuming \$110,000 in debts. W.G. Thompson was affiliated with the purchaser. No others were involved. Ore for this new acquisition was bought from the Wisconsin Iron Company, and the new furnace was soon a paying

proposition. 11

11. Detroit Post, November 22, 1872.

It was never difficult for Ward to secure the funds with which to purchase new properties. So wide were his interests, so closely was he connected with men of wealth, that required money was always available. His practice of using the funds of one company for the purpose of purchasing another foreshadowed a period of frenzied finance and a custom which was to become good business practice in a later day. But Eber Ward had no pattern to follow. He cut his own pattern. 12

12. Owen vs. Potter, O.W.Potter, Testimony, 1189.

Because available cash was the very cornerstone of his success in making attractive acquisitions, Eber Ward always carried large balances. Bills, incurred for the purchase of materials, were always discounted. A surplus was also carried for the purpose of covering such commercial paper as might be protested by the banks. 13

13. Ibid, 1183.

No opportunity was ever to be passed by simply because money was not available. Ward borrowed lavishly in order to carry on his wide-spread efforts for he felt that taking sensible risks meant progress. Captain Clement recognized this urge for expansion when he testified, "Ward was generally for extending his business and his interests". 14

14. Ibid, Stephen Clement, Testimony, 1281.

Such were the methods used by Big Business in the sixties and in the early seventies. Eber Brock Ward was Big Business, the biggest of that period. His interest in ships, in lumber, in mines, in mills, and in sundry other industries, required the control of huge sources of capital. The financing of his enterprises was more difficult than their operation. And so it was that, at an early date, Ward realized the wisdom of affiliating with banking interests. Always a lone hand, he paid scant attention to institutions already in existence. He would organize his own banks, banks over which he would have control, banks which would finance his wide-spread activities.

At the time Ward was entering the steel field, he organized the Second National Bank of Detroit with a capital stock of \$500,000. With him in this venture were Lewis Cass, Stephen Beatty, and Zach Chandler, all prominent in business and in politics in Michigan. The bank was organized in August 1863, and opened its doors for business on the November following. The occasion was heralded far and wide as something new in banking. Punch was served at the opening, and, because of the splendid reputation enjoyed by the incorporators, Detroit's newest financial institution soon enjoyed prosperity. 15

15. Detroit Free Press, August 13, 1863; Silas Farmer, op.cit., 867.

Increased business brought about the doubling of the capital stock and the Second National became the city's first million dollar bank. So lucrative was the venture, and so useful to Ward in his business, that, three years later, he is

found on the Board of Directors of the American National Bank, also of Detroit. 16

16. Detroit Free Press, January 10, 1866.

Detroit was not to be the only place in which Ward engaged in banking. There is evidence to indicate that he became a stockholder and officer in numerous Midwest financial institutions, among the most important being his holdings in the Peninsular Bank at Marquette, which he had helped to organize prior to the Civil War, and which he found of value in connection with his mines and his shipping interests in that region. 17.

17. Detroit Free Press, June 11, 1859.

Eber Brock Ward depended upon no man for the functioning of his vast business empire. He was in full control of the steel mills, the glass works, the lumber mills, the salt blocks, the iron and silver mines, the railroads and the ships. Each of these activities was fully incorporated but Eber Ward held a majority of the stock. The only coordination between these various units of the Ward empire was possible through the old sea captain. There were none to tell him what to do, or when to do it. Holding companies were unknown in that day, but Eber Ward was a holding company in his own person, for a myriad of threads ran from his industries spread throughout the Middle West to his office in Detroit; and here, with unerring hand, he directed and controlled as efficiently as any business colossus of the present day. The age of small business enterprise

had passed. Mills had failed, glass makers had failed, railroads had failed because of lack of capital, because their owners had attempted to do business on a shoe-string. Eber Ward recognized this shortcoming, recognized it and determined that he would undertake nothing on a small scale. His shipyards, his steel mills, his lumber camps were all built to a size and with an investment heretofore unheard of. It has been said that after the Civil War

"Industrial organizations have tended to grow until, in many lines, they include vastly more than a single great factory, but a unified system comprehending many factories and making by-products and accessory products as well as major products." 18

18. Arthur M. Schlessinger, New Viewpoints in American History, 356

Eber Ward was the first to recognize this trend. In 1875 there was no other entrepreneur in the Middle West, or in any other part of the country, who held control over such vast resources, no other industrialist who possessed the financial means to build such an empire, no giant with the vision and the ability to center around his own person so many enormous undertakings. Eber Ward pointed the way, but those who were to follow, found the pace too strenuous for a single man to bear. The corporation and the holding company came into being for the purpose of carrying on the great task of industrializing the nation, the task which Eber Brock Ward had started so well.

Chapter XVIII
ADJUNCTS OF BIG BUSINESS

When, following the Second War for Independence, the Salem Packet, Captain Samuel Ward commanding, skirted the shoreline of the Great Lakes, stops were made at sparsely populated little settlements. Here and there, nature had carved a sheltering harbor and hardy pioneers had settled the land, settled it even before the surveyor's transit had run the boundary line, settled it and eked out a mere existence. It was after the Civil War that The Ocean under Captain Willoughby, stopped at these same locations, many of them now grown to sizable cities. Where there had been nothing but isolated farms, there were now densely populated districts and the traveler ^{saw} prosperous farm communities surrounding the belching chimneys which told of thriving industry in newly grown cities. Thus had times changed during four decades.

This growth of industrial centers, with which Eber Brock Ward had so much to do, had brought with it new problems. The industries required workers, and while Ward had brought many from foreign shores, thus stimulating immigration, he had drawn others from the farm communities. Men preferred work in the factories at regular daily wages to the uncertain returns of farming. For the first time the labor problem reared its head in the United States. The relationship between ^{the} employer

and the employee, the questions of hours of work, of conditions in the shops, of the amount of pay, began to be discussed. And thus were ^{appearing,} in those Civil War days, situations which have not yet been solved.

Eber Ward never forgot his life as a cabin boy on his uncle's boats. Despite his success, despite his great wealth, he remained close to those whom he employed, and there is no record of any serious labor difficulties in his industries. He paid wages which were in keeping with the times. No man, who worked for Eber Ward was ever permitted to go hungry even during periods of panic and depression. His favored Middle West had been opened to the settler, had grown from a wilderness to a section of teeming factories and fertile farm communities. It had taken much hard work to bring about the transformation, hard work on the part of thousands of pioneers, who had left their seaboard homes to build this new West. Eber Ward had been one of those pioneers, and he never lost sight of that fact. Before the Iron and Steel Institute at its Madison meeting, he expounded his philosophy when he said of labor:

"We are a working people, and when we see that labor has done so much in making the wilderness blossom and the waste places glad with civilized life, we should appreciate the privilege and duty of useful work. Each and all should do something for their own and for the common good. We have small room for drones or dignified, genteel idlers." 1

1. Eber B. Ward, Speech, MS., Wisconsin Historical Society.

That was Eber Ward. To him there was never any distinction between the man of means and the man who toiled in

his mills. He had consideration for all, treated all alike. John P. Sangor, who worked in the Wyandotte mill for many years, tells how Ward would visit the plant and would sit, during the noon period, on a great ore pile, swapping yarns with the men. There was no reticence when the owner of the mill came to the plant and, if a crude joke was told, Eber Ward laughed with the rest. He had come up from the boiler-room of a lake steamer. He knew men. The workers tell of his liberality. If an employee showed him some favor on one of his visits, or if a laborer performed a task especially well, it was Ward's practice to reward him with a crisp new five dollar bill. He always carried a supply of new bills for this purpose.

Anybody could secure employment in the Ward shops, says John Teeling, who made the moulds for the first steel poured at Wyandotte. Wages ranged from a dollar and a quarter to two dollars a day, but that amount of money, Teeling adds, allowed one "a mighty comfortable living". Experienced help received higher remuneration and, as the steel mills gained in importance, puddlers commanded five dollars a day, while boss rollers earned from ten to twelve. Of course, the days were long, twelve-hour shifts, but that was common in those early times. In farming, hours extended from sunrise to sunset. Steel-mill hours were fair enough when compared with the farmer's day.

At Wyandotte, Chicago, Milwaukee, and at Crystal City, as well as at Ludington and at Toledo, wherever Eber Ward located one of his factories, he built, likewise, a group of houses which his workers could purchase at reasonable figures

and on equally reasonable terms. There was no compulsion to buy, the men being permitted to live in rent either one of the Ward homes or another, if they so desired. But Eber Ward thought it desirable for men to own their homes. They made better workers, better citizens, he claimed, and they would not become drifters if they could lay claim to a definite piece of property. There is no record of Ward ever taking a home from his workmen because of failure of payments. When work was slack, payments were reduced; when the plants closed down entirely, payments were suspended until work was resumed. Willard Parker, employed in Ward industries for many years, wrote at the time of the industrialist's death:

"He encouraged his workmen to get themselves homes of their own and aided them by loans with which to buy lots and build homes upon them, and the number who have been made independent in their pecuniary condition by his kindly aid and by following his good advice, can be counted today by the thousands. By his death, laboring men of our country have lost not only one of their best friends, but the very ablest champion of legislation, that would secure them ready employment and the fullest reward for their labor." 2

2. Ward Scrap Book, Burton Collection.

The record indicates that this tribute to Eber Brock Ward was not overdrawn. He never forgot his early days, never considered himself superior to those with whom he had at one time worked, never isolated himself from the world, as so many, who were growing rich with him, were wont to do. To his friend, Fred Carlisle, he said,

"The best philanthropy of the age was that which afforded the greatest amount of remunerative labor to the working-man of the country." 3

3. Fred Carlisle, "Comparative Sketches", Michigan Historical Collection, XXII, 286.
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Eber Ward practiced what he believed. He employed more men than did any other industrialist of the period, and he enjoyed the fullest confidence and cooperation of those whom he employed. In his plants there was never any question as to who determined the policies. Interference from either associates or employees was not to be thought of. His word was law. Things would be done as he ordered. He managed his plants as he saw fit. He was a "rugged individualist" in every sense of the term.

During the Civil War, Ward was a staunch supporter of Abraham Lincoln, a strong believer in the emancipation of the slaves. He contended that the negro had as much right to his hire as had the white man, and, as was his custom, he put his convictions into practice by ^{employing} a crew of negro workers for his Wyandotte Iron Mills, a move for which he was severely criticized in some quarters. There were even those who made threats against his life unless he would discharge the colored workers forthwith. To threaten Eber Ward was futile as an advertisement which he inserted in a Detroit paper indicates.

"I propose now and henceforth to employ just such persons to do my work as I choose. If I find laborers scarce and wish to employ a black man, or a horse, or an ox, I shall do so and shall not ask anyone for the privilege." 4

4. Ibid.
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Eber Brock Ward was an individualist. He conducted his widely-diversified industries as he wished, and did a good job of it.

A man, who always demanded what was his due, he was, nevertheless, exceedingly liberal with those about him. When his secretary, William Bronson, married, Ward thought he ought to take his bride into a new home and provided a loan of \$5000 for that purpose. Repayment was slow and Bronson states that Ward never asked about the loan, saying only, "If you like you may make payment when you like." 5

5. Owen vs. Potter, William H. Bronson, Testimony, 1470.

But if a man owed him money and it appeared that there was no intention of paying, Ward would stop at nothing in order to force a settlement. Ole Dustin, who piloted one of the Ward boats, tells the story of a man who owed the industrialist several hundred dollars in a business deal and who made no effort to clear the loan. When Ward pushed the issue the debtor pleaded poverty, a sick wife, and insufficient food in the home. This form of argument made no impression upon the empire builder. The loan had been a legitimate one. The services had been delivered as called for in the contract. The note would have to be repaid. By borrowing elsewhere the debtor was finally enabled to take up the note and then, Ward, after a careful investigation which proved that the claims as to poverty were founded in fact, turned back the entire amount together with a receipt in full. Business remained business to Eber Ward, but charity was not foreign to his soul.

During the panic of 1873, the scarcity of money hampered the Ward enterprises even as it affected all others. But Ward industries did not close down. The shops in Chicago, Milwaukee, Wyandotte and elsewhere remained under operation after the workers had agreed to accept payment for their labor in paper notes issued by and endorsed by Eber Ward. The scrip bore interest at the rate of seven percent and was to be redeemable some time after the panic. It was issued in denominations of two, five, ten, and twenty-five dollars, and it is a testimonial to the confidence in which Ward was held by all, that this scrip, nothing more than the industrialist's promise to pay at some future date, was accepted in payment by practically all of the business houses in Detroit, Milwaukee, and Chicago. Even the banks stood ready to redeem it at ninety percent of its face value. It is a matter of record that, when redemption was ordered several years later, the entire issue was retired at face value. The only losers were those who had little faith and who had disposed of their scrip at a discount to loan sharks. 6

6. Wyandotte, Past, Present, and Future, Centennial Edition, 1917.

Constantly Eber Ward urged that a combination of farming and industry was best for the development of the Middle West, and toward this end he worked. He was farsighted enough to realize that if all of the newcomers turned to farming there would soon be an overabundance of farm products with resultant low prices. He feared for the welfare of the settlers, and warned repeatedly that if all persisted in farming there would be "overproduction, low prices, poor, idle, and, as an in-

evitable result in the end, uneducated and vicious people". As a remedy for this situation, he added, "the best farming is where the best manufacturing stimulates skill". 7

7. Eber Ward, Speech, MS., Wisconsin Historical Society.

Farsighted was Eber Ward. In the seventies he saw clearly a situation which was to materialize fifty years later, and it materialized because others had not followed his example. Industries had been concentrated in certain areas. The pathfinder would have had them spread throughout the many country districts.

Eber Ward, who believed so strongly in the development of American industry because he saw in that development the future security and happiness of the workingman, was a strong protectionist. If American industry was to expand, a high tariff was essential, and his own experiences provided ample proof of the soundness of his position. In shipping, and in lumber, and in salt, a tariff meant little or nothing. In these fields Eber Ward could hold his own, with or without protection. But in steel and in glass the situation was different. He did not fear American competition but he could not undersell the European product. Steel rails from England were building American railroads and plate glass from England was being used for American store fronts. That was not creating employment for American workers, Ward argued. Even with the comparatively low wages then prevailing, his shops could produce neither rails nor plate glass that could compete with the English import in price, though it was its equal in quality.

There had been very little American manufacture until the days of the Jefferson Embargo and the tariffs of 1816 and 1824. Up to that time the settler in the new country was perfectly willing to make his purchases from Europe, sending his farm produce in payment. Four-fifths of the population, during this period, lived on farms under fairly comfortable conditions. However, during the Civil War, it became apparent that, as Ward had pointed out, with foreign markets cut off there was an overproduction of foodstuffs. It was also discovered that a nation at war required its own industries, could not depend upon importation for its needs. Yet, if American industry was to be developed, that industry would need protection from foreign competition during peace times. 8

8. See Arthur Schlessinger, op.cit., 247.

Eber Ward was convinced that a high protective tariff would encourage American industry without raising prices artificially as long as free competition was maintained. He stated his position clearly before the Iron and Steel Association.

"We ask Congress for the American market for American manufacture and while we are justly entitled to that field, we ought advocate and maintain perfect freedom and healthy competition amongst ourselves. Public policy, as well as our own interests, undoubtedly point in that direction, and we must not allow ourselves to be drawn into any measure, the tendency of which will be to incur public ill-will or government hostility." 9

9. Eber Ward, Speech, MS., Wisconsin Historical Society.

A farseeing man was Eber Ward, and a shrewd one. That he

was influential in securing favorable tariff legislation appears certain from the fact that he was closely related in business with many prominent public officials, leading among them being Daniel Morrell, his partner in steel, Senator Benjamin Wade, his wife's uncle, and Senator Zacharias Chandler, his banking associate.

From the early days of the republic there had been a strong free-trade movement in the country, a movement with which Ward, quite naturally, was not in sympathy. In talks, in newspaper articles, and in pamphlets, printed and distributed at his own expense, he fought the free-trade trend and he lived to see the protective tariff firmly established as an American principle. Attesting to his success in the fight against free-trade is the following newspaper comment:

"Eber Ward was largely instrumental in breaking up the American Free Trade League, which was an offshoot of the British league of the same name, and which was supported by contributions from that organization." 10

10. Detroit Tribune, January 5, 1875.

Before 1870 a forty-five percent ad valorem duty was levied on imported English steel rails. Since those rails could be manufactured in England at fifty dollars a ton, the duty brought the cost of the British product, delivered in New York, to \$72.50. At the same time American rails could not be produced for less than \$166 a ton. Under such conditions Eber Ward had small success in selling his rails, did sell them, in fact, only because he was a director on the board of so many

railroads. This differential explains why the Troy steel group, as well as other manufacturers under the patents controlled by Ward and his associates, were unable to continue in business. The tariff of 1870 levied a specific duty of \$28 per ton, which for the time being made little difference in the cost of English rails laid down at American ports. But the cost of steel rails, as they went into quantity production, gradually decreased and, since the tariff was not changed, it became proportionately higher on the British imports. By the time England was producing rails at \$30 per ton, the addition of the tariff practically doubled their price in America. Simultaneously the cost of the American rail was brought down to \$68.75 per ton, a cost which eventually dropped to \$37.13. The American steel rail could now compete on an equal basis with the imported product. 11

11. James M. Swank, Steel Statistics, 4; F.W. Taussig, The History of the Present Tariff, 68.

As for Eber Ward, his tariff fight had not been in vain, and he was completely satisfied because the price differential had been eliminated. The tariff on glass operated in much the same manner, and the industrialist's two basic commodities now found a ready market. It was Ward, who through the Iron and Steel Association made manufacturers conscious of the value and the desirability of a tariff, and caused his friend Carlyle to write:

"Perhaps no single individual in the United States did so much to dissem-

inate information on promoting home industry as did Captain Ward." 12

12. Fred Carlyle, op.cit., 290.

At an early date the fact that government greatly influenced the development of business became evident to Eber Ward and he considered it desirable to secure recognition in official circles by participating in politics, both state and national. He had been first a Whig, then a Democrat. Gradually his influence increased, until he became a potent factor in party councils. He was an active member of the National Manufacturers' Association, was repeatedly a delegate to its conventions, and often held important offices. It was through this organization, coupled with his own Iron and Steel Association, that he accomplished his most successful political results, for it was through these groups that he conducted his campaign for a higher tariff as well as for lower taxes. He held the concept of the modern industrialist that taxes were far too high and that they were high because of the superabundance of office holders. Less men on the public payroll, he often said, would cost less and would do better work. During the Reconstruction period he became especially bitter against the Congress, which he considered little more than a debating society, and there is a modern ring to his argument that:

"They see Congress spending months in profitless debate, while the great elements of national wealth are paralysed, and the people groping in the dark but seeking light that Congress in its superlative wisdom fails to shed on their future hopes. They demand active and effective legislation,

and they hope that a Republican Congress will not have to boast that their expenditures in some directions are less than the corrupt waste of the hated administration of James Buchanan. Their expenditures should be brought to the lowest limit compatible with the simplicity of true democracy." 13

13. Ward Scrap Book, Burton Collection.

"Active and effective legislation" to Eber Ward meant higher tariffs and lower taxes; and it meant, too, more printing press money for he was convinced that the greater the amount of money in circulation, the greater the prosperity of the country. During the panic of 1873, at a time when he was printing and signing his own scrip, he wrote to his friend President Grant, that:

"The surest way of restoring good times in business is by increasing the tariff every thirty days and watering greenbacks every time the tariff is increased. The tariff would add to the price of goods on hand; the increase in greenbacks would make their value more and more uncertain, so people would keep them moving as lively as if they were handling hot coals and we would have flush times." 14

14. Detroit Post, December 6, 1873.

Ward had proved himself a great industrialist, had even made a success of his banking ventures, but as a monetary expert his advice to the President was anything but orthodox. The control of economic forces was a simple matter, according to his way of thinking. If only Congress would act upon his suggestions.

Despite his peculiar monetary views, Eber Ward was rated highly in political circles and his advice was often asked. As early as 1869, an incident occurred which illustrates the close relationship between the Government and what was then "Big Business". It was at that time that John L. Hayes, a ranking official in the Department of State, sought Ward's advice on the selection of a speaker of the House of Representatives. Wrote Hayes to the industrialist in a Government franked envelope:

"The speakership is a matter of highest moment to our interests. The N.E. man would serve us as well as Dawes of Mass. I know him intimately and rely upon him and upon the practical questions touching our industry, more than upon any member from New England. He has the Boston notions, and is every way sound." 15

15. Letter in Ward MS., Burton Collection.

There is nothing to indicate Ward's reply, but the letter does indicate the position held by the industrialist in political circles. A staunch Republican, Ward was on Grant's first campaign committee, and engaged actively in securing votes for the soldier candidate. Despite the inefficiency shown by Grant in office, Ward unstintingly supported him for re-election in 1872. That was his way of standing by his friends. A revolt against General Grant was in the making, with Colonel Brown and Carl Schurz the leaders. When the movement had gained sufficient strength to call a convention in Cincinnati, an effort was made to secure Ward's support, but he not only refused to attend the gathering but uttered a blast through the Detroit papers that left no doubt as to his stand.

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He was quoted as saying:

"I will not attend the Cincinnati sore-head convention. I am mortified to think that my worst enemy should think so little of me as to believe me capable of deserting a party that has crushed secession, abolished slavery, and enhanced the credit of a nation after a most expensive war." 16

16. Detroit Advertiser-Tribune, April 18, 1872.

General Grant, Ward maintained, was a friend of the common people, a friend of the very men who had settled the West. The President would carry Michigan and, Ward believed, that there were not "one hundred men in Detroit who would vote against Grant". So incensed was he against those he designated as "sore-heads", that he spent his own money in the campaign, lent his name to the Grant ticket, and had the satisfaction of being chosen a Grant elector. The President, who had sought the Detroit industrialist for his cabinet during his first term, was so elated over this support, that he repeated his invitation, and urged Eber Ward to join the Cabinet as Secretary of the Treasury, a post refused because infant industries still required the ever-present guiding hand of their owner. "It is really too bad", Ward said to Bronson. He would have enjoyed nothing more than to take a hand in the government of the country. But for him, and for the country, it was probably just as well that circumstances did not permit of acceptance. Issuing greenbacks until they became "so hot people would think they were handling coals" would have been no great favor to the United States.

The fact that greenbacks drove hard money out of circulation during the Civil War was entirely satisfactory to Eber Ward and when, at the close of the conflict, there were those who began speaking of a resumption of specie payment, he was found in the opposition. He condemned the policy which would destroy greenbacks as rapidly as they were returned to the Treasury and, when President Grant in 1874, vetoed an attempt by Congress to increase the number of greenbacks in circulation, Ward began to wonder why he had spent so much of his own money on behalf of the Republican nominee during the campaign. But the shrewd industrialist realized that despite his efforts, resumption was coming and he attempted to soften the blow by arguing for a still further increase in the tariff. He reasoned:

"It is potent that no system of finance looking toward specie resumption will be permanently successful unless accompanied with such revision of our tariff laws as will insure a balance of trade and exchange in favor of this country. ...Our country is now suffering from the rapid contraction of the currency and consequent great contraction of business and enterprise, and it is vain folly to hope for any important change for the better while interest on loanable money remains at its present usurious rate for legitimate business enterprise." 17

17. Chicago Tribune, January 5, 1875.

On the question of borrowed funds, Ward knew whereof he spoke for it was common for him to pay an interest rate as high as twenty-five percent on money which he required in his various business ventures. If he could be certain of an in-

creased tariff and lower interest rates, he would have no further objections to the resumption of specie payments.

In politics Eber Ward soon discovered that a popular following was essential. Public opinion swayed officials even more than did the demands and suggestions of industrialists. So it was natural that Ward should attempt to assume a position through which he could influence public opinion. At the outbreak of the Civil War he decided to enter the newspaper field and for that purpose determined to gain control of existing newspapers, papers which had a strong following as shown by their circulation figures. A company was formed and the Detroit Advertiser and the Detroit Tribune were both purchased. A merger was effected, and J. E. Scrips was nominated editor of the newly formed Advertiser-Tribune. But Eber Ward soon found that he was not the controlling influence in this new organization. He was the largest stockholder but was, nevertheless, outvoted on many occasions by a combination of those opposed to his policies. Such a situation could not long endure. His word was law in his industrial empire; it would have to be law in any newspaper with which he was connected. Since he could not buy up those who were opposed to him, he sold his holdings to Editor Scrips, who was to rise to great heights in the Detroit news field and who was ultimately to become the founder of the potent Scrips-Howard chain. 18

18. Silas Farmer, op.cit., 683.

But selling his stock in the Advertiser-Tribune did not signify that Eber Ward had dropped his idea of controlling public opinion. The following year, in association with prominent members of the Michigan Republican Party, the principal stockholders being Senator Chandler and Ward, the Detroit Post was launched. The new paper was to represent the aggressive and radical elements of the party. 19

19. Tom S. Appelgate, A History of the Press of Michigan, 66

In order to secure immediate support for the Post, Ward and Chandler determined to secure the services of some national figure as editor. It was still the day of personal journalism, and a colorful individual with a versatile pen was able to build up a substantial circulation. It was during this period that Carl Schurz, who had become a leader among the German element of the United States and who was, at a later date, to become powerful in Missouri and national politics, was casting about for a position that would pay him a regular income. Schurz, then living in Watertown, was acquainted with Senator Chandler and, when he was approached by the Detroit leader with an offer so alluring that he could not refuse it, he agreed to assume the editorship of the new paper. Detroit was then a community of 75,000 people, of whom some 20,000 were Germans. Carl Schurz believed that his appointment had opened up a field where he could make a "secure living". 20

20. Claude M. Fuess, Carl Schurz, 139.

The new paper was capitalized at \$100,000 and was housed in a building that set a new standard for newspapers. The littered editorial rooms of the average paper were done away with. Noisy copy boys found no place on the staff. The noise and confusion of the typical city room was missing. With Carl Schurz as editor-in-chief, the Detroit Post, as the rival Free Press put it, was:

"...a new idea in newspapers. Everything is new. The counting room is arranged like a new style bank, and the editorial rooms are well carpeted, large and finely furnished." 21

21. Detroit Free Press, April 29, 1866.

Carl Schurz remained in his well furnished office for only one year. A luring offer from a more German community soon took him to a paper in St. Louis, took him to a position from which he was to climb to national fame. But by that time the Detroit Post was a going concern, and Eber Brock Ward blossomed forth as a full-fledged newspaper magnate.

In full realization of the power of the Fourth Estate, the Detroit industrialist took a keen interest in his latest venture, an interest that extended even to his newsboys for he saw in them potential circulation builders. Annually one of the Ward boats would take all of the newsboys of the Detroit Post, as well as of the News, which Ward had likewise purchased, on an excursion to Wyandotte, there to show them the Ward Iron Works and the Ward Dry Docks.

It will always remain a mystery how Eber Ward was able personally to manage the many enterprises in which he became

interested. His uncanny ability to select men who understood the business and in whom he could place implicit trust, is only a part of the answer. For this first great industrialist always kept in close contact with each of his varied ventures. He knew exactly what was going on at all points at all times. His ability to grasp details was often commented upon, and it was this ability which enabled him to carry on. In every sense Eber Ward was Big Business and he laid the foundations for even bigger Big Business which was yet to come. His diversified interests were, after all, interlocked, for each fit perfectly into the pattern which he had cut, each fulfilled its mission in the comprehensive whole. Tariff, greenbacks, politics and newspapers, all dovetailed quite naturally and very importantly with mines, and mills, and glass, and ships, and railroads. Eber Ward saw and controlled the connecting links and it was this that made him great in a field of business which had not yet been charted.

Chapter XIX

THE HOUSE ON FORT STREET

Headquarters for the vast Ward enterprises were located in Detroit. Here the Pathfinder of Big Business had two offices, one in the Moffat Building and a second on his beloved river front. Giles B. Stebbins, his amanuensis, held forth in the down-town office, while, one after another, retired lake captains were enthroned at the waterfront address. Gracing the rooms in the Moffat building were that first steel rail, which had been rolled at Chicago, and a huge block of silver ore taken from Silver Islet. In these offices was the nerve center of the industrial empire. But an atmosphere of the lakes prevailed at the river front. No signs of mines, or of mills, or of factories were to be found. Anchors from old boats, pictures of The Ocean, of the Salem Packet, and of the mighty Ketchum - reminiscences of life on the great inland waterways - these were the trophies in the river office. While frenzied finance was discussed on Griswold Street, while giant industries were planned there, yarns of lake storms, of ship wrecks, and of brushes with the Indians, dominated the talk in the rooms on the water front. After an especially trying day, it was Eber Ward's custom to wander toward the river and there, in an atmosphere which reminded him of a cabin on one of his ships, in/^aroom where he was always certain to find a group

of his old cronies, he would forget the worries of a modern industrial world and would lose himself in the memories of that distant past when the Middle West was but a wilderness.

It was well that Eber Ward had established this retreat on the Detroit River for all of his days were busy ones indeed. To the Moffat Building came daily reports of the progress of work in his far-flung plants; came, too, financiers, inventors, sea-faring men, those who sought the aid of the industrialist, those who had something to sell, those who had an idea for improvement in production, those who had fallen upon evil ways and who knew that Eber Ward would help them. All came to Griswold street and combined in making each day a busy one.

Nor did Eber Ward turn any of them away. He had time for all, would listen attentively to every proposal, accept this and reject that. It was this ability that made him great. And, of a morning, when he sat on the steps of the Moffat Building, reading the newspaper as was his custom, he was soon surrounded by a group of his associates and friends. Henry Haight, who was often one of these, remarked that "it wasn't always clear whether Ward's office was in the Moffat Building or on the steps outside".

While iron, and steel, and silver, and glass, and ships provided Eber Ward's principal activities, he found time, too, for lesser enterprise in and around the Detroit area. New inventions always intrigued him, even as had the experiments of Kelly and Mushet. It was in 1871 that he heard of a new type of loom, one which was to revolutionize the spinning industry. With Orrin W. Potter and A.E. Bissel he purchased the

manufacturing rights from the inventor. The new loom was said to be "an extraordinary invention" and the new corporation intended to produce the loom on a large scale, but other matters were occupying Ward's attention at the time and nothing came of the new device, even as nothing came of scores of similar inventions which Ward had purchased and then promptly neglected, because in practice they did not appear as satisfactory as he had anticipated. 1

1. Detroit Free Press, January 7, 1871.

His banking interests brought the industrialist into contact with various insurance companies and Ward soon found time to serve as a director of the Detroit Fire and Marine Insurance Company, a company which he had been instrumental in organizing for the purpose of carrying protection for his many plants and boats. 2

2. Detroit Free Press, January 10, 1871.

← The next step took him into the life field and in 1870 his name is found among the directors of the Life Association of America.

Eber Ward's interests in transportation were not confined to ships and railroads. Detroit was expanding rapidly, and better facilities within the city became essential in order that his workers would find an easy means for reaching his shops. Fort Street was growing into a main thoroughfare, extending as far southward as the thriving town of Wyandotte. Woodward Avenue had become the principal east and west artery.

Some means of transportation would have to be found for these two important streets, and Eber Ward proposed to find it. In 1859, he secured permission from the city council to construct a horse-drawn railroad on Woodward Street, and a few years later he was voted a franchise for Fort Street. The first street railways through Detroit were thus built by Eber Ward. 3

3. Detroit Free Press, June 11, 1859; June 7, 1866.

Even as his wide-spread industrial holdings had forced Ward into national politics, so his local interests forced him to enter the Detroit political arena. Always interested in taxation, which he wished to see reduced, it is natural that he should be found on the potent Board of Estimates. Membership on this body was by election, and the industrialist's popularity in his home city is evidenced by the fact that, at the election, he led the ticket as a member at large. He was likewise active on committees seeking the improvement of Detroit streets. Modern paving had not yet come into use, and Ward reasoned that the prevailing dirt roads could be vastly improved by the use of wooden blocks, an idea which was soon put into practice on Woodward and Fort streets. 4

4. Detroit Free Press, May 11, 1871; Silas Farmer, Op.cit., 161.

That Eber Brock Ward should become a staunch American patriot was but natural. His great-grandfather had been killed in the Revolution; his father and uncle had lost their boat and their business during the War of 1812; personally he had been perhaps the greatest influence in popularizing the Middle West and in changing the economy of the section from agriculture to

industry. He felt that the West was his country. He had done much to make it strong. He would do what he could to protect it. So it was that Commodore Perry was one of his favorites, and a picture of this hero hung in the lake-front office. When, in 1858, it was decided to stage a Perry victory celebration in Put-in-Bay, Eber Ward is found as one of the most active committee members, functioningⁿ as honorary vice-president on the day of the observance, and listed as one of the heaviest contributors. 5

5. Detroit Free Press, December 31, 1858.

The Fourth of July was always an important day for Eber Ward and his family. The spacious home on Fort Street was thrown open to the public, and such fireworks as could be procured, were displayed for the edification of the crowd. A large cannon was made in the Wyandotte shops, and when its roar was heard in Detroit, the residents knew that the Fourth was again being observed by the industrialist. It was Ward's belief that the day should be observed as a community event, and he launched a movement for a city-wide festival in Detroit. With a few of his wealthy friends, he footed the bills; and the city had what was probably the first community Sane Fourth observance in the United States. 6

6. Detroit Free Press, June 11, 1859.

It was during the Civil War that Eber Ward was enabled to give full play to his patriotic emotions. His shops were busy with war orders, and Ward was making money, making so much

money that he was to emerge as one of the richest men in the country after the conflict. But it cannot be said that this fact colored his patriotism, for he had always been a leader in any nationalistic movement. Repeatedly he urged President Lincoln to emancipate the slaves and, despite the "copper-heads," he had made his own position clear by employing negroes in his industries and paying them the same wage scale received by the white workers. It is said that he printed tons of advertising matter favoring emancipation and preaching the doctrine of equality, tons of material, prepared at his expense and distributed through his shops and industries. Eber Brock Ward was helping the Union war effort. 7

7. Ward Scrap Book, Burton Collection.

There was a strong "copper-head" sentiment in the Detroit area and enlistments were at a low ebb. To stimulate recruiting, citizens collected a fund from which bounties were paid to those who volunteered for service in the armed forces. Eber Ward headed the list of contributors with a donation of \$1,500. From the fund thus collected each soldier was to receive a bonus of fifty dollars. But despite this inducement, enlistments lagged, and Ward, through newspaper advertisements and circulars, advocated the adoption of drastic methods. He suggested that all industries be closed down and that, when they were reopened, only workers with families and those over the fighting age, be hired. In this manner, he reasoned, all others would be forced to enlist or starve. This ingenious method for increasing enlistments was not received with favor by the people

8. Ibid.

The Detroit situation was much like that which prevailed elsewhere. Voluntary enlistments were not producing the required fighting forces and Congress enacted the draft law. Funds from which bounties could be paid were no longer required. Lincoln was getting as many men as the army needed.

During the early days of the war there was always a question of whether England would align herself with the cotton of the South or with the wheat of the North. For a time it appeared as though the South would be able to consummate an alliance with the British. Fear spread through the North that in such an event an invasion from Canada might follow. Any such attack across the Detroit and St. Clair Rivers would prove a simple military operation, in the opinion of Eber Ward. There was no defense in the district, nothing to stop an invader. While Detroiters worried about the prospective invasion, Eber Ward determined to act. Single handed he proceeded to raise an army for the defense of the city. Belle Isle appealed to him as a suitable site for fortifications. He decided to build entrenchments there, and to mount ordnance. Men were needed to construct these fortifications, and Ward advertised in all Michigan newspapers, offering two dollars a day to all who would come to Belle Isle and join his army of defense. Two dollars a day was, in 1863, a high wage, but it was set "in the hope that it will secure sufficient men immediately". 9

9. Detroit Free Press, November 13, 1863.

The shrewd and patriotic Ward entrusted the task of securing workers to no subordinates. He determined to interview every man whom he hired in order to be certain that every man whom he employed was a loyal American. In addition, he supervised every phase of construction. Defending the Middle West was a serious matter. It was a task that could not be entrusted to others.

The work of fortifying the little island proceeded rapidly. First the trees were felled on the side facing Canada, and were permitted to remain along the shore where they fell, their branches functioning much as barbed wire does today in retarding an attacking force. Behind the fallen trees a large clearing was prepared in order that the enemy might be completely exposed while advancing. Beyond the clearing, earth-works were thrown up and rifle pits were dug. On an elevation on the south end of the island, cannon were installed, and Eber Ward, on fortified Belle Isle, was ready for the English invasion from Canada. 10

10. Ibid.

But the threatened invasion never materialized because wheat for the workers of England proved more important than did cotton for the mills. The British made no alliance with the South and the Detroit and St. Clair rivers remained as peaceful and quiet as ever.

As befitted the wealthiest man in the Middle West, Eber Ward built a veritable mansion for his large family on Fort Street. Located in a heavily wooded area, two blocks in extent,

the home was for many years the show place of Detroit. Five stories in height, the edifice towered above every other structure in the neighborhood, and ~~within~~ within its walls were to be found all of the conveniences then known to the civilized world. The main entrance and the reception rooms were located on the second floor which was approached by two sets of stairs placed under an imposing facade. Parlors, a large banquet hall, a well equipped kitchen, and an office for the man of the house, were to be found on this floor, while a large ball room occupied the third floor where there was also a library and an art room. Guests were housed on the floors above; and the servants' quarters, receiving rooms and the like, were located under the facade on the first floor.

Annexed to this show place was a large conservatory in which the proud owner raised some of the rarest plants. His niece, Mrs. Quimby, recalls oranges, and lemons, and grapes, that ripened in this conservatory; and she remembers, too, a banana tree, the fruit of which never ripened. Shrill were the cries of the Ward nieces and nephews when they were permitted to pluck some of the fruit from this conservatory orchard.

A huge barn was erected in the yard, for Eber Ward, as did most men of that day, loved horses. There were always a dozen or more thoroughbreds in his stables. Nothing pleased the millionaire more than when one of his horses won a race in the contests which were so often arranged. To these races all comers were invited, and it is recorded that the horse of some lowly laborer won more often than did the pampered entries of the millionaires.

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Eber Ward's interest in flowers and in the rare specimen which were to be found in his conservatory, were more than a rich man's whim or boast. The steel magnate had been interested in plant life from that day when uncle Samuel had brought the first fruit trees to the St. Clair. The Ward gardeners were always experimenting with some new specie, and Fred VanAlstyne of Wyandotte relates that Ward, returning from a trip to Europe where for the first time he had seen sugar beets, was so thrilled that he brought back some beet seed, had Andrew Folger plant and cultivate it, and achieved excellent results. It is/asserted/in Detroit that these were the first sugar beets raised in America.

Eber Ward, who had never enjoyed schooling, nevertheless collected the finest books of the day for his library and attempted the first Midwest collection of art objects. The Encyclopedia Brittanica ranked high in Ward's estimation; and his friends often found him pouring over some volume of this work. Here, he used to say, he could find in compact form the things he would have learned in school had he been privileged to attend one. Allison's History of Europe and Lippincott's Gazetteer of the World were two additional books in his library which he thumbed liberally whenever he found time. In the collection, too, could be found the works of Irving, Parker, Swedenborg, and scores of others. In the art room, many fine originals were hung, works of art which from time to time were available for inspection by the general public. 11

On the occasion of his sixtieth birthday, Ward's friends decided to add an original of the industrialist to the art collection. James M. Stanley had made a country-wide reputation by his portrait paintings of the American Indian and several pieces of his work had been hung in the Smithsonian Institute. The ranking artist in the United States would be none too good, said Aunt Emily, to do the portrait of her brother. She contributed a thousand dollars toward the cost of the painting, while Captain Goodrich, T.G. Bullin, Orrin W. Potter and J.J. Hagerman, all associated with one or the other of the Ward enterprises, contributed somewhat lesser amounts.

The birthday party was one that Detroit was to remember and discuss for many a day. The Fort Street mansion was filled with guests. The portrait was hung behind the wide double doors of one of the drawing rooms. It had been reproduced from pictures of the industrialist and Eber Ward was unaware of its existence. Special gas lights had been installed for the occasion by sister Emily, and when the double doors were thrown open, the life-size portrait of Ward, lighted by the glare of the gas lights, brought a gasp of astonishment from those assembled and, reported a Detroit paper, "Captain Ward for once in his life gave visible tokens of being in a melting mood". 12

13. Detroit Free Press, December 27, 1871.

In a frame of wood, overlaid with gold leaf, appeared, in full size, the portrait of Eber Brock Ward, dwarfing the background which presented a kaleidoscopic review of his active life, and which had been ingeniously worked in by artist Stanley. The

picture was six feet wide and nine feet high. There, in the background, were the Newport marshes with a little boy trapping muskrats; there, too, was the lighthouse at Bois Blanc in which Ward had been assisting his father for a short period. A small lad in a fishing smack recalled the days when young Eber spent his leisure fishing on the St. Clair. And there was a picture of Emily, floating down the river on a raft which was tied together with strips of clothing. But dwarfing all but the figure of the industrialist, were scenes of equipment for boats, machinery for factories, houses for workers, and the mills at Wyandotte and at Chicago. It was all a stupendous spectacle, one that retold the active and varied life of Eber Brock Ward. Today the portrait hangs in the State Capitol at Lansing.

Yacht-racing vied with horse racing in Eber Ward's leisure-time pursuits. He had been in competition with his sail boats and with his steamers; and now, as he grew older, he was content to race his yachts on the Lake St. Clair course. There was always a substantial wager placed on all of these contests, for this man, who was never known to utter a vulgar word and who had never tasted a drop of liquor, was a gambler in his recreation as he was in his business. In order to be near his yachts, he had a summer home on Lake St. Clair, a summer home which was only slightly less pretentious than his town house. It appears to have been characteristic of these early millionaires to attempt to establish their worth to the community by erecting expensive, ornate mansions. Eber Ward was doing in his Middle West what Jay Cooke and others of his kind had done in the East.

So large an establishment^s as the Wards were maintaining naturally required a score of servants. Jessie Barnett was the lady hired for the purpose of overseeing the household. Her functions included the employing of all required help, the planning of meals, and, often, the rearing of the Ward children. Jim Barnett, who had been employed at Wyandotte and who had lost his voice, was the coachman, and was likewise in charge of the outdoor help. ~~But~~ When Mr. and Mrs. Eber Ward rode in state behind a pair of the finest horses in the Midwest, Jim Barnett handled the reins.

Those who lived in that mansion on Fort Street were far from happy. When Ward, in 1838, took Mary McQueen for his wife, he was a poor but ambitious lake captain on one of his uncle Samuel's ships. He never cared for married life, would perhaps, as he often said, never have married if his friends had not urged him on. Seven children issued from that marriage, five of whom were to outlive their father, a father who scarcely knew them because his business took him away from home so much of the time. First it was his shipping, later his industries, that called him to distant parts of the Middle West. The children grew to adulthood without the benefit of a father's guidance. This short-coming the industrialist tried to offset by keeping his family liberally supplied with funds, a practice which made the mother's task no easier since the children always had what they wanted when they wanted it. Both his children and his wife became strangers to Eber Ward and, in 1869, Mary McQueen Ward sued for and received a divorce from Eber Ward, then at the

height of his career.

While visiting at Conneaut, which at one time had been home to Eber Ward, he met Catherine Lyon, niece of Senator Benjamin Wade. Catherine was twenty-seven years old at the time, while Eber Ward was thirty years her senior. Despite this difference in ages, an attraction developed and, two months after Mary McQueen had received her divorce, Catherine Lyon became the second Mrs. Ward. The mansion on Fort Street had a new mistress, one who soon showed the people of Detroit that she knew what there was to know about entertaining as well as about spending the money which her husband provided so lavishly. 13

13. Owen vs Potter, Record, 7, 351; Thomas Lyon, Testimony, 277.

Mary McQueen Ward, whom "Aunt Emily" described as a nervous, excitable woman, had been ill for many years and passed away shortly after securing her divorce. The five children by that marriage continued to live in the Fort Street home where they were joined by two additional children born to Eber and Catherine Ward.

His children never reached the heights which their father had wished and planned for them. It was his hope that they would be able to carry on the industries which he had founded, and so extensive was his empire, that he hoped to place each child in charge of some one industry. But that was not to be. Several of the children appeared inept. Frederick committed suicide. Henry had no interest in business. Neither had most of the others. Only in Charles did Eber Ward find hope. Charles was placed in the Second National Bank in Detroit at a salary and

bonus of fifteen hundred dollars a year. For one year Eber Ward was happy and proud, for Charles was doing well at the bank. But when the time was up, Charles collected his fifteen hundred dollars, resigned his position, and, is said to have spent his earnings within three months. 14

14. Owen vs. Potter, Emily Ward, Testimony, 1046.

Once again Eber Ward tried. Again he set Charles up in business, but again the young man failed. The father became utterly disgusted, refused to pay the bills, gave up all hope of turning the reins of his business over to some member of his family. None of the sons was capable of carrying on. Said Eber Ward to Bronson, "My boys will never desire anything but fast horses, a paper kite, and me to furnish the money." 15

15. Ibid.

Eber Brock Ward, who had been successful in every business endeavor, could not make a success of his family life. He had spent more than \$150,000 in an effort to establish his children and he had failed. He now did the only thing there was left to do. He set aside a sum of money for their welfare, and arranged it so that they received only a stipulated amount each month.

His children by his second wife were too young to share in the business during the industrialist's life. Eber Jr. was to become a manufacturer, but never one to equal his illustrious father. His daughter Clara lived for years, spending the Ward

millions in Europe, marrying first a title and then a gypsy musician, and repeatedly making the headlines in the sensational press of America. There were none in the immediate family to carry on the work of Eber Ward.

More fortunate was the empire builder with his relatives. Orrin W. Potter, cousin and product of "Aunt Emily's" school, was from the first one of Eber Ward's trusted employees. He first managed the North Chicago mill and later became President of the enlarged Chicago steel group. Orrin's brother John was in charge of the work at Wyandotte, while Thomas R. and John B. Lyon, brothers of the second Mrs. Ward, proved excellent businessmen. The first named supervised and managed the large lumber holdings on the Saginaw and at Ludington, while John managed the mills at Toledo. But that was all. For the remainder of his trusted employees Eber Ward was forced to depend upon his old ship captains, or upon new men, whom he selected with meticulous care and all of whom developed into high grade executives.

Ward charities came to be known throughout the Middle West. Wherever there was suffering, Eber Ward took the lead in organizing relief committees, in making contributions, and in exhorting others to do likewise. His charities were not local in nature, but covered suffering in all sections of the globe. So it was that when the potato famine caused much hardship in Ireland during the sixties, Ward, whose ancestors had been in Ireland, organized a committee in Detroit for the purpose of raising relief funds. 16

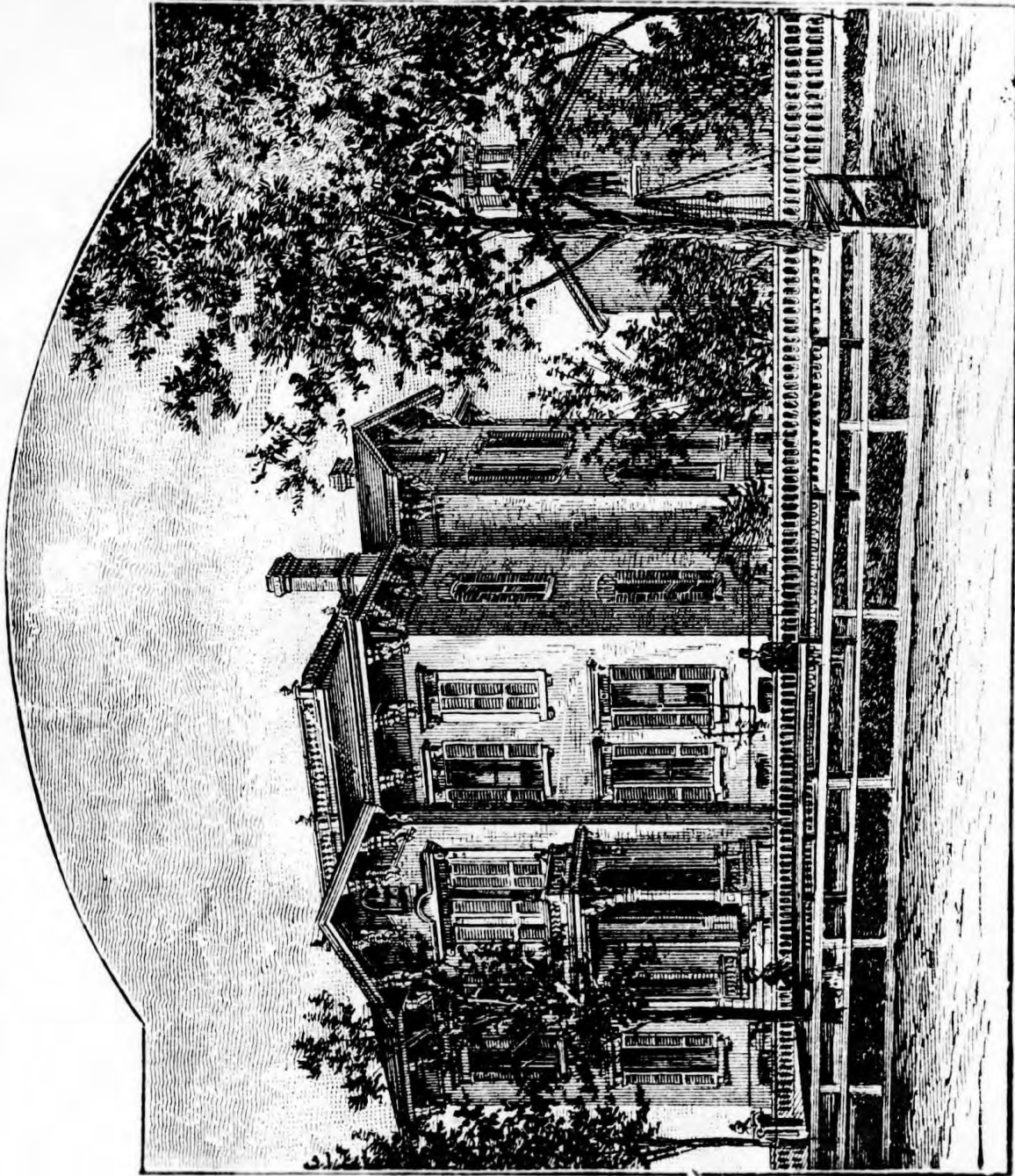
And after the great Chicago fire, when Mrs. O'Leary's mythical cow was charged with starting the conflagration by kicking over a lantern, Eber Ward was again in the vanguard with a donation of \$5000 for the Chicago sufferers. After Bismarck had humbled the French, and there was a shortage of food in France, it was Ward who headed the list of Detroiters who contributed to alleviate that suffering. 17

17. Detroit Free Press, February 14, 1871; October 10, 1871.

This philanthropist's activities extended beyond the making of financial contributions. Besides providing the annual outing for his newsboys, Ward secured a building in central Detroit which was to serve as a newsboys' club. Here he installed a fine gymnasium, ample showers, reading rooms, and complete facilities for the carriers of the city, for boys who worked on the Ward papers as well as for those who worked for his rivals. His interest in youth was further evidenced when learning that the organization was to be dispossessed because of lack of funds, he subscribed \$25,000 toward the purchase of the Young Men's Society building. The Young Men were thus assured of their headquarters. 18

18. Detroit Free Press, October 7, 1866; February 19, 1872.

Emily Ward, the sister who played so important a part in her brother's success, was now living in a splendid home directly across the street from the Ward mansion. Although she had given up her school in Marine City in order to be near her brother, her interest in education did not lag. She be-



DETROIT RESIDENCE OF EMILY WARD

came active in the founding of the Michigan Female College at Lansing and Eber Ward, as well as his associate John Owen, became a regular contributor to this newest venture. 19

19. History of St. Clair County, Michigan Historical Collection, VI, 285.

Nor did Eber Ward neglect the churches. Himself a Unitarian, he was exceedingly liberal minded and aided all denominations with a lavish hand. Because he evinced a keen interest in spiritualism, a cult which was in great vogue at the time, there were those who charged him with being a spiritualist. There is no proof that such was the case. In discussing spiritualism with his sister Emily, he remarked:

"A spirit in the body is better than one out of the body in all business transactions. Anyone who relies upon the representation of spirits will be ruined financially. There are as many liars on the other side as there are here." 20

20. Owen vs. Potter, Emily Ward, Testimony, 1086.

One day, while discussing the subject with his pastor, Rev. Calvin Stebbins, Ward mentioned a particularly well known spiritualist and commented that "he is a wonderful medium and a wonderful liar." 21

21. Owen vs. Potter, Calvin Stebbins, Testimony, 1048

Here was ample answer for those who attempted to belittle the great industrialist. While he was always searching for more information, he was a hard realist who decided every

question upon its merits.

Though not a regular church attendant, he did contribute liberally to all of the churches in the towns which surrounded his industries. At Crystal City, to which place he brought many English glass-makers, he established an Episcopalian Church directly across the street from the works. The Church is functioning today and is unique in that it is still company owned. At Wyandotte, Ward donated land for five different churches; and at Milwaukee, he provided lots for Catholic and Protestant churches alike.

A severe task-maker was Eber Brock Ward, but he was liberal in his donations to charities and to worthy organizations. The idea of establishing trust funds to carry on philanthropic work had not yet been adopted by rich men, but the great industrialist, in his own way, determined what he considered deserving causes and contributed a large share of his wealth to their support.

Chapter XX
DEATH INTERRUPTS

Eber Brock Ward, despite the vigor with which he pursued his varied activities, was never a healthy man. The malaria, which he had contracted in the St. Clair marshes in his childhood, had weakened an otherwise strong constitution. The great industrialist knew well his physical shortcomings but paid scant attention to them. He believed that it was his destiny to give of the best that was in him as long as he was able. Beyond that it was not for him to plan.

He considered the industrialization of the Middle West his particular mission in life, and he followed that mission relentlessly in good days and in bad. By the close of the Civil War his hopes had been realized. The little, scattered villages which had been confined to the shoreline of the Great Lakes - his Great Lakes - had grown to prosperous cities. New communities had sprung up in the hinterland, new settlements which provided the farm produce required by the densely populated cities, new settlements which, in turn, were clamoring for the manufactured articles which were coming from the growing industries in the cities. Here was a balanced economy, said Eber Ward, an economy that would make the Middle West the most productive and most prosperous section of the great United States.

Because his was so important a role in the development of the north-central part of the country, Eber Ward can be pardoned for the pride which he took in it. Repeatedly he would call attention to the harmonious relationship existing between factory and farm. He had watched it all grow from a wilderness, and he called it good. The satisfaction which he felt in his soul shown through a talk he delivered in Madison in 1868.

"I have sailed along the wild shores of your then new territory, landing at Milwaukee when a few rude cabins were the pitiful beginnings of what is now a large and beautiful city. I landed flour in a small boat lying at the mouth of the Chicago River when there were only a few houses, a ruinous warehouse, an old fort, and a miserable so-called hotel, on the open prairie, where now rises another great city. I have always been glad of these my toils and trials, since they earned me the privilege of somewhat appreciating the laborious life of the pioneer." 1

1. Eber Ward, Speech, MS., Wisconsin Historical Society.

The life of the pioneer had been the life of Eber Ward. He might have added that he had seen the same transformation at Toledo, at Detroit, at Cleveland, and at many other Midwest points. He had grown up with the country, had done his part in directing that growth. And he had done that because he could live no other way. Indifference found no place in his life, neither did indolence. He had to be active in order to be satisfied. He was a builder. To Orrin Potter he wrote at the time the first steel was being rolled:

"I want to be busy in some decent and useful way, and when the time comes that I can no longer work with hand or brain, I pray that my life on earth may cease." 2

2. Eber Ward Scrap Book, Burton Collection.

And busy he was throughout his life with both hand and brain, busy in bringing civilization to a wilderness.

Eber Ward's time came all too soon, came when he was at the very height of his power. It was during 1869 that he was in New York in connection with one of his business ventures. Mrs. Ward had accompanied him on the trip in order that pleasure might be combined with business. The business was completed, but the pleasure had to be foregone since the great industrialist suffered a severe attack of erysipelas. As soon as possible, Mrs. Ward returned to Detroit with her husband, but they had no sooner reached home than he was felled by a thrombosis while sitting quietly in his drawingroom. It was there his wife found him and for three weeks he lay in bed, one side of his body completely paralyzed, his face distorted, his voice gone. Leading doctors in Detroit stood by. "Aunt Emily" came from her home across the street to bleed her brother. Recovery set in slowly. For the better part of that year he remained an invalid, his muscles useless, his speech thick. But gradually he regained his full powers, and became again the man of industry. 3

3. Owen vs. Potter, Emily Ward, Testimony, 1079, 281.

Through it all Eber Ward was the most patient of sufferers. Clean living habits and a strong physique helped him through

his illness, made him as fit as ever. Realist that he was, he recognized the symptoms, knew that his life was now doubly uncertain. He was thankful that there was time to place his house in order, and to Jacob Howard, his old associate and confidant, he expressed the philosophic thought, "If I have got to put out I may as well fix matters up". 4

4. Owen vs. Potter, Orrin W. Potter, Testimony, 1041.

But Eber Ward's span of life was to continue beyond the period required merely to "fix up matters". He soon came to be his old self and plunged into work as heavily as before. It was after this illness that he enlarged his Milwaukee and Chicago steel plants and built the plate glass factory in Missouri. He was still the builder. He could not stop. He would keep going until death called him.

It was in 1874 that the Lake Superior Iron Company first approached Ward with an offer to purchase his New England mine, which was adjacent to its own holdings. The panic had depleted Ward's reserves, for during the dark period of 1873 and 1874 he had not shut down his plants but had kept them open in order that his faithful workers might not starve. He had issued thousands of dollars of his own scrip which would have to be redeemed. The sale of the New England would provide the cash which he required, and since the mine was not important to his steel interests, he determined to sell.

The New England was a separate organization, in no way connected with any of his other ventures. To purchase it, he had affiliated himself with John M. Forbes and John. W. Brooks.

-Eber Ward held slightly less than one-half the stock, and because of this fact he required the sanction of either Forbes or Brooks to complete the sale. But the mine had been a paying proposition and neither of the partners would sell, despite the fact that Ward offered more than the stock was worth. 5

5. Ibid, 1041.

It was a week after Christmas, a day on which Ward had observed his sixty-fourth birthday in the house on Fort Street, that a meeting of the three partners was held in the Moffat Building office. Some point of discussion required certain documents which were available only in the Court House. At ten-thirty in the morning, on that cold January 2nd, Captain Ward put on his overcoat, told Forbes and Brooks to wait, and proceeded to the Court House for the necessary papers. But Eber Ward never returned to that office conference. On busy Griswold Street, near the foot of Eayne, he collapsed. Willing hands carried him into the banking offices of E.K. Roberts, three physicians were rushed to the scene. But it was too late. Death had claimed for its own the great pathfinder of American industry. 6

6. Detroit Free Press, January 4, 1875.

News of the death came as a blow to the entire Middle West. The giant, who on his own shoulders, had carried the burden of so many business enterprises, was no more. There was none to take up that burden. Had the vast Ward holdings been centralized and organized into one large company, the blow

would not have been so great. But the interlocking business organizations of a modern day were then unknown, and in the mills at Wyandotte, and at Milwaukee, and at Chicago, men paused at their work and wondered, wondered who would now take up the task which the founder had done so well. In the sand-pits under Knob Hill and around the red-hot furnace at Crystal City where sand and silicates were being fused into glass under a temperature of 2200 degrees, the workers gathered in little groups to discuss the import of the news. Eber Ward had kept them employed even when times were hard. Want and hunger were unknown in Crystal City. What would tomorrow bring? In the sawmills on the Saginaw and on the Pere Marquette and around the salt blocks, hardy woodsmen looked at each other in silence, not believing the news which they had heard. Their world would never be the same without Eber Ward. And out on the vast expanses of the five inland lakes, weather beaten captains told their brawny crews that the man who had ruled the Great Lakes for so long a time, was no more, and they retold the stories of the old mariner's prowess on the seas. So the report traveled from Buffalo and Conneaut in the East to Sault Ste. Marie and Silver Islet in the West, and everywhere men said that the passing of Eber Ward had left a void that none could fill.

From all of those places which Eber Ward had visited when they were little hamlets and which he had done so much to build into prosperous towns, came throngs of people to the house on Fort Street, to the Fort Street Presbyterian Church, and to Elmwood cemetery, to pay their last tribute to the man

for whom they had toiled and whose passing brought fear to their hearts. Wyandotte went into mourning. Special trains brought most of the population to Detroit. From Milwaukee, from Toledo, from Chicago, from Ludington, and from St. Louis came large delegations. Senators, governors, "Big Business" men, were the pall bearers that carried the great industrialist to his last resting place. The workers from the mill and from the smelter at Wyandotte marched in double file before the casket. Members of the Board of Trade and of the Common Council, as well as many corporation officers, formed the guard of honor. Dr. A.T. Pierson said the prayer at the Fort Street home. Rev. Calvin Stebbins, eulogized at the Unitarian Church:

"There is no man left that I know of who can do what Captain Ward was doing to the last day of his life, and we have never had a man who has done so much genuine work for our western country." 7

7. Detroit Free Press, January 7, 1875.

Most of the people of the western country agreed. From Chicago had come Rev. Robert Collyer, an intimate friend for many years. His was the task of saying the last words at the grave in Elmwood, and he chose for that final tribute:

"Thriving communities stand today as monuments of his vigor in commercial enterprise. Thousands of people have been for years dependent in no slight degree upon the decisions of his judgment. A score of industries have found or felt the stimulation in his sharing in their founding or in their development. Great establishments, scattered in a dozen towns, exist today as the creatures of his foresight and skill." 8

8. Detroit Tribune, January 7, 1875.

As the great gathering, which had come to these last rites dispersed, there was many a wet eye, many a head hung low. Industry and labor had lost a true friend. The great Pathfinder was no more. Today, Eber Brock Ward rests on the family lot in Elmwood, surrounded by those with whom he lived and labored. In the center of the plot stands a stone obelisk bearing the legend which fitted the man so well:

"A gem is not polished without rubbing
nor a man perfected without trials."

The final will, which had been drawn in August, was characteristic of the man. His children had been his greatest disappointment. None of them had reached the stature of their father, none could carry on his work. They had failed when given opportunities in business, had squandered wealth with complete abandon. So in his will, Eber Ward set aside two hundred dollars a month for each of his children, an amount which was to be paid from his estate and which was to be increased only if the executors felt the need existed. And then, shrewd to the last, it was stipulated that:

"This limitation is made as in my judgment it will tend to their advantage, but in no case are they to anticipate any payments." 9

9. Eber B. Ward, Will, Record, 2.

The mansion on Fort Street was likewise left to the children and to his sister Emily, who was to share all other bequests on an equal basis. The vast Ludington holdings, saw-mills as well as salt blocks, were bequeath^{ed} outright to Mrs.^{Catherine} Ward and to the children by the ^{second} marriage. After the death of "Aunt Emily",

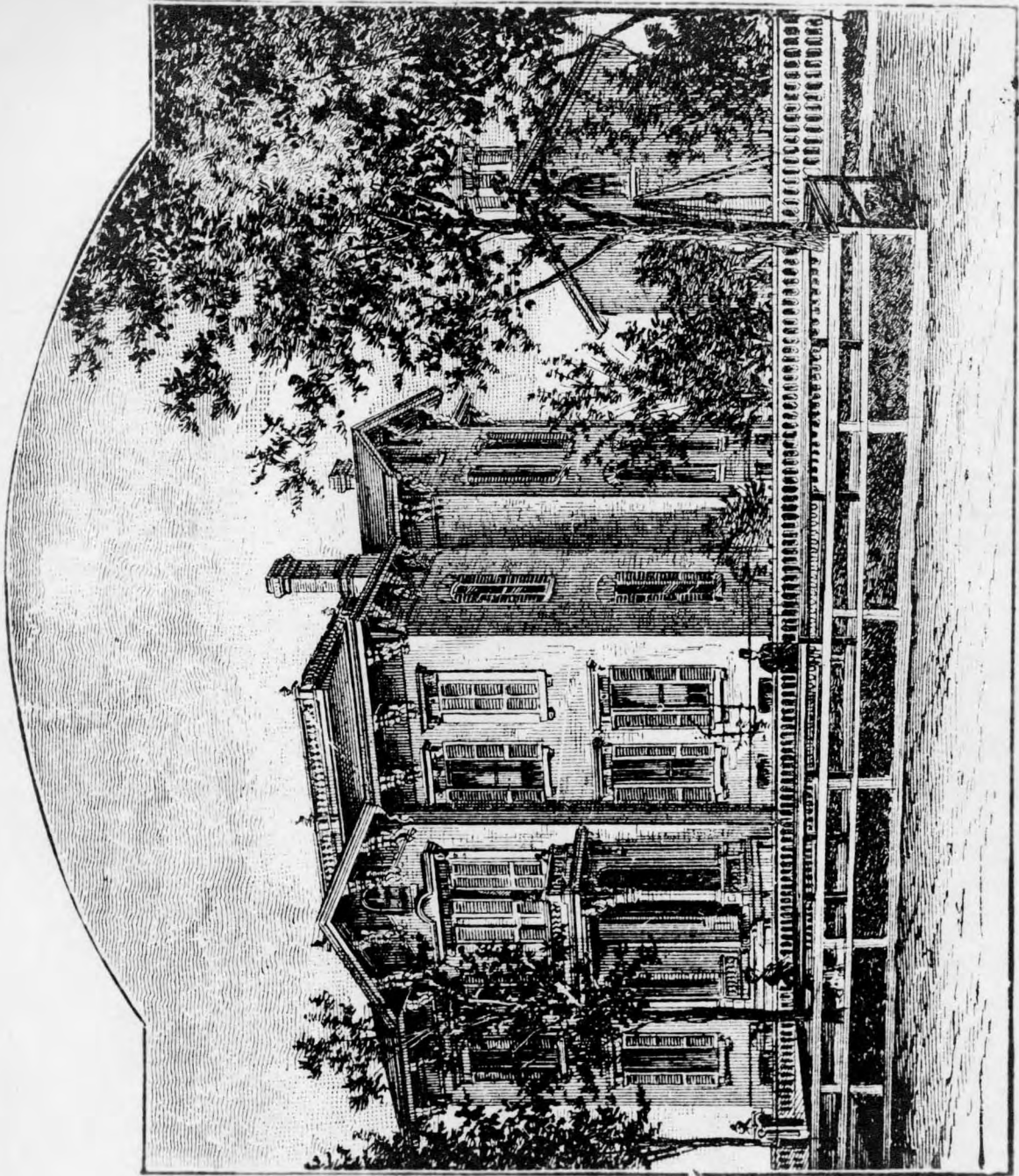
the balance of the estate set aside for her was to go to the nieces and nephews, eight in number, the children of sisters Sally and Abbie.

The cash value of the estate cannot be set definitely. Some said it was in excess of ten million dollars; others thought it slightly less. So far-flung and diversified were the holdings, so involved the business network, that no certainty existed. But an enumeration of Eber Ward's interests, coupled with a listing of the official positions held by him at the time of his death, indicates that there is justice in the claim that he was the richest American of his day. There were furnaces and mills at Wyandotte, Chicago, and Milwaukee; there were iron mines at Iron Ridge and in the Upper Peninsula; shipyards at Marine City, at New Jerusalem and at Wyandotte; silver mines at Silver Islet and in Utah; copper mines in Arizona; and a lead mine in Missouri. There was the glass works at Crystal City and the smelters at Wyandotte. There were the Pere Marquette and the Burlington & Southwestern railroads, to say nothing of interests in the Louisiana Central and in the Chicago & Milwaukee. Eber Ward was the sole owner of twelve fine steamers on the Great Lakes. He held 400,000 acres of Michigan pine lands, 25,000 more in Wisconsin, and an additional 10,000 ~~acres~~ near New Jerusalem. He owned five thousand acres of good farm land in Iowa with another two thousand at Crystal City. Added to all this were large real estate holdings in Detroit, Milwaukee, and Chicago. All were incorporated as separate companies, and in practically all of these Eber Ward held the controlling interest.

At the time of his death, this pathfinder of American industry was president of the Flint & Pere Marquette; Burlington & Southwestern; Wyandotte Rolling Mills; Milwaukee Iron Company; American Plate Glass Company; Detroit Copper Mining Company, Eureka Iron Company, and the Louisiana Central Railroad. At the same time he was treasurer of the North Chicago Rolling Mills Company and a director of the Second National Bank of Detroit and of the Silver Islet Mining Company, to mention only a few. It was the wonder of Orrin W. Potter, Tubal C. Owen, and George Wyman, his executors, how any one man was able to control the destinies of so many varied enterprises. But control them Eber Ward did, and efficiently at that. 10

10. Ibid, 8.

What the exact financial status of Eber Ward was at the time of his death is not relevant. He must be measured by what he accomplished, not for himself, but for the community which he loved so much. In any such rating this great industrialist ranks high, higher than any other man of his period. In his youth he had set out with a definite objective in mind. That objective was the development of the Middle West, the merging of an industrial with an agricultural economy in the north-central states. His entire life he devoted to this one purpose. Other facts undoubtedly contributed, but Eber Ward lived to see his most cherished hopes realized and time was to demonstrate that he had built and reasoned well, for the diversified industries of the Midwest have cushioned that section against the worst effects of financial depressions, have made it one of the



Fort Street Residence of Emily Ward

most important centers in the United States. The Wyandotte Press reflected the opinion of the general public of the day when it wrote:

"We do not believe that any other man in this or any other country, ever personally managed business interests of such number and magnitude, or was capable of such continued mental strain, as Eber Brock Ward." 11

11. Wyandotte Press, January 5, 1875.

He was a man of strange extremes, this industrial giant of the Middle West. One moment cold and aloof, at another he would fly into a high rage at those who failed to do his bidding. Shrewd to the point of uncanniness in his business dealings, he was credulous and believed implicitly in his friends. But once a friend proved untrue, he was a friend no more. Persistence was a strong characteristic, and to suggest to Eber Ward that a thing could not be done, was for him to do it. Yet, of his own volition, he would change his mind on the slightest provocation, as when he determined that steel was to be rolled at Chicago and at Milwaukee rather than at Wyandotte.

A pioneer, a child of the frontier, Eber Ward was above all an individualist. None there were who could tell him how. His mind was self-acting, and he required no reason but his own for his words and his deeds. His individualism was intense and self-dependent, and the texture of his will was as firm as the iron in which he dealt. He was vindictive, yet he was forgiving, and he was the first to right a wrong.

William Bancroft, chief customs officer at the Port of Huron, had been Eber Ward's friend for many years. On one

occasion a Ward boat was seized because of some infraction of the rules. Ward stalked into Bancroft's office, declared, "We have been friends but now we are enemies", and carried on the feud for ten years. Then, one day, he again walked into the office, admitted that he had just learned that his old friend had been accused unjustly, apologized and added, "I am glad to say that I was wrong". Ward could have no motive for this act. He was merely doing what his own, inherent love of justice compelled him to do. 12.

12. William L. Bancroft, op.cit., 343

That was Eber Ward. A man of great personal courage, defiant, yet always ready to admit a wrong.

Viciously high tempered, passionate, right or wrong, he would call no man master. But he was not a difficult man to please. He demanded absolute loyalty and attention to duty, and any man who gave him these could command Eber Ward. Perhaps it was just fortunate, perhaps it was the uncanny insight which Ward possessed, but it is agreed that he seldom misjudged a man. In all instances his associates were men of high intelligence and ability who brought to the many business undertakings those qualities and that knowledge which the great industrialist did not possess. And because they served him well and faithfully, he rewarded them liberally. Eber Ward's men became the leaders of Midwest industry in the decades which followed his death.

In an age when there were few millionaires, when organized philanthropy was unknown, Eber Ward felt that he held his huge

fortune in trust for the entire community. He felt responsibility for the welfare of his workers and refused to close his factories during the worst panic which the country had suffered. Said his associate, L.T. Remer:

"Mr. Ward has, by personal sacrifices, kept his extensive enterprises moving this winter that poor men might live." 13

13. Detroit Free Press, January 3, 1875.

"That free men might live" he gave liberally to every charity which he considered worthy and, through his sister Emily, he aided scores of young people in their search for an education. An open-handed and a generous man was Eber Ward.

Willard Parker, who was associated with the industrialist for many years, considered him "one of the ablest men of the country", and David Hughes of his legal staff recalled that "Ward always displayed great shrewdness and ability in business matters and was considered a man of strong sense and unusual practical wisdom". The Rev. ^{Robert} Collyer thought that "the power to do things was the first grand quality" of his old friend.

Old Captain David Gallagher, who was Ward's general manager at Marine City and who loved the shipping master as a son loves a father, nevertheless reminisced that at times "he was the devil". The captain was thinking of those times when things went amiss in the shipyards or out on the lakes and when the master lost patience even if the elements themselves were to blame. For Eber Ward did not know how to accept reverses.

Progress would have to be made in every undertaking, there could be no retreat. Because he was impatient of words, because he tolerated no rivalry, because failure was never in his thoughts, there were times when he displeased those about him, times when he inflicted wrong and perhaps humiliation upon others. There were times, too, when he was thought grasping and even unjust. A man with such diversified interests, a man whose prime object in life was to get things done, would of necessity make mistakes, would cause hardships. And Eber Ward was no exception. But the good that he brought about far outranked and outweighed the bad. His mistakes were never serious, always corrected. His achievements were of such magnitude as to live after him. Bancroft, who knew the shipping king so well, pays tribute to his memory when he writes:

"It was he (Ward) who brought to the fore, expanded, and utilized, and distributed, the diversified and matchless resources of Michigan." 14

14. William L. Bancroft, op.cit., 341

Bancroft was a Michigan man, knew only what Eber Ward had accomplished in his native State. With equal strength the statement holds for the entire Middle West.

From 1825, when Ward first sailed upon the Great Lakes, until 1875 when his labors ceased

"The United States was transformed in a generation from a nation employing primitive methods of agriculture and importing most of her manufacture from abroad, into an industrial country with an export trade in farm and factory products that reached the outer fringes of the globe." 15

15. United States Industrial Commission Report, 1902, XIX, 746

That transformation centered around Eber Brock Ward. His was the master mind directing progress. Without steel the modern era would not have been possible. It was cheap steel that built the railroads, the bridges, the skyscrapers, and it was cheap steel that Ward gave to America, gave it through his Chicago, Milwaukee, and Joliet plants, industries that continued to develop after his death until they became integral and important units of the gigantic United States Steel Corporation.

It was this same cheap steel which made possible a multitude of allied industries, for it is a matter of record that the Midwest became an industrial center only after steel was made available at a price which would permit mass production. Around the mills grew great shops that made farm machinery, structural steel, and industrial tools, great shops that required thousands of laborers. An outlet for farm produce was provided in the cities which resulted. The productive influence of every community was spread far beyond its confines by rapidly increasing production and by railroads and ships which made transportation easy. The comforts of life were increased and placed within the reach of all. The range of human enjoyments was extended to limits never reached before. The cheap steel produced in Eber Ward's mills was bringing on a higher standard of living for Americans.

What Eber Ward did with steel, he did with glass. While the pioneer was content with greased paper windows, while those who could afford it purchased the high priced English import, the Michigan industrialist staked his fortune on the manufacture of American made plate glass which would drive the European

product from the local market and which would, at the same time, provide additional employment for American labor. His Crystal City factory was no small venture. Not only was it the first to produce plate glass successfully, but it grew to such importance that it became an important part of the Pittsburgh Plate Glass Company when that industrial giant was organized.

Just so, Eber Ward's salt blocks, which called attention to the deposits in the Saginaw and Pere Marquette basins, paved the way for the mighty Michigan salt industry headed by the Morton Salt Company. His network of railroads and ships opened vast territories to the pioneer settler, while at the same time they made available the wealth of the interior. These were among the contributions which Eber Ward made to the great Middle West. He was an empire builder, and what he built endured.

Perhaps his greatest contribution was his business acumen. Big Business required organization, and Eber Ward, in his own person, provided that organization. He pointed the way. He was the first to make it clear that small industry had little chance for survival in a rapidly expanding country, that far-spread population centers and a high standard of living called for Big Business. The course plotted by him has been followed meticulously by those who came after. Improvements naturally were wrought. Giant corporations and holding companies were organized to do what Eber Ward, the man, had done by himself. But his methods proved the right ones, and his blue print for Big Business was followed. Because such was the case, that dream which he carried through life, that dream of diversified industry intermingled with prosperous farm communities, blossomed

into full realization. The Middle West is today what Eber Ward wanted it to be, what Eber Ward worked to make it.

He differed from most men in that he had vision and imagination coupled with the ability to get things done. As he wandered through the wilderness he came to know so well, he saw more than the grandeur of nature. The Falls of St. Mary were more than stupenduous works of God. To Eber Ward they were a means of connecting the largest of the Great Lakes with its sisters, thus providing a highway for commerce from the industries in the East to the mine fields in the West, a great trade route which was to become the most important in the world. He differed from most men for when he dashed his foot against a stone he would not go home and lament. He understood what that stone had to say and he would interpret that message into a mine, or a smelter, or a mill, that would turn the stone into wealth in the form of silver, or copper, or steel. And to accomplish this, he would surround himself with brilliant men, who would aid him in his tasks and who would be ready to carry on after he had passed, he would call great throngs to work in his factories, and he would build beyond what had ever been thought of until the wilderness and the solitary places were no more, and teeming towns and productive farms dotted the countryside. He wrought fabrics of business in wood and in silver and in glass and in steel. The world was a better place because Eber Brock Ward had lived.

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A splendid 24 page treatise dealing with the historical background of the glass industry. Especially good in detailing the struggle to make satisfactory glass in the United States.

Amalgamated Association of Iron and Steel Workers, Manuscript History, 1890, in Wis. Hist. Soc. MSS Collection.

The manuscript details the hopes and the aspirations of the iron and steel workers of that early day and provides a good picture of working conditions in the mills.

Associated Brotherhood of Iron and Steel Heaters, Rollers, Roughers, Proceedings, 1873-1876, in Wis. Hist. Soc., MSS Collection.

These convention proceedings, written in long hand by the secretary, tell the story of early relations between the iron and steel masters and their workers.

Bingey Papers, in possession of Malcom W. Bingey, Detroit, Michigan.

The Editor of the Detroit Free Press, Mr. Bingey has collected much material relating to Michigan men of the early days. Strong on political history.

Donahue, William J., History, several manuscript copies available in Milwaukee.

A loquacious discourse, not always reliable, but valuable for intimate glimpses of early life in the Milwaukee Iron Works and its village.

Downie Papers, in possession of William Downie, Detroit, Michigan.

Mr. Downie lived across the street from the Ward Fort Street Mansion. His father was the Ward grocer. Throughout his life Mr. Downie has collected materials relating to the great industrialist's career. His collection was invaluable to this study.

Fogg Papers, in possession of Clarence Fogg, Ludington, Michigan.

Mr. Fogg lived and worked in the Ward mills and salt blocks. He has a collection of notes and clippings relating particularly to the development in Ludington. Mason County is also covered in these papers.

Hitchcock Papers, in possession of the family, Marion, Mass.

Hitchcock was associated with Ward in the development of the first American Plate Glass works and functioned as President of the company. Some items in the collection cover this period but most relate to his experiences as Ambassador to Russia.

Lawler Papers, in possession of William F. Lawler, Detroit, Michigan.

Mr. Lawler has made a lifelong study of the history of the islands in the Great Lakes. His collection of manuscripts on Silver Islet proved especially valuable.

McElroy Papers, in possession of Marine City Historical Soc., Mich.

Mr. Frank McElroy was a pioneer of Marine City, and in 1929 prepared a manuscript on the history of the city from the coming of Samuel Ward to the present. Much of the material is based upon the memories of Mr. McElroy and of other old residents.

Poole Papers, in possession of Detroit Historical Society, Detroit, Michigan.

John E. Poole of Mt. Pleasant, Michigan, made the collection of marine history his life hobby. His papers, consisting of thousands of clippings relating to Great Lakes shipping and 16,000 pictures of old lake boats, is invaluable in any study embracing shipping on the lakes in the early days.

Quimby Papers, in possession of Quimby Family, Marine City, Michigan.

The present Mrs. Quimby is a niece of Eber Brock Ward. She recalls her uncle well and vividly. Has an accumulation of family records, clippings, letters and the like, which proved of the greatest value.

Runge Papers, in possession of Herman Runge, Milwaukee, Wisconsin.

A collection of facts, figures and pictures relating to Great Lakes boats and shipping. Contains complete details of all vessels of the Ward line. The equal of the Poole collection in Detroit.

Stewart Papers, Michigan Historical Commission, Lansing, Michigan.

Papers collected by Mrs. E.M. Sheldon Stewart relating to Detroit River settlers in the fifties and the sixties. Contains a manuscript history of Eber Ward Sr., as told by him to Mrs. Stewart. Invaluable for the early life of Eber Brock Ward.

Van Alstyne Papers, in possession of Van Alstyne Family, Wyandotte, Michigan.

The papers of John S. Van Alstyne, Ward associate and one-time president of the Eureka Iron Company. Includes a manuscript history of the Wyandotte works as told by its president.

Ward Papers, in possession of Burton Collection, Detroit, Mich.

Vols. 1280 to 1283 include Ward papers in addition to those of others associated with him, among them Lewis Cass and Bela Hubbard. Sample of Ward scrip of 1873, log books, office records and the like included.

Ward Papers, Michigan Historical Society, Ann Arbor, Michigan.

Not so extensive as the Burton Collection. Mostly manuscript papers of speeches made by Ward.

Ward Papers, Wisconsin Historical Society, Madison, Wisconsin.

Manuscript of the Ward Madison speech. Also some materials relating to the Milwaukee Iron Company.

Woodbridge Papers, Burton Collection, Detroit, Michigan.

Governor William Woodbridge was a Ward contemporary and was active in Michigan politics during this entire period. Collection contains several items of correspondence with the industrialist.

Printed Manuscripts

Bancroft, William L., "Memoir of Captain Samuel Ward", in Michigan Pioneer Collection, Vol. XXI, 336-351.

One of the best primary sources available. Mr. Bancroft was Collector at Port Huron and in this capacity came to know both Samuel and Eber Brock Ward well. His recollections are vivid and accurate.

Carlisle, Fred, "Comparative Sketches", in Michigan Pioneer Collection, XXII, 283-287.

A character sketch by a man who knew Eber Ward and who did business with him.

Durfee, William F., "The Manufacture of Steel", in Popular Science Monthly, November 1891.

A detailed account of the manufacture of the first steel in America by the Bessemer Process by the man who, while employed by Ward, supervised the work. One of the most valuable articles on the subject in existence.

Foster, John H., "The History of the Settlement of Silver Islet", in Michigan Pioneer Collection, XIV, 197-205.

A detailed, first-hand account of the task involved in mining the silver deposits on Silver Islet. Best article on this phase of Eber Ward's activities.

Harrington, Daniel, "Recollections", in Michigan Pioneer Collection, V, 141.

The recollections of a Michigan industrialist who grew up with, and was often associated with Eber Brock Ward. Not strong on details but very good for color of the period.

Jones, Mrs. George N., "Events in the Life of a Unique Woman," in Michigan Pioneer Collection, XXXVIII, 581-589.

The best source for the life of Emily Ward by a woman who knew her well and who aided in some of her charities. Shows clearly the influence Emily Ward had upon her brother.

Joy, James F., "The Michigan Central", in Michigan Pioneer Collection, XXII, 302.

Mr. Joy was active in building the Michigan Central and here tells of his dealing with Ward, who ran his vessels from both the eastern and western terminals of this railroad.

Miller, Judge Albert, "Pioneer Sketches", in Michigan Pioneer Collection, VII, 251.

Some fairly good pen portraits of Eber Ward and the men active in Michigan at the time.

"Silver Islet References" in Michigan Pioneer Collection, XIV, 197.

Contains additional information on Ward workings in the silver mine at Silver Islet.

Books

Butler, Joseph G., Fifty Years of Iron and Steel, The Fenton Press, Cleveland, 1920.

Privately printed book by an official of the Iron and Steel Institute. Contains fine references to Ward, Holley, Durfee, and others who were interested in those first steel experiments. Has good account of the Kelly converter.

Carpenter, Isabelle G., A Voyage on Lake Superior in 1826, Duluth and South Shore Railway, 1902.

Privately published and good only for giving a first-hand picture of conditions along the Great Lakes during the period. A trip along the shores made by Lewis Cass, contemporary of Ward's, is described.

Fritz, John, Autobiography, John Wiley & Sons, New York, 1912.

Privately printed by a man who was present when the first steel rails were rolled at Chicago, but who was not greatly impressed because he believed that iron would always be more important than steel. Was associated with both Ward and Holley in building the Cambria Iron Works. The book was evidently written long after the events and inaccuracies are frequent.

Hubbard, Bela, Memorials of a Half Century, G.P. Putnam's Sons, New York, 1887.

Reminiscences of a man who traveled the Great Lakes in 1840. Good for conditions of travel of the day and also good for sketches of the men who sailed the vessels, many of them Ward boats.

Osborn, Chase, The Iron Hunter, The Macmillan Company, New York, 1919.

Though in the main covering a later period, the book is excellent in describing the discovery of the great Michigan ore deposits and of the difficulty in getting the ore to market.

Pittsburgh Plate Glass Company, Foundation and Growth, Pittsburgh, Penn., (c.1930)

A small booklet containing an historical account of the organization of the company.

Pittsburgh Plate Glass Company, Plate Glass, New York, 1939.

Has short historic sketch and describes process of making plate glass.

Walker, Charles R., The Diary of a Furnace Worker, Atlantic Monthly Press, 1922.

Details refer to a later period but are of special value in giving color. Life around the blast furnaces is especially effectively told.

Ward, David, Autobiography, Ludington, 1912.

Privately printed and a rare book written by Eber Ward's cousin, who was not in sympathy with Ward's methods of doing business. Though definitely hostile the book is invaluable to this study.

Official Documents

Garriguess, S.S., "Report on Salt Manufacture in Michigan", in Michigan Geological Survey Reports, Lansing, Mich., III, 1-340.

A detailed report of the salt deposits on the Saginaw and Pere Marquette Rivers together with an historic account of their development in which Eber Ward played such an important part.

Michigan, State of, Historical Records Survey, Lansing, Mich., 1940.

A manuscript guide to historical sources in the State of Michigan. Of great value in finding the location of needed source material.

Michigan, State of, Supreme Court, Owen et al vs Potter et al, in State Bar Library, Lansing, Michigan.

Easily the most useful single source that came to hand during this study. The Ward estate suits dragged through the courts for many years and every phase of Eber Ward's wide business dealings was entered into. In the Law Library may be found three massive volumes on the case containing 438 exhibits and testimony, totaling several thousand pages. Briefs on the case are also available.

Missouri, State of, Dake, C.L., Sand and Gravel Resources of Missouri, Bureau of Geology, Columbia, Mo.

Contains detailed discussion and analysis of the Knob Hill sand deposits upon which the Crystal City Plate Glass Works was based.

Pennsylvania, State of, Department of Internal Affairs, Glass Manufacture, (C.R. Fettke, ed.), 1918, Harrisburg, Penna.

An official publication by the state which is the home and center of the glass industry. Especially useful because of the extended bibliography which is appended.

Michigan, State of, Annual Report of the Superintendent and Collector of the St. Mary's Ship Canal, 1877, Lansing, Mich.

Statistics showing the tonnage carried through the canal in the early days, value of cargoes, and balancing the credits with the costs of construction.

Streeter, Floyd, Michigan Bibliography, Michigan Historical Commission, Lansing, Michigan, 1921, 2 vols.

A complete compilation of Michigan source material, and where it may be found, together with a listing of practically everything that has ever been written in or about the State. Found exceedingly valuable in compiling the bibliography for this study.

United States, Geological Survey, Bulletin 285, 1906, "Glass Sands of the Middle Mississippi Basin", (E.P. Burchard, Ed.) 457-472.

Of value in a study of the Crystal City Glass Works. Indicates that Eber Ward was well advised when he purchased the sand deposits in Missouri.

United States, Geological Survey, Bulletin 315, "Clay Resources of the St. Louis District", (N.M. Feineman, Ed) 315-321

Much the same as above

United States Report of the United States Industrial Commission, 19 v. Washington, 1902.

The report is valuable in that it stresses the industrial changes following the Civil War and analyzes the various factors involved. Vol. 19 is especially useful to this study.

United States, Tenth Census, Report on Manufacturers, June 1880, "Report on the Manufacture of Glass", (Joseph D. Weeks, ed.)

This article comprises the best historical and statistical matter which came to hand relating to the manufacture of glass in the United States. It is an especially clear analysis of the industry from its beginnings to 1880.

Newspapers

Chicago Tribune, 1866-1875

Contains many items on the North Chicago Rolling Mill and also on Ward's activities on the Great Lakes.

Cleveland Herald, 1860-1865

Items on Great Lakes shipping as well as on Ward developments in the Toledo area are found in the issues of this paper.

Detroit Daily Advertiser, 1854-1868

Combined with the Tribune in 1860 and known as the Advertiser-Tribune, this paper, owned for a time by Eber Ward gives some ideas of his leanings especially in regard to the tariff. Oddly enough Ward and his family are scarcely mentioned during the period of his ownership.

Detroit Free Press, 1850-1875

The most fruitful of the Detroit newspapers for this period. Always opposed to the policies of Eber Ward. There is scarcely an issue in which the industrialist is not mentioned in one connection or another.

Detroit News, 1870-75

Not particularly useful except to substantiate items discovered elsewhere.

Detroit Post, 1870-1875

Same as above

Duluth, Minnesotian, 1868-1875

The development of Silver Islet was big news for the north country and many items on this venture appear in the Minnesotian.

Milwaukee, Cream City Courier, 1874-1875

Edited by the first clerk of the village of Bay View, partial files may be found in the Wisconsin Historical Society Newspaper room. Valuable for many items relating to the establishment and management of the Milwaukee Iron Company. Also items in regard to the coming of workers from England.

Milwaukee Daily Wisconsin, 1867-1875

Invaluable in determining facts and policies of the period covered. The Milwaukee Iron Company was an important Milwaukee industry and as such received much attention in the papers.

Milwaukee Sentinel, 1867-1875

Same as above

New Bedford, Mass., The Evening Standard, 1864-1875

The Troy steel interests, affiliated with Eber Ward, received much attention in this paper, published in the home city of W.F. Durfee, the man who made the first Bessemer steel for Ward at Wyandotte.

St. Louis, Mo., Democrat, 1870-1875

Produced items relative to the founding of the Crystal City Plate Glass Works.

St. Louis, Mo., Missouri Republican, 1870-1875

Same as above

Springfield, Mass., Republican, 1870-1875

Silver Islet and the Thunder Cape area received considerable attention in its columns, principally because of hostility to locating smelters in Detroit rather than in the East.

Wyandotte, Michigan Press, 1868-1875

Invaluable for a study of life in this early Michigan iron town. Especially valuable was the Semi-Centennial issue published in 1899 containing a complete history of the building of the Iron Company, the shipyards and the smelters.

Personal Narratives

(Much of the information used in this study was gathered from pioneers and direct descendants of pioneers who worked in the various Ward enterprises and who are still living near those enterprises. In most instances stenographic notes were taken during the interviews.)

- Ackerville, George, a resident of Ludington, Michigan, worked in the Ward lumber yards and had many stories to tell of those early salt blocks. His vivid recollections of men and events proved of great value.
- Brinton, Warren, Milwaukee, Wisconsin, a direct descendant of Eber Ward, whose father was placed in the Milwaukee Iron works and who, himself, grew up around those works, Mr. Brinton possesses a genealogical table which proved useful.
- Donaher, Michael B., Ludington, Michigan, worked up from the ranks in the Ward mills. He verified many of the impressions gained in conversations with George Ackerville.
- Dustin, Ole, Detroit, Michigan, an old boat captain who sailed for and in competition with the Ward line. His lore of shipping on the Great Lakes in the Civil War period provided much background color for the study.
- Grant, George, Saginaw, Michigan, a retired lawyer whose memory of the Ward enterprises related primarily to various lawsuits which naturally arose in so far flung a business.
- Haight, Henry, Dearborn, Michigan, a good friend of Eber Ward and an associate with him in many enterprises. Haight was especially impressed by the Ward theory that prosperity could come only if there were a mingling of manufacture and agriculture. He lives, today, next door to Henry Ford, who has espoused much the same theory.
- Holdingshausen, Fred, Crystal Heights, Missouri, a pioneer who helped build the first plate glass works in America and who remembers vividly much of the history of that early day.
- Hubbard, Frank W., whose father Langdon Hubbard came to Huron City, Michigan, before the Civil War and started in business on funds advanced by Eber Ward. A lasting friendship developed and the son remembered many interesting details of Lake shipping in the early days.
- Maurer, John D., late Superintendent of the Illinois Steel Company, Milwaukee branch, who made available many of the early records of the Milwaukee unit of the Ward mills.

- Merrill, Mrs. Maude, Lexington, Michigan. Mrs. Merrill, now more than a hundred years old, lived on the St. Clair River all of her life. For years she collected clippings of interest relating to events on the river. Many of her recollections fit into this study. Mrs. Merrill has contributed a large part of her historic collection to the Burton Collection in Detroit.
- Mershon, William B., Saginaw, Michigan, one-time president of the Ward-built Pere Marquette Railroad, and interested in the Saginaw lumber business. Mr. Mershon knew Eber Ward well, worked with him, and carried on after Ward's death. Information gleaned from him was invaluable.
- Miller, William A., a sawyer in the Ward Ludington mill. Description of the mill, as well as pictures of it, proved of value.
- Pursall, John, Crystal City, Missouri, worked in the plate glass works from the time it was started by Eber Ward. His recollections of conditions existing in those early days proved interesting and valuable.
- Riley, Matt, Wyandotte, Michigan, worked in the first steel mill, remembered Ward well, remembered, too, conditions that existed in the Wyandotte works.
- Sangor, John P., Cherry Island, Michigan, another Wyandotte mill worker who provided considerable background for this study. By checking the recollections of these pioneers against each other it was possible to sift fact from fiction.
- Thomas, George, Wyandotte, Michigan, was present when rolls broke in Wyandotte Mill at time an effort was made to roll the first steel rails from steel made in the experimental shops.
- Teeling, John, Wyandotte, Michigan, made the shoe for the first commercial steel ingots poured in the United States. His memory is still clear and his recollections vivid. He was able to describe the scene at that first pouring with accuracy.
- Trueman, Joseph, Detroit, Michigan, was one of the men brought from Scotland by Eber Ward because he knew steel manufacture. Contributed much of importance on the early experiments.
- Wescott, J. Ward, Detroit, Michigan, a nephew of Eber Brook Ward, who is still in the shipping business and whose offices are located on the Detroit River front approximately in the same location where the Ward offices were located originally. While he remembered little of his uncle, he did have a large collection of photographs of boats of the old Ward line.
- William, Joseph and Howard, two brothers at Ludington, Michigan, who worked in the saw mills and the salt blocks and who contributed much information on the early experiments in salt in Michigan.

SECONDARY SOURCES

Books

Abbott, Willis J., The Story of Our Merchant Marine, Dodd, Mead Company, New York, 1919.

Contains excellent chapter on Great Lakes and on importance of Erie and St. Mary's canals. Well written but not documented.

Bates, William W., American Marine, Houghton, Mifflin & Company, New York, N.Y., 1893.

Written by a former Commissioner of Navigation, this book tells the story of shipping on the Great Lakes in an authoritative manner.

Beasley, Norman, Michigan, the Wolverine State, Doubleday, Doran & Company, New York, 1936.

A eulogistic, well written booklet stressing the greatness of Michigan and the historic past which helped to make her great. Interesting for a quick glimpse into the romance which built a state.

Beers, J. H., History of the Great Lakes, Beers & Company, Chicago, 1899.

A rambling account of life on the Lakes. Tells many stories relating to Ward boats.

Berglund, A., The United States Steel Corporation, Columbia University Press, New York, 1907.

A detailed study concerning itself principally with the period after 1900. The early chapters contain much information on the development of the Bessemer process as well as discussions relating to the value of Michigan ores.

Boucher, John N., William Kelly, Greensburg, Pa., 1924.

Privately printed, this book is, perhaps, the first attempt to give the honor of inventing the process of making steel by blowing cold air through molten iron to William Kelly, an honor which has now been generally given him. Evidence is based largely on information supplied by Mrs. Kelly after the inventor's death.

Gartwright, Charles E., The Tale of Our Merchant Ships, E.F. Dutton & Company, New York, 1924.

Stresses importance of the St. Mary's Canal upon Great Lakes shipping and upon the development of industry in the Middle West. Book is not well documented.

Casson, Herbert N., The Romance of Steel, A.S. Barnes Company, New York, 1907.

As the title indicates this book is written in an easy, readable style. Not annotated but comparisons indicate that the facts are, in the main, correct. Very good on the early history of the steel business in the United States. Contains many good pictures.

Catlin, George B., The Story of Detroit, Detroit News, Detroit, Michigan, 1926.

A newspaper man's account of the high lights of Detroit history, taken largely from the files of the newspapers. Contains many facts relating to early business development in Detroit.

Channing, Edward and Lansing, M.F., The Story of the Great Lakes, Macmillan Company, New York, 1912.

Any book by Prof. Channing merits attention and this one is no exception. Develops Great Lakes traffic with special emphasis on the importance of the Erie and St. Mary's canals. A fine, though short, bibliography is appended.

Clark, Victor, The History of Manufacture in the United States, 3 vols., McGraw, Hill Book Company, New York, 1929.

Easily the outstanding work in this field. Published with funds supplied by the Carnegie Institute of Washington, Volume I carries the story to 1860, while Volume II continues it to 1890. Glass, steel, lumber, salt, all are treated in this work and, in addition, ample references give valuable leads to new fields of investigation.

Cotter, A., The Authentic History of United States Steel, Moody Magazine & Book Company, New York, 1916.

Cotter is writing definitely from the corporation point of view. His material is taken from corporation sources and no effort appears to be made to check with other known facts. Not annotated.

Della, Harriette May, The Politics of Michigan, Longmans Green & Co., New York, 1912.

The period covered is that from 1865 to 1878 and an effort is made to show the relationship between politics and the building of the Michigan railroads, the Michigan Central and the Pere Marquette being among those discussed.

Farmer, Silas, The History of Detroit and Michigan, Silas Farmer & Company, 1884.

Largely a compilation of facts but valuable in that Eber Ward appears again and again in its pages. Of interest is the fact that the Wyandotte steel experiment is not even mentioned, indicating that in 1884 these experiments were not considered of great importance. Profusely illustrated.

Fish, Carl Russell, The Rise of the Common Man, Macmillan Company, New York, 1937.

One of the first books to emphasize the life of the average man and to stress the fact that the acts of the politician, are, after all, regulated by what the common man thinks. Good for description of life in the Middle West at the time Ward came to power.

Fite, Emerson, Social and Industrial Conditions in the North during the Civil War, Macmillan Company, New York, 1910.

Excellent and invaluable in an understanding of conditions at the time when business was emerging in the United States. Has much information on the conditions of the lumber and salt industry at the time.

Fowle, Otto, Sault Ste. Marie, G.P. Putnam's Sons, New York, 1925.

By an official of the Sault and a former state senator, the book is well documented and largely taken from official state papers. It is easily the best book on the canal which has come to hand.

Frederick, J.H., The Development of American Commerce, D. Appleton Company, New York, 1932.

Complete with statistical tables and information of importance to this study. The author is a professor at the University of Pennsylvania. Well documented.

Fuess, Claude M., Carl Schurz, Dodd, Mead & Company, New York, 1932.

Well written, well documented. Of use in this study only for references to the Detroit connections of Schurz.

Gillinder, James, "American Glass Interests", in Chauncey M. Depew, One Hundred Years of American Commerce, 2 vols., D.O. Hayes Company, New York, 1895.

Written by a president of one of the glass companies, this article, appearing in Volume I, is one of the best. It concerns itself entirely with the historic development of the glass companies of which the Crystal City plant is one.

Goodale, Stephen, Chronology of Iron and Steel, Penton Publishing Company, Cleveland, 1931.

Exactly what the title indicates. Every incident in the development of steel is noted. A handy reference volume.

Gras, N.S.B., Industrial Evolution, Harvard University Press, Cambridge, Mass., 1930.

This professor of Business History at Harvard takes leading industries, i.e. steel, lumber, etc., and traces their development without, however, introducing the human element.

Haworth, Paul, The United States in Our Own Times, Charles Scribner's Sons, New York, 1931.

Chapter X discusses the development of Big Business in the period following the Civil War, the movement to which Eber Ward contributed so much.

History of Franklin, Jefferson, Washington, Crawford, and Gasconade Counties, Missouri, 1888.

Though the author remains anonymous, this large volume contains much information on the founding of the plate glass works at Crystal City, information which could readily be checked from other sources.

History of Mason County, Michigan, 1882.

Another of the County histories which must be handled judiciously. This one relates the events leading to the development of the Ludington Lumber mills.

History of St. Clair County, Michigan, A.T. Andreas, Chicago, 1883.

A county history that discusses the settlement of the St. Clair shores including the building of Ward's Landing, the later Marine City. Much of this history was written by Rev. O.C. Thompson, a pioneer in the district and friend of Eber Ward.

Holbrook, Stewart H., Iron Brew, The Macmillan Company, New York, 1939

A colorful tale of the discovery of the iron mines in Michigan and Minnesota and the importance of these discoveries upon the rapidly growing iron and steel industry. Emphasizes life in the mines and in the shops rather than organization.

Jeans, J.S., Steel, E. and F.N. Spon, London, 1880.

The best book on the subject, published in England and doing for that country what Swank does for the United States. Emphasis is placed on inventions and naturally the English point of view is stressed. Bessemer is credited with the development of the cold-air process and Kelly is scarcely mentioned.

Keith, Hannah E., An Historical Sketch of Internal Improvements in Michigan, 1836-1848, Ann Arbor, Michigan, 1900.

Well annotated and of value in any study of the St. Mary's Ship canal. Probably a Doctor's dissertation.

Kruif, Paul de, Seven Iron Men, Blue Ribbon Books, New York, 1929.

Story of the seven Merritt brothers who discovered the Missabi iron range. Though the story deals with a period after the opening of the Michigan mines, it is useful for local color as well as for many references to the earlier history of mining.

Lingley, Charles R., Since the Civil War, The Century Company, New York, 1926.

While this book is of the text book variety, Prof. Lingley senses the economic and social changes taking place after the Civil War and stresses these changes instead of the political history of the time. The growth of Big Business receives considerable space.

Marvin, Winthrop L., The American Merchant Marine, Chas. Scribner's Sons, New York, 1902.

Another history on shipping which contributes new thoughts on inland lake transportation, with special emphasis on the fishing industry.

Mathews, Mrs. Lois (Kimball), The Expansion of New England, Houghton, Mifflin Company, New York, 1909.

Invaluable to any study seeking the causes which brought settlements to the Middle States. Well documented and done in a scholarly style. The work was done under the direction of Professors Turner and Paxson, in itself a recommendation.

Merk, Frederick, Economic History of Wisconsin during the Civil War Period, Wisconsin Historical Society, Madison, 1916.

A scholarly analysis of the State during the period treated in this study. Chapters on labor and industry proved especially valuable.

Mills, James G., History of Saginaw County, Seeman & Peters, Saginaw, Michigan, 2 vols. 1918.

One of the better county histories. Good for facts on the development of the lumber and salt industry in the Saginaw Valley.

Marine Directory of the Great Lakes, Mitchell & Company, 1900.

Available in the Wisconsin Historical Society Library at Madison, Nos. 21 and 22 and 23 deal with Ward boats, giving many specifications and also original first-hand narratives of life on the boats.

Mussey, Henry R., Combinations in the Mining Industry, Columbia University Press, 1905.

A study of business concentration and organization in Lake Superior iron production.

Nevins, Allen, The Emergence of Modern America, Macmillan Company, New York, 1927.

Stressing the social and economic post-war background, Prof. Nevins here provides the best background study found for the subject under discussion. Ably written and well documented, the book contains much useful information.

Newton, Stanley, Sault Ste. Marie, Sault News Printing Company, Sault Ste. Marie, Michigan, 1923.

A publication by a local historian which appears authentic as to fact. Much local folklore which is useful for color.

Powers, Perry F., A History of Northern Michigan, 3 vols., Lewis Publishing Company, Chicago, Ill., 1912.

Contains much detail on St. Mary's ship canal and on the discovery and working of Michigan iron mines.

Republican Party in Michigan, Detroit Tribune, 1904.

Contains complete tabulations and results of all Michigan elections. Valuable to this study for information relating to elections of 1872.

Riegel, R.E., America Moves West, Henry Holt & Company, New York,

Prof. Riegel is well known for his work on railroads, but his analysis of the westward movement shows the same scholarly approach as his work on railroads.

Ripley, William Z., Trusts, Pools and Corporations, Ginn & Company, New York, 1905.

Chapter I of this book contains an article by J.W. Jenks on "The Michigan Salt Association", the first attempt in this country at business consolidation by agreement. Eber Ward was instrumental in the organization of this Association.

Scharf, Thomas, History of St. Louis City and County, 2 vols., St. Louis, Missouri, 1895.

Contains good and authentic discussion on the construction of the Ward Crystal City Plate Glass works.

Schlessinger, Arthur M., New Viewpoints in American History, The Macmillan Company, New York, 1937.

In Chapter XI Dr. Schlessinger traces the forces which brought about a change in the economy of the country after the Civil War and shows how inventions and increased demand brought on the era of Big Business. New ideas are expressed in a scholarly manner.

Shafer, Joseph, Four Wisconsin Counties, State Historical Society, Madison, Wisconsin, 1927.

A splendid, critical work which traces the development of Milwaukee County and which traces, likewise, the change from an agricultural to an industrial economy.

Stanwood, Edward, American Tariff Controversies, 2 vols., Houghton, Mifflin Company, 1903.

A fine study indicating the reasons for varying opinions on the tariff in different parts of the country. Good discussion on protection for "infant industries" of which the steel industry was one.

Stevens, Martin D., Steel Trails, Milton, Balch & Company, New York, 1933.

A good discussion not only on the westward extension of the rails but also on the transition from iron to steel. It was the steel rails, first rolled in the Ward Chicago works, that made railroading feasible and profitable.

Streeter, Floyd B., Political Parties in Michigan, 1837-1860, Michigan Historical Commission, Lansing, Michigan, 1918.

Excellent for tracing growth of tariff sentiment in Michigan with the coming of industries.

Swank, James M., A Collection of Statistics Relating to the Iron and Steel Industries of the United States, Philadelphia, 1893.

Official statistics issued by the American Iron and Steel Institute compiled by its secretary. Shows clearly how American rails, aided by the tariff, drove the English rails off the American market. Copy of booklet available in Wisconsin Historical Association library at Madison.

Swank, James M., The Manufacture of Iron and Steel in all Ages, American Iron and Steel Association, Philadelphia, 1892.

The most thorough and most scholarly work on the history of iron and steel that has yet been written. The author was the secretary and general manager of the American Iron and Steel Association for over twenty years and the work is produced from official records, original monographs and personal information. Swank was the outstanding authority on this subject in the United States.

Tarbell, Ida M., The Life of Elbert H. Gary, D. Appleton & Company, New York, 1925.

A biography by this student of Big Business, which is built upon source materials. Of value in that it depicts the early development of the iron and steel business in Illinois and traces the growth of the Ward interests until they blossom forth as the United States Steel Corporation.

Taussig, F. W., The History of the Present Tariff, G. P. Putnam's Sons, New York, 1885.

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