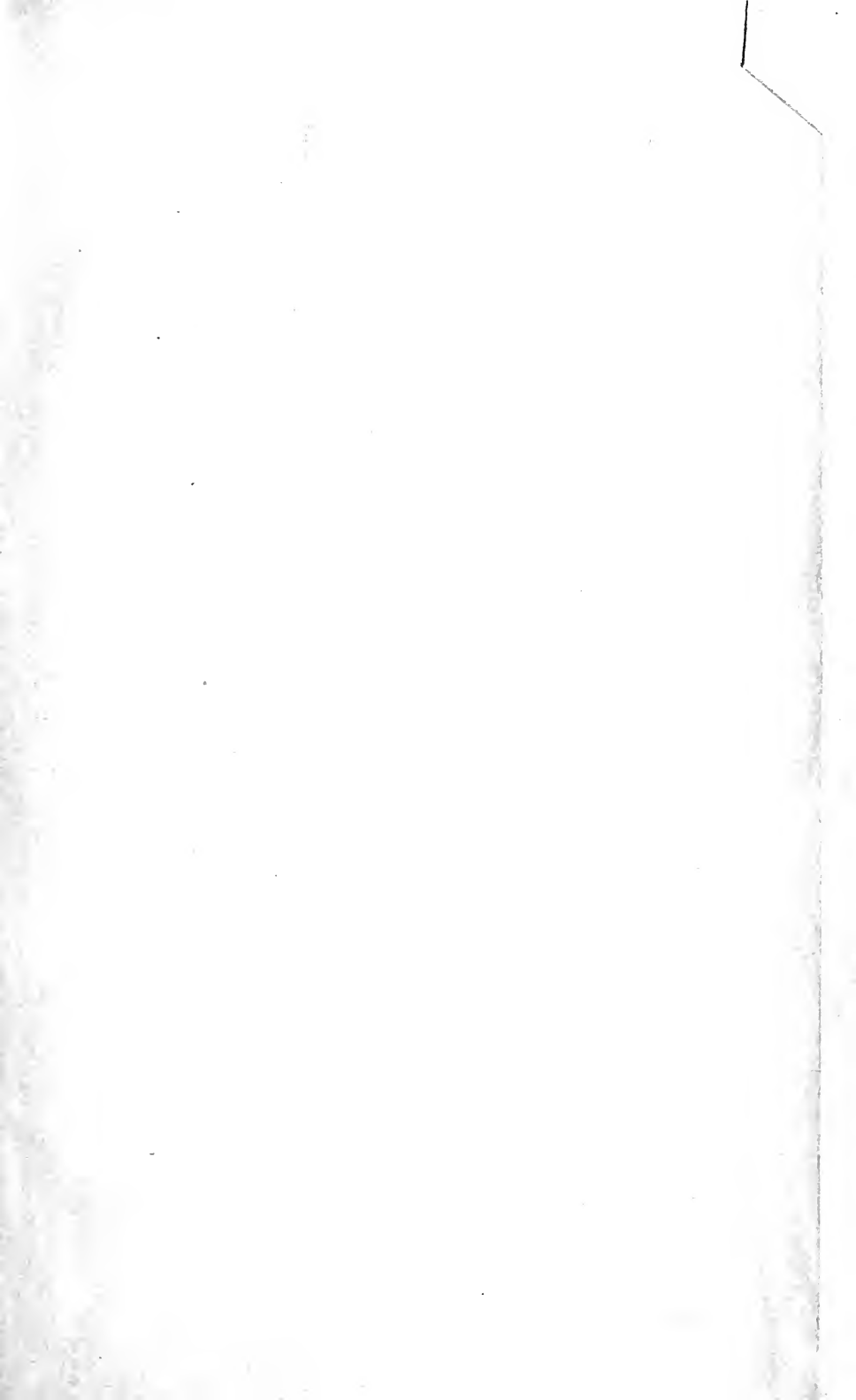


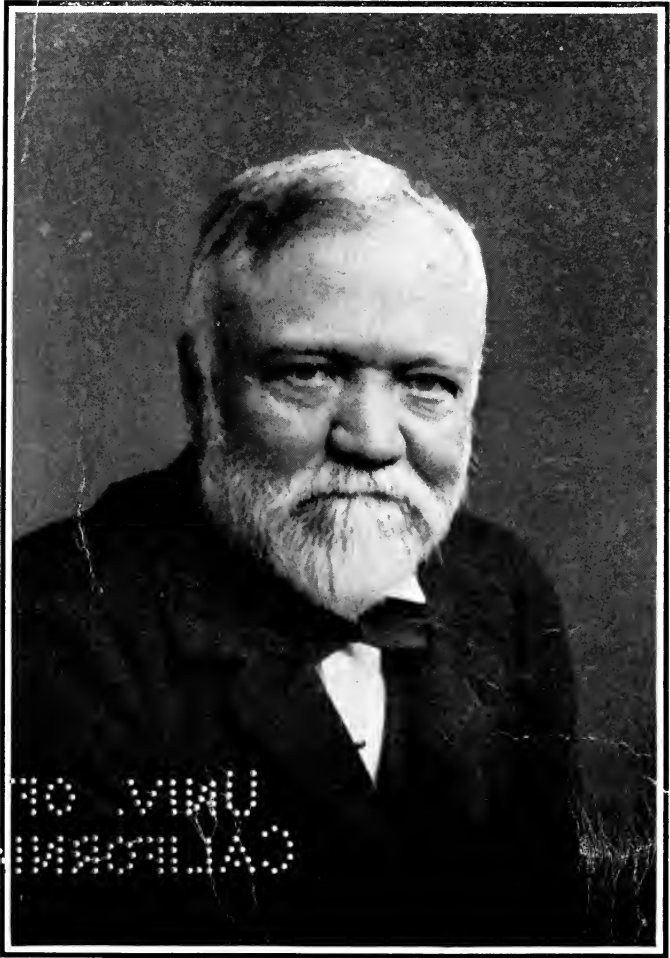
Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation







LIBRARY OF
UNIVERSITY OF CALIFORNIA



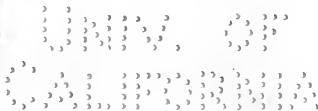
Copyright, by B. L. H. Dabbs, Pittsburg.

ANDREW CARNEGIE

THE ROMANCE OF STEEL

THE STORY OF
A THOUSAND MILLIONAIRES

BY
HERBERT N. CASSON



NEW YORK
A. S. BARNES & COMPANY
1907

HD9515-
C3

COPYRIGHT, 1907, BY
A. S. BARNES & COMPANY

All Rights Reserved

165080
TO VIND
LIBRARY

*To the men
who have made the United States the foremost steel-making
nation in the world*

165080



PREFACE

THIS book is the first popular history of our greatest American industry. The wonderful story of steel is here told in such a way that those who have no technical knowledge of steel-making may enjoy and appreciate the miracles that have been accomplished.

First, it is a story of the electric expansion of a business from bankruptcy to billions. It is an American story of self-help—of the unprivileged men who climbed from poverty to the commercial supremacy of the world. And also it is a biography of that most useful of all metals—the structural metal of modern civilisation.

Now that the iron and steel business has passed into the hands of more than sixty thousand stockholders, there has come a demand for a popular book on the subject, which shall be not only picturesque, but accurate and instructive as well. Therefore, while I have written these pages after the manner of fiction, the facts have been gathered from the highest authorities. Fully nine-tenths of the material has been obtained at first hand, either from the Steel Kings themselves or from original documents. The book is, in fact, the result of a two-years' study of the American iron and steel business, made on the spot, and with the assistance of many experts.

I take this opportunity to express my thanks to the following gentlemen for their courtesy and friendly co-operation:—Andrew Carnegie, H. C. Frick, John Fritz, Charles M. Schwab, Elbert H. Gary, George W. Perkins, George Gould, James M. Swank, George Lauder, John Walker, F. T. F.

Lovejoy, Thomas N. Miller, John W. Gates, Robert W. Hunt, Peter White, John A. Topping, A. C. Dinkey, H. P. Bope, Emil Swensson, Thomas Lynch, D. M. Clemson, James Gayley, D. C. Beaman, W. L. Abbott, W. J. Filbert, Leonidas Merritt, Charles S. Price, S. L. Schoonmaker, John C. Osgood, and the late F. T. Hearne and Samuel Thomas.

CONTENTS

CHAPTER I

THE BIRTH OF THE BESSEMER PROCESS

	PAGE
The Youth of the Steel Trade—Demand for Cheap Steel—Kelly's Epoch-Making Discovery—His Struggles with Failure—Mushet and Bessemer—The War of Patents—History of Bessemer—Beginning of Titanic Period of Steel-Making—The First Millionaire—Alexander L. Holley—Captain William R. Jones—His Early Adventures—How he Broke the Records—The Race with England—Our Steel Supremacy—Jones as a Leader of Men—His Tragic Death	I

CHAPTER II

THE DISCOVERY OF THE GREAT ORE RANGES

The Royal Romance that Created our Iron Business—The Falling Creek Massacre—The Iron Makers of Lynn—Struggles with Indians and Puritans—Kings and Queens who Made Iron in America—Baron Stiegel and Baron Hasenclever—The Iron-Making Ancestors of Washington and Lincoln—The Famous Ironmasters of the Revolution—The West Point Chain—Mrs. Rebecca Lukens—From the Revolution to the Civil War—The Demand for Ore—A Billion-Dollar Wilderness—Philo M. Everett—His Famous Voyage of Discovery—How Charlemagne Tower Spent Four Millions to Make Eight—Discovery of the Mesaba Range by the Merritt Brothers—Wonders of a Mesaba Mine—The Building of the Ore Fleets—Profits of an Ore Railway—Lake Superior Millionaires	34
--	----

CHAPTER III

THE RISE OF ANDREW CARNEGIE

Andrew Carnegie as a Boy—His Heritage of Poverty—How He Rose—Adventures as a Company Promoter—His Entrance into Iron

Business—Early Attempts at Authorship—His Three Partners—Financial Difficulties—Carnegie as a Bond Broker—How He Became a Steel Maker—The Secret of His Success—The Lucy Furnaces—A Golden Flood of Profits—The Fate of Carnegie's Partners—The Cæsar of Steel	68
--	----

CHAPTER IV.

THE CARNEGIE COMPANY UNDER FRICK

Henry Clay Frick as a Farm Boy—His Début as a Capitalist—Becomes King of Coke—The Picturesque Region of Connelsville—How Frick Entered the Carnegie Company—The Capture of Homestead and Duquesne—Henry Oliver, the Man behind the Ore—His Romantic Career—Dangers of Steel-Making—The Carnegie System—Original Methods of Carnegie—Muscle <i>versus</i> Machinery—The Battle of Homestead—The Downfall of Unionism—Carnegie and Frick as Employers—Homestead after the Strike—Miracles of Machinery	104
--	-----

CHAPTER V

THE WORKMEN-PARTNERS OF ANDREW CARNEGIE

Forty Workmen who Became Millionaires—Romances of Self-Help—The Rise of Charles M. Schwab—His Work at Homestead—Contrast between Schwab and Corey—Why Carnegie Promoted Young Men—The Era of Rapid Production—Forty Millions of Profit—Carnegie as a Typical American—His Faith in the Future of Steel—The Career of Henry Phipps	145
---	-----

CHAPTER VI

THE HARVEST OF GOLD

The Frick-Carnegie Quarrel—Personality of Frick—His Business Methods—Entrance of William H. Moore into the World of Steel—How John D. Rockefeller Tried to Buy Out Carnegie—The Great Steel War—Carnegie's Selling Campaign—How His Price Rose to Nearly Half a Billion—The Men Who Paid it—The Shower of Gold—How Oliver Made Thirteen Millions—The Money-Mad Pittsburghers—Fads

CONTENTS

xi

PAGE

of the New Millionaires—Carnegie's Thirteen Million Dollar Pension —His Democratic Habits—The Story of His Generosity	175
--	-----

CHAPTER VII

J. PIERPONT MORGAN AND THE UNITED STATES STEEL CORPORATION

The Timely Advent of Morgan—His Masterful Personality—His Big Associates—Magnitude of the New Corporation—Its Vast Possessions—Fourteen Hundred Millions of Capital—How the Big Company was Launched—The Question of Over-Capitalisation—The Chicago Steel Men—John W. Gates, the Wire King—His Financial Exploits—The Napoleons of Tin Plate—The New Triumvirate of Steel. . . .	209
---	-----

CHAPTER VIII

SIX YEARS OF THE STEEL TRUST

Morgan's Policy of Publicity—The Slump of 1903—Return of Prosperity—Benefits of Consolidation—A Modern Coal Mine—Gary, the New Steel City—The Corporation and Its Workmen—New System of Profit-Sharing—The Menace of Wall Street—The Five-Year Record of the Steel Trust—Mistakes and Achievements—Its Influence upon Business Conditions—A Billion Dollars to Labour and Capital	239
---	-----

CHAPTER IX

PITTSBURGH

A City of Practical Thinkers—The Man-Power of Its Machinery—Pittsburgh and the Pyramids—Its Supremacy in Steel—The Pay Car of the Steel Trust—Pittsburgh as a World-Power—The Shirt-Sleeve Millionaires—Social Conditions—Railroads and Waterways—Suburban Palaces—Progress and Politics—Pittsburgh's Romantic Childhood—Early Days of Iron-Making—Low Wages and Small Profits—The First Furnaces—Pittsburgh as a Port—The "Fathers of Steel"—Incredible Wealth and Energy	259
--	-----

CONTENTS

CHAPTER X

BIRMINGHAM AND PUEBLO

Dramatic Beginnings in the South and West—Natural Wealth of Alabama—Its Amazing Growth—A Centre of Cheap Production—Spectacular Career of De Bardeleben—Iron-Making Pioneers and Northern Capitalists—Magnitude of the Tennessee Coal and Iron Company—Don H. Bacon—John A. Topping—The John W. Gates Syndicate—The Sloss-Sheffield Company—Achievements of the Alabamians—Drawbacks of Negro Labour—The Romance of Colorado—Its Isolation and Self-Reliance—J. C. Osgood and His Partners—The Colorado Fuel and Iron Company—Battle with Gates and Harriman—The Advent of Gould and Rockefeller—Tragic Fate of Pioneers—Frank J. Hearne—Pueblo, the Workshop of the West—Its Scenic Beauty and Enterprise 294

CHAPTER XI

STEEL KINGS OF MANY CITIES

Carnegie's Successor, B. F. Jones—Development of Jones and Laughlin Company—The Seven Steel Companies of Philadelphia—Disston, the Saw-Maker—Joseph Wharton, the Iron-Maker Poet—The Iron City of Reading—The International Harvester Company—Buffalo as a Steel Centre—The New Lackawanna Steel Company—The Bethlehem Works—Mark Hanna and Mayor Johnson—Mrs. Kelley, Iron-Maker—James J. Hill as an Ore King—A Two-Billion-Dollar Industry . . . 320

CHAPTER XII

THE FUTURE OF STEEL

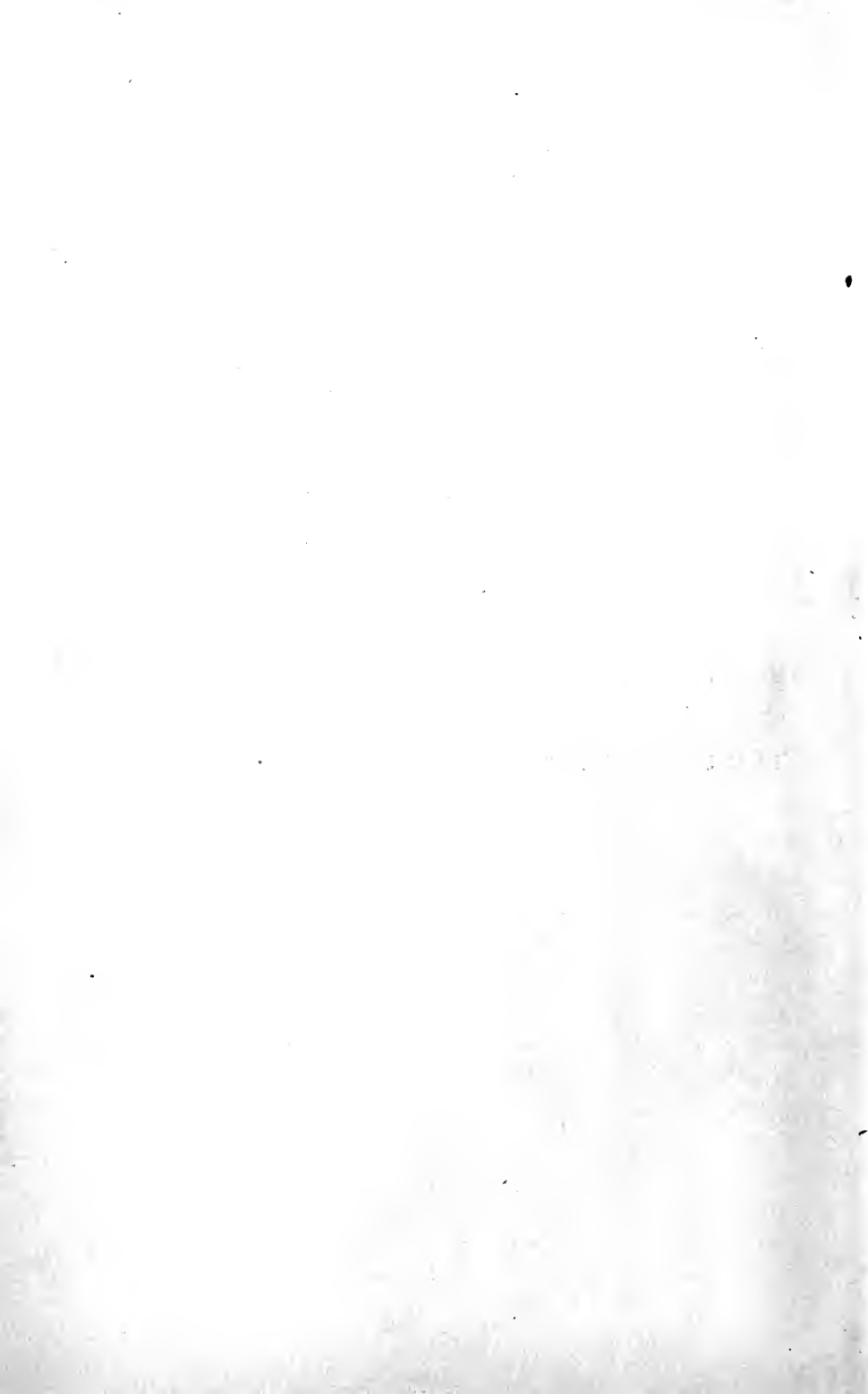
A Thousand Steel Kings in a Thousand Days—Different Views of the Future—The Wonders of American Steel Magic—New Uses for Steel—The Great War of the Future—Growth of Foreign Trade—The To-morrow of Pittsburgh—Cleveland as a Steel City—Detroit and Cincinnati—The Opportunity of Duluth—The Battle against Conservatism—James Gayley's "Dry Blast"—The Question of Quality—The Flesh-and-Blood Cost of the Millions—The Higher Uses of Steel 338

ILLUSTRATIONS

Andrew Carnegie	[o]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	<i>Frontispiece</i>
												PAGE
William Kelly .	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	4
Kelly's First Tilting Converter	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	8
Sir Henry Bessemer .	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	12
Captain Eber B. Ward	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	16
Daniel J. Morrell	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	24
Captain William R. Jones	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	32
Falling Creek as It Is To-Day	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	36
Mrs. Rebecca Lukens	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	44
Philo M. Everett	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	48
Alfred Merritt	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	56
Leonidas Merritt	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	64
Thomas A. Scott	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	70
Thomas N. Miller	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	74
Henry Phipps .	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	80
David McCandless	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	82
James Scott	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	90
William P. Shinn	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	96
Henry Clay Frick, as a young man	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	104
Thomas Lynch	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	106
In the Connellsville Region	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	108
Julian Kennedy	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	112
Henry W. Oliver	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	128
Charles M. Schwab	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	140
George M. Lauder	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	144
Francis T. F. Lovejoy	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	146
Thomas Morrison	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	148
Alva C. Dinkey	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	150
Azor R. Hunt	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	152
D. G. Kerr	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	154
W. W. Blackburn	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	156
D. M. Clemson	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	160
Tom L. Johnson	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	166

THE ROMANCE OF STEEL

THE STORY OF A THOUSAND MILLIONAIRES





CHAPTER I

THE BIRTH OF THE BESSEMER PROCESS

The Tremendous Modern Expansion of the Iron and Steel Industry which Began with the Invention of the Bessemer Process—How Kelly in America and Bessemer in England Evolved their Epoch-Making Discovery and Sketches of the Big Men Who Took the Lead in Developing It.

THE dramatic and sensational development of the steel and iron industry in America, in its broadest sweep, is bounded by forty years. More progress has been made within this space than in all our earlier colonial and national life. Indeed, the last thirty years have turned out more iron and steel, the world over, than was produced in all the previous centuries of known history.

Naturally, those who have produced this vast supply of an indispensable metal have become the masters of incredible wealth. The biggest business fact in the world is the United States Steel Corporation. It has more stockholders than the population of Nevada; more employees than there are voters in Maine; more profits, in a good year, than the revenue of the city of New York. Above all ordinary corporations it towers like the Great Pyramid of Cheops above the sand mounds of the desert. Yet, vast as it is, it represents less than two-thirds of the American iron and steel industry. It would be a two-billion-dollar corporation if it included the whole trade.

If this unparalleled development had been the result of centuries, it would still be wonderful enough; but it is practically the harvest of one generation's sowing. There is not a chapter of ancient history in the Story of Steel. Any one

THE ROMANCE OF STEEL

who visits the little Pennsylvania town of Bethlehem may still see John Fritz, who might almost be called the Father of the Steel mill. In Louisville still lives a white-haired old lady, wife of William Kelly, the original inventor of what is called Bessemer steel. In Chicago any visitor may see Bob Hunt, whose personal reminiscences reach back to the earliest dawn of the steel era. And the masterful Scot who rescued our steel business from periodic bankruptcy, and won for it the commercial supremacy of the world, is still flitting between New York and Skibo and thinking more of the future than of the past.

Even our younger steel kings—Frick, Schwab, Corey, Morrison, Dinkey, Jones, and the rest—can remember the early period of small sales and petty economies. Hundreds of men who helped to rock the steel giant in his cradle are still to be found in the mills and offices of Pittsburgh. In Johnstown may be seen the first tilting converter that Kelly used in making Bessemer steel; and the boy who helped the inventor with his experiments is still employed in the Cambria mills. In fact, the whole steel industry is so young that nine-tenths of the information in this volume was obtained, not from libraries, but from the men and women who have seen it grow out of feeble infancy into its golden age.

On that bleak November day when Andrew Carnegie was born in a Scottish cottage, the iron- and steel-makers of America had no more thought of millions than of castles in Spain. Steel sold for twenty-five cents a pound. The ironmasters mined little coal and baked no coke. Not an ounce of iron had been made in Wheeling, Youngstown, Cleveland, or Chicago—the latter being a fur-trading village, without harbour or railroad. Birmingham, Alabama, was not on the map until two-score years later. There was not a foot of railroad near Pittsburgh, and not one rail, either of iron or steel, had been produced in any part of the country. And the total American output

BIRTH OF THE BESSEMER PROCESS

of iron in that year was less than we make now in four days.

As late as the beginning of the Civil War, what was called a first-class furnace would cost about fifty thousand dollars, employ seventy men, and produce a thousand tons of iron a year. The business was conducted, not by corporations, but by individual ironmasters, who ruled in a truly feudal way over their small communities. There were no millionaires, and what little money an iron-maker had was liable to become waste paper at any moment by the collapse of a rickety bank. Four furnaces out of five were haunted by the spectre of debt; and in a bad year, like 1837 or 1857, scores of furnaces were blown out. The tariff, too, was even more variable than the currency. It was raised and lowered by the fitful gusts of politics until 1861, when the Morrill tariff first gave some chance of stability to the unfortunate industry.

With the Civil War came the first large orders and continuous business. Every plant was run night and day. The output of iron nearly doubled, and the price jumped from \$18.60 to as high as \$73.60 per ton. Of the three billion dollars that the war cost the Federal Government, a goodly share went to the iron men. Uncle Sam was the best customer they had ever known. They had a surplus in the bank, at last—a store of capital which enabled them to do business on a larger scale. When the smoke of battle had cleared away, Captain Eber B. Ward, of Detroit, loomed up as the first of the iron kings, with several millions to his credit and three flourishing plants, in Chicago, Detroit, and Milwaukee.

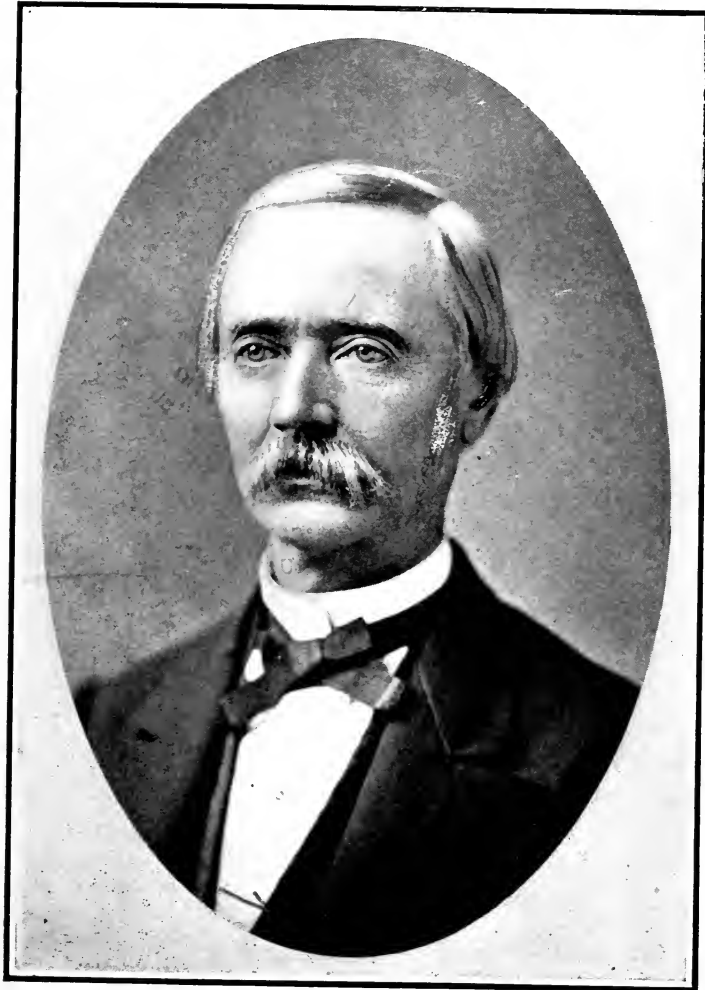
The marvellous modern expansion of the iron and steel industry was now about to begin. The germ of its stupendous growth lay in the invention of the Bessemer process. It is necessary, therefore, that this chapter should describe that wonderful discovery—what it is, and how and when and by whom it was invented.

THE ROMANCE OF STEEL

THE DEMAND FOR CHEAP STEEL

When there arises a demand for something that shall play a vital part in our national and social development—a demand which is earnest and universal—science is pretty sure to meet it. Even nature must yield when the human race centres its brain-force, with white-hot energy, upon a certain point of attack. It was so in the cases of electricity, railroads, cables, the telegraph, and the telephone; and fifty years ago the most pressing need of the civilised world was a new metal—one that would be as strong as steel and as cheap as iron. This was more than a trade problem. The railroads were using iron rails, which wore out in less than two years. The largest locomotive of that time would to-day be considered little more than a toy. There were no skyscrapers and no subways, and stages were practically the only street-cars. Neither wood nor iron was fit for the new uses of the growing republic; and the high cost of steel made it almost as much out of the question as silver. The greatest need of the world was *cheap steel*.

At this juncture an answer to the universal demand was voiced by the inventive genius of two men—William Kelly, a Pittsburgh Irish-American, and Sir Henry Bessemer, an Englishman of French descent. They devised a new way to refine iron, which has since been known as the Bessemer process. Their discovery was an entirely new idea and one which at first seemed absurd to every other steel-maker; but within a few years it was universally adopted, revolutionising the iron and steel trade, and providing the world with a cheap and abundant supply of its most useful metal. It expanded the industry with almost the suddenness of an explosion, and for the first time in the long history of steel-making the steel-smiths were fairly swept off their feet by a flood of riches. Hundreds of individuals were picked up—by merit, by luck,



WILLIAM KELLY



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRTH OF THE BESSEMER PROCESS

or by chance—and flung upon the golden thrones of an international empire of steel.

In 1846 William Kelly and his brother bought the Suwanee Iron Works, near Eddyville, Kentucky. Kelly's father was a well-to-do landowner in Pittsburgh, where it is said that he erected the first two brick houses in the city. At the time when William Kelly began to make iron, he was thirty-six years old—a tall, well-set-up, muscular, energetic man, with blue eyes and close-cropped beard. In inventiveness his brain ranked high; in business ability, low. He had left a commission business and become an iron maker mainly to carry out a process which he had invented, by which larger sugar-kettles were to be made. The "Kelly kettles" became well known among the Southern farmers.

He had married Miss Mildred A. Gracy, of Eddyville, and secured the financial backing of his wealthy father-in-law. His iron plant was a fairly good one, close to high-grade ore, and needing the work of about three hundred negro slaves. Mr. Kelly was strongly opposed to slavery, and tried to escape being a slaveholder by importing Chinese. He was the first employer in this country to make this experiment, and found it successful; but international complications prevented him from putting it into practice on a larger scale.

Kelly's first aim was to make good wrought iron, for his kettles and for customers in Cincinnati. His iron was refined in what was called a "finery fire"—a small furnace in which about fifteen hundred pounds of pig iron were placed between two layers of charcoal. The charcoal was set on fire, the blast was turned on, and more charcoal was added until the iron was thoroughly refined—a slow, old-fashioned process which used up quantities of charcoal.

In a year all the wood near the furnace had been burned, and the nearest available source of supply was seven miles distant—a fact with which the unbusinesslike Kelly had not

THE ROMANCE OF STEEL

reckoned. To cart his charcoal seven miles meant bankruptcy, unless—he could invent a way to save fuel.

KELLY'S EPOCH-MAKING DISCOVERY

One day he was sitting in front of the "finery fire" when he suddenly sprang to his feet with a shout, and rushed to the furnace. At one edge he saw a white-hot spot in the yellow mass of molten metal. The iron at this spot was incandescent. It was almost gaseous. Yet there was no charcoal—nothing but the steady blast of air. Why didn't the air chill the metal? Every iron-maker since Tubal Cain had believed that cold air would chill hot iron. But Kelly was more than an iron-maker. He was a student of metallurgy, and he knew that carbon and oxygen had an affinity for each other. He knew what air was and what iron was, and like a flash the idea leaped into his excited brain—*there is no need of charcoal. Air alone is fuel.*

It was as simple as breathing, and very similar, but no human mind had thought of it before. When the air is blown into the molten metal, the oxygen unites with the impurities of the iron and leaves the pure iron behind. Oxygen—that mysterious element which gives life to all creatures, yet which burns up and destroys all things; oxygen, which may be had without money in infinite quantities—was now to become the creator of cheap steel.

Kelly was carried away by the magnitude of his idea. His unrestrained delight, after months of depression, amazed every one in the little hamlet. Most of his neighbours thought him crazy. Only three listened with interest and sympathy—two English iron-workers and the village doctor.

At first Kelly snapped his fingers at opposition. "I'll prove it publicly," he said. At his invitation a number of jesting iron-makers from western Kentucky gathered around

BIRTH OF THE BESSEMER PROCESS

his furnace the following week, and Kelly, caring nothing for patents, explained his idea and gave a demonstration of it. Air was blown through some melted pig iron, agitating it into a white heat, to the amazement of the brawny onlookers. A blacksmith seized a piece of the refined iron, cooled it, and with his hammer produced in twenty minutes a perfect horse-shoe. He flung it at the feet of the iron men, who could not believe their eyesight, and, seizing a second scrap of the iron, made nails and fastened the shoe to the foot of a near-by horse. Pig iron, which cannot be hammered into anything, had been changed into malleable iron, or something very much like it, without the use of an ounce of fuel.

Surely, the thing was too absurd. Seeing was not believing. "Some crank 'll be burnin' ice next," said one. The iron men shook their heads and went home, to boast in after years that they had seen the first public production of "Bessemer" steel in the world.

Kelly called his invention the "pneumatic process," but it became locally known as "Kelly's air-boiling process." He proceeded at once to refine his iron by this method. He sent his steel, or refined iron, or whatever it was, to Cincinnati, and no flaws were found in it. Years before Mr. Bessemer had made any experiments with iron, there were steamboats on the Ohio River with boilers made of iron that had been refined by Kelly's process.

KELLY'S APPARENT FAILURE

But now came a form of opposition that Kelly could not defy. His father-in-law said: "Quit this foolishness or repay the capital I have advanced." His Cincinnati customers wrote: "We understand that you have adopted a new-fangled way of refining your iron. Is this so? We want our iron made in the regular way or not at all."

About the same time Kelly's ore gave out. New mines

THE ROMANCE OF STEEL

had to be dug. Instead of making ten tons a day, he made two.

He surrendered. He became outwardly a level-headed, practical, conservative iron-maker, and won back the confidence of his partners and customers. Then one night he took his "pneumatic process" machinery three miles back into a secluded part of the forest and set it up. Like Galileo, he said: "Nevertheless, air *is* fuel!" No one knew of this secret spot except the two English iron-workers whom he brought out frequently to help him.

Under such conditions progress was slow. By 1851 his first converter was built—a square, brick structure, four feet high, with a cylindrical chamber. The bottom was perforated for the blast. He would first turn on the blast, and then put in melted pig iron with a ladle. About three times out of five he succeeded. The greatest difficulty was to have the blast strong enough; otherwise the iron flowed through the air-holes and clogged them up.

His second converter was made with holes in the side, and worked better. He discovered that he could do ninety minutes' work in ten, and save further expense in fuel. One improvement followed another. In all, he built seven converters in his backwoods hiding-place.

In 1856 Kelly was told that Henry Bessemer, an Englishman, had taken out a United States patent for the "pneumatic process." This aroused Kelly's national pride more than his desire for a monopoly, and he at once filed in the patent office his claims to priority of invention. The patent office was convinced and granted him United States Patent No. 17,628, declaring him to have been the original inventor.

Then came the panic of 1857, and Kelly was one of the thousands who toppled over into bankruptcy. To get some ready money, he sold his patent to his father for a thousand dollars. Not long afterwards, the elder Kelly died, and



KELLY'S FIRST TILTING CONVERTER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRTH OF THE BESSEMER PROCESS

willed his rights to his daughters, who were shrewd, business-like women. They regarded their brother William as a child in financial matters, and refused to give him his patent. After several years of unjustifiable delay, they transferred it to Kelly's children. And so, between his relations and his creditors, Kelly was brought to a standstill.

KELLY'S FIRST TILTING CONVERTER

But even at the lowest point of defeat and poverty, he persevered. Without wasting a day in self-pity, he went at once to the Cambria Iron Works, at Johnstown, Pennsylvania, and secured permission from Daniel J. Morrell, the general superintendent, to make experiments there.

"I'll give you that corner of the yard and young Geer to help you," said Morrell.

In a short time Kelly had built his eighth converter—the first that really deserved the name—and was ready to make a public demonstration. About two hundred shopmen gather around his queer-looking apparatus. Many of them were puddlers, whose occupation would be gone if Kelly succeeded. It is often fear that makes men scoff, and the puddlers were invariably the loudest in ridiculing the "Irish crank."

"I want the strongest blast you can blow," said Kelly to Leibfreit, the old German engineer.

"All right," answered Leibfreit. "I gif you blenty!"

Partly to oblige and partly for a joke Leibfreit goaded his blowing engine to do its best, hung a weight on the safety-valve, and blew such a blast that the whole contents of the converter went flying out in a tornado of sparks. The air, it must be remembered, will take away, first, the impurities in the iron, and, second, the iron itself, if it is too strong or too long continued. This spectacular failure filled the two

THE ROMANCE OF STEEL

hundred shopmen with delight. For days you could hear in all parts of the work roars of laughter at "Kelly's fireworks." In fact, it was a ten years' joke in the iron trade.

In a few days Kelly was ready for a second trial, this time with less blast. The process lasted more than half an hour, and was thoroughly unique. To every practical iron-maker, it was the height of absurdity. Kelly stood coatless and absorbed beside his converter, an anvil by his side and a small hammer in his hand. When the sparks began to fly, he ran here and there, picking them up and hammering them upon his anvil. For half an hour every spark crumbled under the blow. Then came one that flattened out, like dough—proving that the impurities had blown out. Immediately he tilted the converter and poured out the contents. Taking a small piece, he cooled it and hammered it into a thin plate on his anvil, proving that it was not cast iron.

He had once more shown that cold air does not chill molten iron, but refines it with amazing rapidity if blown through it for the proper length of time. His process was not complete, as we shall see later, but subsequent improvements were comparatively easy to make. Bessemer, by his own efforts, did not get any better "steel" in 1855 than Kelly had made in 1847.

For this exact account of Kelly's achievements, I am indebted to Mr. J. H. Geer, who was his helper at Johnstown, and to others who were eyewitnesses of his earlier success in western Kentucky.

KELLY'S LATER CAREER

Kelly remained at Johnstown for five years. By this time he had conquered. His patent was restored to him, and Mr. Morrell and others bought a controlling interest in it. He was now honoured and rewarded. The "crank" suddenly became a recognised genius. By 1870 he had received thirty

BIRTH OF THE BESSEMER PROCESS

thousand dollars in royalties; and after his patent was renewed he received about four hundred and fifty thousand more. After his process had been improved and widely adopted, Kelly spent no time claiming the credit or basking in the glory of his success. No man was ever more undaunted in failure and more modest in victory. He at once gave all his attention to manufacturing high-grade axes in Louisville, and founded a business which is to-day being carried on at Charleston, West Virginia, by his sons.

When more than seventy years of age he retired and spent his last days at Louisville. Few who saw the quiet, pleasant-faced old gentleman in his daily walks knew who he was or what he had accomplished. Yet, in 1888, when he died, it was largely by reason of his process that the United States had become the supreme steel-making nation in the world. He was buried in the Louisville cemetery. His wife is still living.

MUSHET PERFECTS THE NEW PROCESS

The new process was perfected by a third inventor, Robert F. Mushet, a Scotsman. He solved a problem which had baffled both Kelly and Bessemer—how to leave just enough carbon in the molten metal to harden it into the required quality of steel. Instead of frantically endeavouring to stop the process at exactly the right moment, Mushet asked:

“Why not first burn out *all* the carbon, and then pour back the exact quantity that you need?”

This, too, was a simple device, but no one had thought of it before. Since then other improvements have been added by Holley, W. R. Jones, Reese, Gilchrist, and Thomas.

The new metal was soon called by the name of “Bessemer steel.” Strictly speaking it was not steel in the original use of the word. It was a new substance very much like wrought iron. It was not hard enough to serve for all purposes. For

THE ROMANCE OF STEEL

knives, for springs, for hammers, for a thousand finer uses, steel must still be made by slower and more careful methods. The Bessemer product does the rougher work, where quantity and cheapness are essential.

It is probable that one reason for the naming of Bessemer steel was the fact that true steel was then selling at three hundred dollars a ton. The new metal might have been less highly esteemed had it been announced merely as a modified form of iron.

THE FIGHT FOR STEEL PATENTS

In 1870 both Kelly and Bessemer applied to the United States Patent Office to have their patents renewed. The commissioner of patents refused to extend Bessemer's, stating that he had no right to a patent in the first place, but Kelly's was extended for seven years, on the ground that he had not yet received sufficient remuneration for his invention. As soon as it was known that Kelly's patent was to be renewed, the patent office was fairly mobbed by objectors. Never before had there been such opposition to the renewal of a patent. The steel-makers and the railroad men united in a chorus of protest. The dread of paying higher royalties drove them to attack Kelly's claims. Bessemer, whose right to royalties was now at an end, was lauded as the original inventor, while Kelly was vilified as an interloper. Out of this opposition sprang the exaltation of Bessemer and the belittling of Kelly, which deprived America of the credit for one of the world's greatest inventions.

Kelly's claim is supported, not only by the United States Patent Office, but by the most eminent authorities. "Kelly in America, Bessemer, Mushet, and Goransson in Europe, discovered and developed the pneumatic process of treating pig iron," says Robert W. Hunt, the veteran steel expert of Chicago. James Park, one of the Pittsburgh "fathers of steel,"



SIR HENRY BESSEMER



BIRTH OF THE BESSEMER PROCESS

declared that "the world will some day learn the truth, and in ages to come a wreath of fame will crown William Kelly, the true inventor of the Bessemer process." Even an English writer, Zerah Colburn, records that "the first experiments in the conversion of melted cast iron into malleable steel were made in 1847 by William Kelly." And the greatest living authority on the history of American iron and steel—James M. Swank, who has been the secretary of the American Iron and Steel Association for a generation—says:

"Mr. Kelly claims the discovery of the pneumatic principle of the Bessemer process several years before it dawned upon the mind of Mr. Bessemer, and the validity of this claim cannot be impeached."

And so, Henry Bessemer, who was second in the race, received ten million dollars, world-wide fame, and knighthood; while William Kelly, who was first, received half a million dollars and comparative oblivion. Kelly was not to any degree embittered by his country's disregard of him. He had an unwavering conviction that everything would be made right. Shortly before his death he said to his children:

"The day will come when some one will do me justice."

Mushet fared even worse than Kelly. For him there was neither fame nor money. He lost his patent by failing to pay the necessary fees, and the steel-makers joyfully appropriated his invention without any fear of a lawsuit. In his later years he received a pension of three hundred pounds annually from Bessemer, and a slight public acknowledgment of his work. Very little is known of Mushet. He will doubtless remain one of the world's unrecognised and unrewarded benefactors.

BESSEMER AND HIS INVENTIONS

As a matter of history, the names of Bessemer and Kelly should be linked together like those of Washington and Jef-

THE ROMANCE OF STEEL

person. The original idea first came from the brain of Kelly, but the commercial success of the new process was due to Bessemer's machinery, perfected for him by Galloway & Company, of Sheffield. Bessemer was one of England's greatest inventors, having one hundred and twenty patents to his credit. He was the son of an inventor—a Frenchman who had been driven to London by a social explosion in Paris. He began to earn his living by engraving labels for patent medicines. He invented a velvet machine, a sugar-making process, a glass-polisher, a ventilator, a bronze powder process, and so forth. His first invention, a method of stamping public documents, was—so he considered—stolen from him by the British Government. He was very poor at the time, and this real or supposed injustice made an indelible mark upon his character. Henceforward he was bitterly aggressive in the protection of his rights.

Seven years after Kelly's success at Eddyville, Bessemer had a conversation with Napoleon III., newly become Emperor of France. The latter complained that the metal used in making cannon was of poor quality and expensive; and at his suggestion, Bessemer at once began experiments in London. "I had very little to unlearn" about the metallurgy of iron, he admits. After a few months he finished a toy cannon and sent it to the emperor. To use his own words, in 1855, "the idea struck me of making malleable iron by introducing air into the fluid metal." Later in life, he said that the idea was suggested to him by Nasmyth's process of blowing steam into molten metal. Bessemer was quite capable of originating the idea himself, but it would be strange if in eight years he had not heard something of Kelly's "pneumatic process." It was well known in Cincinnati, and letters passed between the iron men of Cincinnati and England every week. It has been suggested—but apparently there is not a particle of evidence to substantiate the idea—that the two English iron-workers

BIRTH OF THE BESSEMER PROCESS

who helped Kelly at the Suwanee Works may have carried his secret across the Atlantic.

Bessemer met with as much opposition in England as Kelly had encountered in America. Like Kelly, he made nothing for years but "encouraging failures." At his first demonstration, the blast was so strong that it blew three-fourths of the iron out of the converter. When he read a paper before the British Association for the Advancement of Science on "The Manufacture of Malleable Iron and Steel Without Fuel," every British steel-maker roared with laughter at the "crazy Frenchman." It was voted not to mention his "silly" paper in the minutes of the association.

WHAT A MODERN CONVERTER IS

To-day there are more than a hundred Bessemer converters in the United States, breathing iron into steel at the rate of eighteen billion pounds a year. It is well worth a visit to Pittsburgh to see one of these tamed Etnas in full blast. Nothing else in the world is like it. As we shall see, one look at a converter transformed Andrew Carnegie from a company-promoter into a steel man for life.

To describe it in a few words, a converter is a huge iron pot twice as high as a man. It is swung on an axle, so that it can be tilted up and down. Although it weighs as much as a battalion of five hundred men, it can be handled by a boy. About thirty thousand pounds of molten iron are poured into it; and then, from two hundred little holes in the bottom, a strong blast of air is turned on, rushing like a tornado through the metal. Millions of red and yellow sparks fly a hundred feet into the air.

The converter roars like a volcano in eruption. It is the fiercest and most strenuous of all the inventions of man. The impurities in the iron—the phosphorus, sulphur, silicon, and carbon—are being hurled out of the metal in this paroxysm

THE ROMANCE OF STEEL

of fury. The sparks change from red to yellow; then suddenly they become white.

“All right!” shouts the grimy workman in charge.

The great pot is tilted sideways, gasping and coughing like a monster in pain. A workman feeds it with several hundred pounds of a carbon mixture, to restore a necessary element that has been blown out. Then it is tilted still farther; its lake of white fire is poured into a swinging ladle and slopped from the ladle into a train of huge clay pots, pushed into place by a little locomotive. The converter then swings up and receives another fifteen tons of molten metal, the whole process having taken only a quarter of an hour.

THE TITANS OF THE STEEL INDUSTRY

The iron and steel business has always developed big men; and the adoption of the Bessemer process for the first time made it possible for big men to do big work. It ushered in the Titanic Period of the steel trade. The men and the opportunity arrived together. Foremost among these Titans were Captain Eber B. Ward, Abram S. Hewitt, Dr. C. G. Hussey, Daniel J. Morrell, John Fritz, Henry Chisholm, Alexander L. Holley, Captain William R. Jones, B. F. Jones, and Andrew Carnegie. It was this group of men who began with thousands and left hundreds of millions—who found feebleness and left strength—who took a fourth-rate steel business and raised it to international supremacy. They were the foundation stones upon which the whole massive structure rests.

The first capitalist to appreciate the Bessemer process was Captain Eber B. Ward. This extraordinary man, whose life was a crescendo of self-help, may be called the pathfinder of the American steel trade. He made the first commercial Bessemer steel at his Detroit plant in 1864, and in the following



CAPTAIN EBER B. WARD



BIRTH OF THE BESSEMER PROCESS

year he produced the first steel rails in America at his rolling-mill in Chicago. Ward was the son of a poor lighthouse-keeper. When he was nine years of age his mother died and he was set to work as cabin-boy in a shabby little schooner. By the time he was full grown he knew everything about a ship from keel to flag, and had bought a small vessel of his own. For years he continued to buy ships, or build them, until he became the steamship king of the Great Lakes. Then, in middle life, he suddenly flung aside his prestige, sold most of his fleet, built furnaces and rolling-mills, and became the first of the steel kings.

WARD, THE FIRST STEEL MILLIONAIRE

No sooner had Ward begun to make and sell Bessemer steel than he found himself plunged into a patent war. He had bought the Kelly and Mushet patents, but the complete Bessemer process was threefold. It involved, first, the use of air as fuel, originated by Kelly; second, the addition of a carbon mixture, originated by Mushet; and, third, the use of a tilting converter and casting ladle, originated by Bessemer. Ward had two-thirds of the patents, and was opposed by Alexander L. Holley, who had bought the Bessemer rights. Neither could make steel satisfactorily without infringing on the legal rights of the other. Each man had his partners. With Ward were Zoheth S. Durfee, of New Bedford, and Daniel J. Morrell, of Johnstown. With Holley were John F. Winslow and John A. Griswold, of Troy.

Here we come against one of the most puzzling mysteries in the story of steel. Ward and Durfee were both shrewd, self-made, aggressive, wealthy men. They possessed a two-thirds control of a process which has since that time produced more than three billion dollars' worth of steel. The Kelly patent, which they owned completely, did not expire until 1878. It was not likely that the American courts would up-

THE ROMANCE OF STEEL

hold the claims of Bessemer. Kelly had already beaten him in the patent office, and did so again in 1871. Yet at the close of a year's wrangling and legal cannonading, the Ward forces suddenly flew the white flag, and surrendered all their patents to Holley in return for a thirty per cent. interest in the consolidation. It was apparently a case of the dog swallowing the alligator.

Mr. Swank suggests that Ward and his partners were obliged to sell out for the reason that the Troy capitalists controlled the Bessemer machinery, without which the Kelly and Mushet patents were of little value. But this explanation does not clear up the mystery. It was the only instance in his long career in which Ward made such a disastrous bargain.

When Ward died of apoplexy in 1875 his estate was valued at \$5,355,000. But he had years before lost his chance of being the czar of steel. He was a man of strange extremes—self-controlled and passionate; shrewd and credulous; persistent and changeable. President Grant wished him to become Secretary of the Treasury, but Ward found it impossible to disentangle himself from his business affairs. The bulk of his great fortune went to his wife and to Clara Ward, his daughter, widely known as the *Princesse de Chimay*.

THE SUCCESSORS OF CAPTAIN WARD

Winslow, Griswold, and Morrell now became the "big three" of the American steel business. They had a monopoly much more complete than that possessed to-day by the United States Steel Corporation. Troy, like Detroit, had for a short time the hope of being what Pittsburgh now is—the greatest steel city of the world. It produced Bessemer steel ten years before Pittsburgh, and Winslow and Griswold were men of enterprise and capital.

As for Morrell, he deserves to be called the founder of

BIRTH OF THE BESSEMER PROCESS

the Johnstown steel business, which has since become world famous. "The Cambria Works have produced more great steel-makers than any other works in the United States," said Mr. Carnegie generously. Morrell was a man who wonderfully blended conservatism and progressiveness. When his directors opposed the adoption of the new steel process, he stood up in the meeting and said:

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

It is said that in the earlier part of Mr. Carnegie's career he proposed to make Morrell one of his partners, but could not obtain the latter's consent.

"You are too flighty," said the older man to the younger.

THE WORK OF ALEXANDER L. HOLLEY

But there was a young man of thirty-four who stood behind the "big three"—a young man with no capital except his genius, who becomes at this point the central figure in the steel drama, Alexander L. Holley. To describe Holley fairly requires not only words, but music and painting and sculpture. Handsome as a Greek god, with the brain of an engineer, the heart of a woman, and the soul of a poet, Holley won a larger share of the love and respect of both the American and European steel-makers than any other individual has received, before or since. There was nothing local about his work. He was as ubiquitous as a spirit, erecting steel plants at Troy, Chicago, Joliet, Pittsburgh, Braddock, Johnstown, Bethlehem, Harrisburg, Scranton, and St. Louis. He went from works to works as a bishop travels his diocese, suggesting, correcting, and always improving.

It was Holley who made the Bessemer process easy and swift. It was he who made possible that immense production which

THE ROMANCE OF STEEL

has amazed the world and clogged Pittsburgh with millions. When the river of gold that flowed into the steel trade's treasury suddenly became wider and deeper, it was because Holley had been at work enlarging the channel. He worked out what we may rightfully call the American plan of steel-making. He made war on clumsiness. He taught the steelmen what they had never known before—the value of a second. His personal magnetism, his eloquent tongue, and his ready pen made him an ideal instructor. He became the leader and inspirer of a body of young men, among whom were Robert Forsyth, John E. Fry, George Fritz, Robert W. Hunt, Owen Leibert, P. Barnes, D. N. Jones, and William R. Jones. Holley's one thought was that "America must be first," and the building of steel-mills was to him more a matter of patriotism than of business.

For two decades Great Britain led the world in the making of Bessemer steel. Then, exactly twenty-five years ago, the United States forged ahead and in a short time outclassed all competitors. The sceptre of power passed from Troy to Pittsburgh, and from the "big three" to an unknown young Scotchman who had been a clerk in the employ of the Pennsylvania Railroad. Dear iron had been replaced by cheap steel. Orrin W. Potter and William Chisholm were building up the steel trade in Chicago; Henry Chisholm had established it in Cleveland; Abram S. Hewitt was making structural steel at Trenton; Captain "Bill" Jones was beating the world's records in rail-making at Braddock; and the American iron and steel trade was at last upon a solid footing, after more than two centuries of struggle and disaster.

"BILL" JONES STEPS UPON THE STAGE

At this point in the drama of steel there steps upon the stage perhaps the most interesting figure of all who have played a part in it—Captain William R. Jones. It was "Bill" Jones

BIRTH OF THE BESSEMER PROCESS

who took the invention of Kelly and Bessemer into his strong hands and developed it into one of the wonders of the world. It was his work that gave the Carnegie company its first uplift from among a mob of competitors. It was his amazing record that first startled England and left it far in the rear.

As the manager of a steel plant, as the leader of a vast body of workmen, and as a mechanical genius, it is safe to say that Captain Jones has never had a superior. If he had not hammered down the cost of steel rails with mighty blows, the golden stream of profits might never have been widened into the Lake of Billions. From the time when he wrecked the Catasauqua schoolhouse, because the teacher had unjustly whipped one of his boy chums, until the moment of his tragic death, the life of Bill Jones was packed with adventure and romance; yet the full story of his career is here made public for the first time.

His father was a poor Welsh pattern-maker, the religious and intellectual leader of the Welsh in the village of Catasauqua, Pennsylvania. The cottage in which he lived is still standing, No. 315 in a row of "company houses." The principal man in the village was David Thomas, who has justly been called "the father of the American iron trade." It was he who successfully introduced into this country the manufacture of pig iron with anthracite coal, and the "hot blast" furnace—the latter being an idea which originated with the Scottish engineer Neilson, and which, with its great saving of fuel in the smelting of ore, marked an advance in the making of pig iron comparable in importance to Kelly's invention in the field of steel. Thomas built big furnaces, instead of little ones; and worked powerfully to put the iron trade upon a solid footing with the new fuel. In 1849 he became the employer of "Billy" Jones, who was then a ten-year-old youngster, with a local reputation for recklessness and mischievousness.

THE ROMANCE OF STEEL

Among the men who knew Captain Jones in his later years only, it has always been more or less of a mystery how he acquired his unusual command of language and knowledge of classic literature, without any sort of regular education. The mystery is made clear by the fact that, like Mr. Carnegie, Captain Jones had access to a library and made good use of it. His father had a hundred and fifty volumes—the largest collection in the village. They were mainly historical books, such as Plutarch and Josephus, with Shakespeare and other miscellaneous classics. Billy, when not robbing hens' nests or pelting stones at the Irish boys at the other end of the hamlet, was lying prone on the uncarpeted floor of the wooden cottage, wrestling with the long words in one of his father's precious books. Shakespeare was his favourite author—a taste which he shared with General Nathanael Greene, the iron-maker patriot of the Revolution.

THE PERSONALITY OF "BILL" JONES

From boyhood Captain Jones was absolutely indifferent to danger or pain. Ethan Allen, who sat in a dentist's chair and had a good tooth extracted, merely to give encouragement to a timid old lady; Paul Kruger, who amputated one of his own thumbs with a jack-knife; and Captain Jones, who when a boy cut his finger-nail open to see what was underneath—these three may be compared as types of recklessness and hardihood. During the Civil War, in which he fought at Fredericksburg, Chancellorsville, and the storming of Fort Fisher, his regiment came, on one occasion, to a river that had to be crossed by a pontoon bridge.

"Hanged if I'll wait for a bridge!" shouted Jones, plunging into the muddy water head first.

After the splash, he found himself in about two feet of water, with his nose split from top to tip. Never possessing the slightest degree of caution, he had leaped into the river with-

BIRTH OF THE BESSEMER PROCESS

out thinking of its depth. To him the only consideration was to get across.

When he was eighteen, he ran away from Catasauqua, and tramped about the country, finally landing in Chattanooga, where he met Miss Harriet Lloyd, wooed her fervently, and won her. His first job after marriage was in the Cambria Works, at Johnstown. He was taken on at two dollars a day, and soon promoted. He and William Kelly arrived in Johnstown about the same time, but knew little of each other. At that period there seemed nothing in common between the quiet, thoughtful Kelly and the roistering Jones, yet without both types of men there would have been no billion-dollar steel corporation.

For sixteen years Jones remained at Johnstown, gaining little except the reputation of being the most popular sub-boss in town. Often he would stop work and take all his men to a baseball game or a horse-race. Fun and frolic seemed, until he was thirty-four, to be the only aim of his life. Morrell, his Quaker employer, would have discharged him if it had not been for the undeniable fact that Jones could get more work out of a gang of men than any other boss in the iron business.

When George Fritz, manager of the Cambria Works, died suddenly in 1873, Jones stood next in line for the position; but Morrell considered him too frolicsome and irresponsible, and promoted Daniel N. Jones over the captain's head. Both Joneses had been Catasauqua boys, and the two were good friends. Bill heard the news first, and told Dan.

"I'm surprised," said Dan; "I was sure that you would get the place."

"So was I, but it seems not," replied Bill.

Dan hesitated a moment, and then said:

"Well, you are entitled to it, Bill, and I won't take it."

"Yes, you must take it," answered Bill. "The company

THE ROMANCE OF STEEL

wants you, not me, and it's a great chance for you. As for me, I'm going to straighten up, go somewhere else, and show them what I can do."

It proved to be the turning-point in Captain Jones' career. From that moment he was no longer an irresponsible youth, but a man of conscious power and purpose.

JONES GOES TO THE BRADDOCK WORKS

At this juncture Andrew Carnegie enters for the first time into the story of steel. It was the terrible panic year, and he was struggling successfully to avert bankruptcy and to build his first steel plant. Up to this date he had made iron, but not a pound of steel. Instead of being the first maker of Bessemer steel, as is often alleged, the fact is that Mr. Carnegie was the eleventh, and did not join the procession until nearly twenty years after the process was patented by Kelly and Bessemer.

Hearing that Captain Jones had resigned, Carnegie not only hired him as superintendent of the new works at Braddock, near Pittsburgh, but also used him as a bell-wether to attract scores of the highly skilled steel-workers of Johnstown. This was a master-stroke, as skilled Bessemer steel-makers were scarcer at that time than four-leaved clovers. In 1875, surrounded by his faithful men from Johnstown, Jones began to show the world how to make steel.

Full credit must be given to the English steel-makers for creating a market for steel rails by fairly forcing them on the railroads. Practically the whole of the pioneer educational work among American railroad men was done by English drummers. In 1861, for instance, a Sheffield agent tried to sell steel rails to the president of the New York, New Haven, and Hartford road. One of the principal directors was sitting in the room, reading a newspaper. He looked up, and with a gesture of supreme contempt, exclaimed:



DANIEL J. MORRELL



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRTH OF THE BESSEMER PROCESS

“Steel rails! Bosh! Stuff! Nonsense! Humbug!”

This was at first the universal reception of the steel rail agents. Steel rails meant a larger outlay for equipment, and, for a time, smaller dividends. However, eight years afterward, more than fifty different American railroads were using steel rails, mainly made in England, the Pennsylvania being the first to try a few hundred tons.

When Captain Jones “straightened up” and joined the Carnegie forces, the United States was a buyer, not a seller, of steel. England made as much iron and steel in four months as America did in a year. Steel rails sold for one hundred and twenty dollars a ton. England appreciated the Bessemer process ten years sooner than the United States. She was compelled to do so by the commercial enterprise of Sir Henry Bessemer, who started a plant of his own and cut prices. Great Britain was supposed to have as complete control of the steel trade as she has to-day of the shipping. She was the iron and steel “workshop of the world,” and she continued to be—until Bill Jones straightened up.

HOW JONES BROKE ALL THE RECORDS

In his first fifteen weeks of steel-making, Jones turned out nearly twice as much as any one had made before with a similar equipment. This was well enough, but a year later he made more steel in a week than the average plant had been producing in six weeks. While every one in the steel world was gasping at the news, Jones took a fresh grip and once more doubled his output, bringing it up to thirty-three hundred tons a week.

Several years before, John A. Griswold had made a bet with Holley that the Troy plant could not produce fifteen hundred tons a month. He lost his money, but it is certain that even Holley would not have wagered that any one could make four-

THE ROMANCE OF STEEL

Second, the "strong but pleasant rivalry" between different plants.

Third, the employment of mixed nationalities.

Fourth, the eight-hour day. "Flesh and blood cannot stand twelve hours' continuous work," he said.

Fifth, the use of the most up-to-date machinery.

The veteran steel-makers of England listened to the paper in dignified silence. At its close the president, Mr. J. T. Smith, rose slowly to his feet.

"Of course," said he, "when this man speaks of making one hundred and twenty-three thousand tons in ten months, he means a net ton of two thousand pounds."

"No," replied the secretary. "He means a gross ton of twenty-two hundred and forty pounds. I have also received a letter from Captain Jones, saying that since this paper was written he has beaten his record by thirty-three tons a week."

Again there was silence; then another member rose.

"Working with such reckless haste," he said, "his steel is certain to be variable and inferior."

"On the contrary," replied the secretary, "Mr. Jones says that the average variation is not more than one degree from the quality aimed at."

There was nothing more to be said, and the meeting adjourned.

Six months later the steel-makers of England met again, and a second paper from Captain Jones was read. Sir Henry Bessemer was present, but made no comment on Jones' announcement that Braddock was making steel faster than ever. Holley opened the discussion, and in a friendly way put the British ironmasters on the gridiron for fifteen minutes. He pointed out that the average British ironworker produced four hundred and twenty tons of iron a year, while the American worker produced five hundred and fifty-five.

BIRTH OF THE BESSEMER PROCESS

“Our steel, made quickly,” said he, “is the same quality as your steel, made slowly. You increase your output by making more machinery of the same kind, while we increase ours by making a new machine. Of course,” continued Holley, smiling, “as my capital is invested in America, and not in England, I regard these English habits with resignation, even with cheerfulness.” His genial criticism was received in silence. No one answered. It was unanswerable. The star of the steel empire had moved westward.

JONES AND HIS “BIG SALARY”

Among all the partners and employees of the Carnegie Company, Jones earned the most and received the least. This was largely his own fault, as he refused to be a shareholder.

“No, Mr. Carnegie, I’m much obliged,” said he when he was offered a partnership. “I don’t know anything about business, and I don’t want to be bothered with it. I’ve got trouble enough here in these works. I’ll tell you what you can do”—these were his exact words—“you can give me a hell of a big salary.”

“After this, captain,” replied Carnegie, “you shall have the salary of the President of the United States—twenty-five thousand dollars.” This sounded well, but in a short time the President’s salary was scarcely pin-money compared to the amounts that were yearly shovelled into each shareholder’s pocket.

When the writer asked for an estimate of Jones’ work from James Gayley, the first vice-president of the Steel Trust, Mr. Gayley replied emphatically:

“You can say that Captain Jones, through his mechanical contributions to the development of the steel-making industry, accomplished fully as much as Mushet or Sir Henry Bessemer.”

THE ROMANCE OF STEEL

The famous "scrap-heap" policy was originated by Jones. He did not believe in waiting until his machinery was worn out. The moment that an improvement was invented, the old machinery was dragged to the scrap-heap, and the latest devices put in its place. He made the shareholders gasp on several occasions by asking permission to smash up half a million dollars' worth of machinery that was as good as new, but outgrown. They were wise enough to give him a free hand, and to buy him whatever he ordered.

Practical suggestions flashed from Jones like sparks from his converters.

"See here, why can't we armor-plate that hose?" he asked one day. "Get a coil of wire and wind it around the hose to keep it from bursting."

This idea, which has been generally adopted, was simple enough; but millions of people had looked at hose without thinking of it.

His greatest invention is known by the name of the Jones mixer. This is a monster iron box, brick-lined, capable of holding half a million pounds of melted metal. Into it is poured the molten iron from different furnaces, so that it may be mixed and made uniform in quality. A train of small iron cars, or ladles, steams up alongside of the mixer, each ladle full of sparkling, splashing metal. The mixer lies lower than the track, and the cars, one by one, are tipped over so that they spill their load into its wide mouth. Then it is rocked to and fro, like the cradle of a sun god, until its contents are thoroughly homogeneous, when they are sent on their turbulent way to the converter.

"The Jones mixer was, and still is, invaluable to us," said James Gayley—a fact which was shown two years ago, when the Steel Trust secured an injunction to prevent one of its competitors from using the device.

BIRTH OF THE BESSEMER PROCESS

JONES AS A LEADER OF MEN

Kelly lived in a world of ideas; Ward, in a world of money; Holley, in a world of scientific knowledge; and Jones in a world of *men*. Iron and human nature were his raw materials. He put the two together and made steel.

"It wasn't the chemists and the scientists, mainly, who developed the steel business," said the veteran John Fritz to the writer. "It was the practical man who stood among his workmen and hammered everything out inch by inch in the shops."

Cromwell showed no greater generalship in handling his invincible Ironsides than Captain Jones displayed in drilling his iron-workers. He was an absolute monarch of his big steel works, but a just monarch, who rewarded only the good and punished only the bad.

Nothing escaped his notice. Every day, as he stormed up and down the shops, his talk ran on in this fashion:

"Do you get enough fresh air in that corner, Joe? I'll have a window put in for you."

"See here, Smith! If you don't pay your honest debts you can't work for me any longer. You go and settle up with that grocer, or I'll find out why!"

"Shove 'er along, boys! All together! Do you want to get licked by those Joliet farmers?"

"Say, Jim! When you're going home to-night, take this piece of paper and give it to Jack Sullivan's wife. Jack died in the hospital last night, and, confound it, she's got five children!"

The "piece of paper" would usually be a deed to the cottage in which the bereaved family lived.

"There are many Braddock widows that don't forget Captain Jones," said the old doorkeeper.

He scattered his thousands with a free hand among his

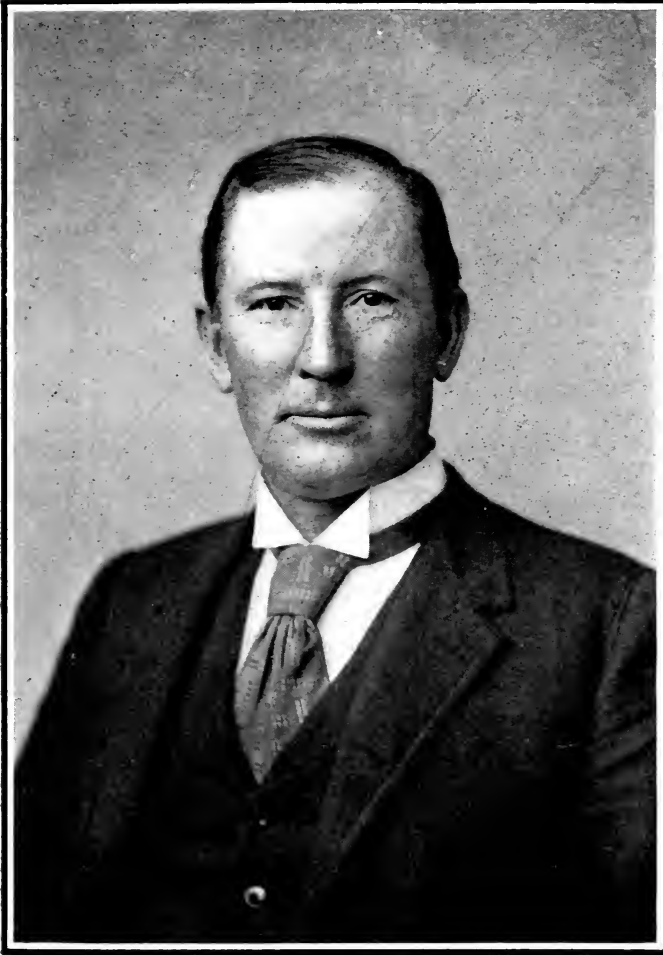
THE ROMANCE OF STEEL

men and their families, and accumulated comparatively little for himself. He was, in short, an ideal captain of industry, leading his men on to victory after victory. He was hot-tempered and rough. Under the excitement of the moment, he would often sweep down upon everything in his way with the velocity of a tornado, discharging his best men, and hurling anathemas right and left. But the sky soon cleared. The discharged men would be put back. Jones was as transparent as the day, and as ready to end a quarrel as to begin one.

On the day after the Johnstown flood, he took three hundred of his men and at his own expense brought them to the wrecked city, where they worked for two weeks to restore the property that had been destroyed. Others sent money and sympathy, but Jones gave himself. That was his way.

He was as quick to resent as he was to forgive. "I carried a revolver for two years to protect myself from Bill Jones," admitted a wealthy coal operator—one of Pittsburgh's foremost Presbyterians. "It was this way," he continued. "Carnegie was the first man to start Sunday work in this region. I was opposed to it, and told Jones so. We quarrelled. Soon afterward I heard that he had threatened to 'put a head' on me the next time we met. He was much stronger than I was, so I carried a revolver to defend myself. Nine months before his death, he came to me one morning and said frankly: 'Well, you were right and I was wrong about that Sunday work. If I had my life to live over again, I wouldn't run a mill on Sunday.' Several times after that he came to the little Sunday School of which I was the superintendent, and always left a five-dollar or ten-dollar bill on the collection plate."

Jones' blue eyes looked every man and every difficulty full in the face. Sham, trickery, and meanness he despised.



CAPTAIN WILLIAM R. JONES



13

BIRTH OF THE BESSEMER PROCESS

HOW JONES MET HIS DEATH

Jones died as he had lived—in the midst of an industrial battle, at the head of his men. He was killed on the firing-line. In 1889 one of the Braddock furnaces had been working badly. Its contents had “bridged,” just as a raft of logs will jam in a narrow part of a river. A squad of men were trying to break the “bridge,” Jones, as always, being in front. Suddenly it broke, and the fiery contents crashed through the outer wall of the furnace, falling directly on the head and shoulders of Captain Jones. He sprang forcibly backward and fell into a pit, striking his head upon the iron edge of a car. One of his workmen, a Hungarian, fell beside him and was instantly killed.

The next day Jones died in the hospital, having never regained consciousness. His burns were severe, but probably would not have caused his death, as he was a man of amazing vitality. Mr. Gayley, from whom this account of Captain Jones' death has been obtained, stood at his side when the treacherous furnace broke, and narrowly escaped.

The five thousand workmen at Braddock were frantic with grief. Never before or since has the iron and steel world had so great a sorrow. Carnegie, looking upon poor Jones as he lay in the hospital, sobbed like a child. Ten thousand wet-eyed men marched with him to his grave, and to-day the veteran steel-maker's most precious memory is:

“I worked with Bill Jones.”

CHAPTER II

THE DISCOVERY OF THE GREAT ORE RANGES

The Small Beginnings of the Iron Industry in America—How Its Marvellous Modern Expansion Was Made Possible by the Discovery of the Vast Ore Ranges of Lake Superior—The Story of a Billion-Dollar Wilderness.

FEW Americans realise that in the development of the iron and steel business, we took our place in the kindergarten class with the oldest nations of Europe and Asia.

We, too, carried iron ore in baskets and made steel by the spoonful. We began at the bottom. No furnace that you may find in darkest Africa can be more primitive than many that were in operation in the thirteen colonies. What wandering tribe on the Congo could produce a cruder iron-works than the hollow stump furnaces of the first Arkansas settlers? What houses have ever been more destitute of iron than the log cabins that led the way for the westward march of the American people? What outfit could be more primitive and flimsy than the early American forges, which were tied to trees to save them from freshets, or the spring-pole hammers that struck upon stump anvils?

Six centuries ago there was not a blast furnace in the world that would be looked upon as anything more than a toy by an iron-maker to-day. At the time when our Lynn Puritans were making fourteen thousand pounds of iron a week, Sheffield, the chief steel city of England, was no more than a village, though its cutlery had been famous for three hundred years. Merthyr Tydvil, the first iron metropolis of Wales,

DISCOVERY OF GREAT ORE RANGES

was a bleak and unproductive waste. And as for Essen, the home of Krupp, it was a farming hamlet until after the Presidency of Jefferson. The simple slitting-mill, by which sheets of iron were cut into strips, was not used in England until a hundred years after the discovery of America; and the ink on the Declaration of Independence was seven years dry before the first rolling-mill in the world was in operation.

The early American iron-makers had little to do with millions. There was more of love and excitement than of money in the trade. In fact, iron was first discovered in this country through a royal romance. Ninety years after the voyage of Columbus, Queen Elizabeth of England fell in love with Sir Walter Raleigh and gave him a grant of land on the coast of North Carolina. Sir Walter sent an expedition to explore his new possessions, and a learned historian named Harriot, who was one of the party, reported on his return that "iron is found in many places of the country."

This was the earliest discovery of iron in the New World. In 1608 a ship arrived at London with a load of ore—the first tiny pinch from the vast ore-fields of America—which, when smelted, produced seventeen tons of iron, worth twenty dollars a ton. The total value of the first year's business was three hundred and forty dollars.

THE FALLING CREEK MASSACRE

Stimulated by this little pile of iron, a company was formed, and John Berkeley was sent, with twenty-two skilled iron-workers, to build the first iron-works on the new continent. Berkeley was "a gentleman of honourable family," whose home was Beverstone Castle, Gloucestershire. The company gave him a free hand, with permission to spend as much as two hundred thousand dollars. He chose a site near the James River, in Virginia, sixty-six miles above James-

THE ROMANCE OF STEEL

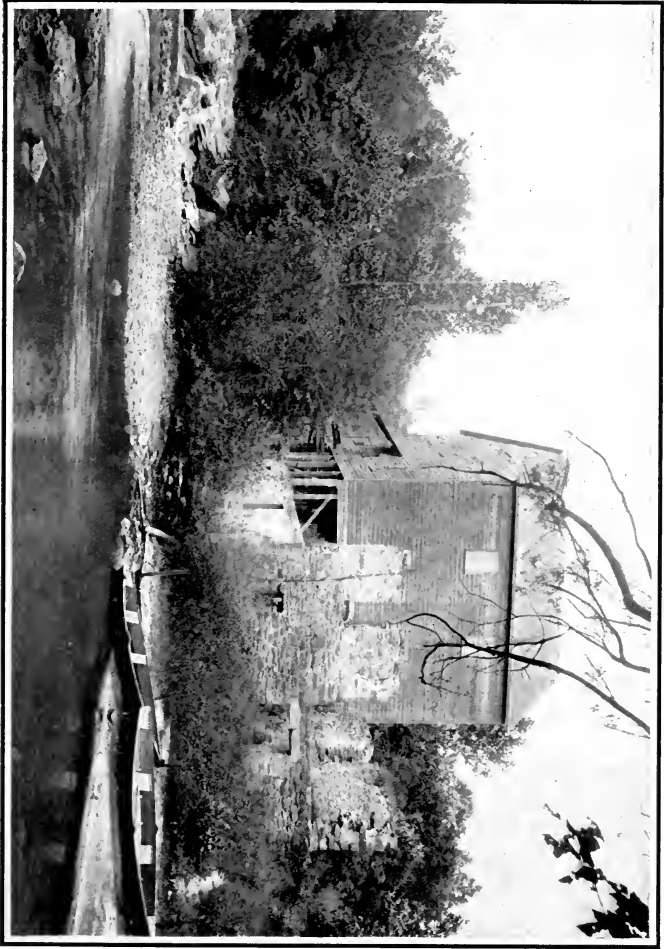
town, and there, in the dense forest, a little settlement called Falling Creek was built. Iron was made, and the prospects of the company were bright. Then, in less than a year after their arrival, came the terrible Indian uprising of 1622. The friendly Powhatans suddenly became fiends. Whole communities were destroyed. In Falling Creek no one escaped except the young son of John Berkeley, and the iron-works was burned down.

To-day Falling Creek swirls down to the James River, and on its bank you can still find small pieces of furnace cinder. Two miles up the creek are the ore-pits, still five or six feet deep. Half a mile southward from the site of the furnace there is a low tract of ground which the farmers call Iron Bottom, because of the bog ore that it contains. This is the only name that survives in our day to commemorate the story of the first martyrs of American industry.

THE HEROIC PERIOD OF IRON

For five generations after the Falling Creek massacre, the Indians were the most dreaded enemies of the iron-workers. In that "heroic period," as it may be called, the guns stood always beside the furnace and the anvil. Those who travel to-day through the secluded valleys of Virginia will still see the ruins of historic furnaces. In fact, there are few States of the original thirteen in which you will not find, always by the side of a river, the crumbled wreck of a furnace that made iron before this republic was born.

The first colonial iron-works of any importance was established at Lynn, Massachusetts, in 1642. Eleven "English gentlemen," mostly military officers, supplied the capital, which was only five thousand dollars; and a son of Governor Winthrop furnished the political "pull." The latter was the company's chief asset. Every special privilege young Win-



FALLING CREEK AS IT IS TO-DAY



DISCOVERY OF GREAT ORE RANGES

throp could suggest seems to have been promptly granted, the most important being:

A monopoly of iron-making in Lynn for twenty-one years.

Exemption from taxation for twenty years and from all military service.

A free gift of three square miles of land for every furnace built, and of all necessary ponds and waterways.

Permission to sell to Indians and to enemies of the British government.

The granting of so many special privileges angered the Lynn Puritans, and they began a series of persecutions that finally harried the iron men out of business. They declared that the company was in league with the pirates, and raged because it destroyed the forests. Several farmers brought suit on the ground that its dam had flooded their fields; and a mob went by night and cut away the flood-gates. The wife of John Gifford, the unpopular agent of the company, was next charged with being a witch, and narrowly escaped the penalty.

Three of the chief iron-makers—Joseph Jenks, Richard Leader, and Thomas Dexter—were constantly in hot water because of their sturdy independence and outspoken opinions. Jenks was arrested and plagued until he fled to Rhode Island, where Roger Williams had established a more tolerant form of faith. Leader was fined fifty pounds for speaking too frankly of the officials of the colony; and as for Dexter, his whole career was a struggle against Puritanical disfavour. He was fined eight pounds for "speaking seditious words," deprived of his vote, put in the stocks, bound over to keep the peace, arrested for drunkenness, for assaulting Captain John Endicott, and for sleeping in church, and at last deprived of the greater part of his hard-earned property.

John Jenks was the most notable of the Lynn iron-workers. He it was who made the first American saw-mill, the first

THE ROMANCE OF STEEL

fire-engine, the first wire, and the dies for the famous "pine-tree money," the earliest coinage minted in the colonies. One of his achievements alone entitles him to fame—the invention of the scythe. Before his day all the grain in the world was cut by the little hand-sickle. No iron-worker or farmer had thought of any quicker way. "Why not make the blade straight and twice as long, and swing it with a two-handed handle?" This was the question asked and answered by Jenks. Simple enough, perhaps, but since the first blade of wheat was grown no one had suggested such an idea before.

THE ARISTOCRATIC PERIOD OF IRON

Following the heroic period came what we may term the aristocratic period, when iron was made in the American colonies by King Louis XV., Queen Anne, the Comte de Frontenac, Baron de Graffenried, Baron Stiegel, Baron Hasenclever, Sir William Keith, and "Lord" Stirling. For the seventy years previous to the American Revolution iron-making was an aristocratic hobby, not only in America, but in several European countries as well. Peter the Great had set the fashion by building furnaces in the Ural Mountains, and the great need of iron for military purposes led others to imitate his example.

Queen Anne financed an iron-works at Fredericksville, Virginia, at the request of Governor Spotswood, who hoped that the profits would help to pay the expenses of the government. With the exception of the small plant now being run in connection with the Rusk Penitentiary, in Texas, the Fredericksville furnace was the only instance of state socialism that has occurred in the American iron and steel trade. Unfortunately for the advocates of the socialistic theory, the enterprise was a failure from the first. It flickered along for several years and became extinct.

DISCOVERY OF GREAT ORE RANGES

Louis XV. of France began unwisely by investing a large sum of money in a bankrupt plant at Three Rivers, Quebec. For seventeen years his iron-works manufactured pots, kettles, stoves, and cannon—more for his amusement, very likely, than as a business enterprise, as his rascally agents pocketed all the profits. It became the property of the British crown in 1760, after Wolfe's capture of Quebec, and remained so for ninety years.

But the iron-masters who deserve most notice during the aristocratic period were four "highly well-born" Germans—Barons Graffenried, Stiegel, and Hasenclever, and Squire Faesch. These men were not merely investors in the industry, but men of force, practical ability, and great enterprise. Baron Stiegel, especially, was an inventive genius, and one of the most picturesque figures of colonial times.

Graffenried was an idealist. Bringing with him thirty-two iron-workers, he landed in North Carolina and founded the village of New Berne. He was a man of peace, and hoped by emigration to escape the perils and brutalities of war; but unfortunately, like John Berkeley, he had not taken the Indians into account. The little settlement, after several contented and more or less prosperous years, was attacked by the Powhatans and destroyed. The baron saved his life, but, as Governor Spotswood wrote, "he was much discouraged."

BARONS STIEGEL AND HASENCLEVER

Baron Stiegel, also, was a dreamer of dreams and a builder of ideal towns. In 1750 he sold his share of an estate in Germany for two hundred thousand dollars and came to Pennsylvania. Falling in love with Elizabeth Huber, the pretty daughter of an iron-maker, he married her and bought her father's furnace. Several hundred German workmen gathered around him, and the town of Manheim was founded.

THE ROMANCE OF STEEL

Here all kinds of artistic iron-work and glassware were manufactured. The Stiegel stove-plates are among the most interesting relics of early American history, many of them representing such Biblical pictures as "Cain and Abel," "Adam and Eve," "David and Goliath," and so forth. The work of Baron Stiegel, in short, forms a link between the skilled handiwork of the Middle Ages and the modern American iron trade. The mediæval art of the Rhine crossed the Atlantic Ocean and flourished, for one brief generation only, in the Pennsylvania backwoods.

The third of the German barons was a personality of entirely different type. Baron Hasenclever was a thorough man of business—the Andrew Carnegie of colonial days. Ten years after Stiegel's arrival, Hasenclever went to England and organised a company to produce iron in America. Taking two hundred workmen, he came to New York, bought fifty thousand acres in northern New Jersey, and went to work with the most astonishing enterprise. In two years he had built four furnaces, seven forges, ten bridges, thirteen dams, and more than two hundred buildings. His iron was pronounced to be the best that had been produced in this country, and he was manager of a plant worth nearly three hundred thousand dollars. Then he was swept off his feet by an avalanche of trouble. Some of his partners proved to be incompetent or dishonest and by 1769 he was declared bankrupt and forced to leave the country.

TWO GREAT AMERICAN NAMES

There were in this period two humbler iron-workers who deserve special attention, not because of their achievements as iron-masters, but because they carried the two names that have been most highly honoured in American history. They were Captain Augustine Washington, father of George

DISCOVERY OF GREAT ORE RANGES

Washington, and Mordecai Lincoln, the great-great-grandfather of Abraham Lincoln.

George Washington, when a boy, played under the sparks of Accokeek furnace, which belonged to the Principio Iron Company, of Maryland, but which was located on his father's land across the Potomac from Mount Vernon. Captain Augustine Washington owned one-sixth of the furnace, and received, in addition, five dollars for every ton of iron it produced. He was much more than a holder of stock. Twice he visited England on business connected with the furnace, and on his last visit was persuaded to become the active manager of the business.

As for Mordecai Lincoln, he was the master of a forge in Bound Brook, New Jersey, in 1703, from whence his son John pushed westward to the heart of the Kentucky forests.

MEN WHO FOUGHT WITH WASHINGTON

Coming down to Revolutionary times, we have next the "patriotic period" of the iron trade. As might have been expected, the British Government's persistent hostility to the industry in the American colonies drove practically all of the iron men into the ranks of the Revolutionists. Among the signers of the Declaration were four ironmasters—George Taylor, Stephen Hopkins, James Smith, and George Ross. And of the leading officers of Washington's army, the following twenty-four were from the furnace and the forge:

Colonel Ethan Allen; General Philip Benner; Colonel James Chambers; Captain Robert Coleman; Colonel Persifor Frazer; Major-General Nathanael Greene; Colonel Christopher Greenup; Colonel Curtis Grubb; Colonel Peter Grubb; General James Irvin; General Thomas Johnson; General William Lewis; Colonel Isaac Meeson; Colonel Mathiot; General Daniel Morgan; General Rufus Putnam; Colonel

THE ROMANCE OF STEEL

Paul Revere; Major Samuel M. Reynolds; Captain William Richards; General Arthur St. Clair; General William Alexander, the self-styled Lord Stirling; Colonel Joseph Vaughn; Colonel William D. Waples; Colonel Gardiner H. Wright.

George Washington clearly set a special value upon the friendship of ironmasters, and upon their bluff, outspoken honesty. Among his generals no one was more trusted and beloved by him than Nathanael Greene, the Quaker forgerman; and during that winter of desperation at Valley Forge, the commander-in-chief and his wife lived as the guests of a cheerful, witty, philosophical ironmaster named Isaac Potts. Robert Erskine, too—the manager of a New Jersey furnace, who became the surveyor-general and geographer-in-chief of the Revolutionary forces—was one of Washington's most intimate friends. At Ringwood, in Passaic County, New Jersey, any one who wishes may still see Erskine's grave, and above it the broken stump of a tree that was planted by President Washington himself.

THE GREAT CHAIN AT WEST POINT

From an iron-maker's point of view, the greatest achievement during the patriotic period was the making of the great West Point chain. This massive chain, which has probably never had an equal since the first hammer struck upon the first anvil, was stretched across the Hudson River at West Point to prevent the British fleet from making a second attack upon Kingston and Albany. It was nearly a mile in length, and weighed almost two hundred tons, many single links being as heavy as an ordinary-sized man. To complete it in six weeks, sixty men hammered day and night at seventeen forges, and the cost of it was placed at four hundred thousand dollars.

"The great chain is buoyed up," writes Dr. Thacher, "by very large logs, about sixteen feet long, pointed at the ends

DISCOVERY OF GREAT ORE RANGES

to lessen their opposition to the force of the current. The logs are placed at short distances from each other, the chain carried over them and made fast to each by staples. There are also a number of anchors dropped at proper distances, with cables made fast to the chain, to give it greater stability."

No British ship passed this iron barrier. With its aid, West Point became the strongest military post in America—so strong that treachery was tried where force of arms had failed. When Benedict Arnold was plotting the surrender of West Point, he wrote André and said: "I have ordered that a link be removed from the great chain and taken to the smith for repair." The chain, however, remained in place till the end of the war, and links of it are still to be seen in the museums of Albany, West Point, Newburgh and New York.

"PROTECTION" AGAINST AMERICAN IRON

In a very emphatic sense it may be said that the first blow of the Revolution was struck, not by the swords of Bunker Hill, but by the tilting-hammers of the colonial ironmasters. Before George Washington was born, the iron men had hammered out a Declaration of Independence—so far as their trade was concerned, at least. It was as early as 1719 that the ominous news reached England that there were six furnaces and nineteen forges in America. Six furnaces and nineteen forges! As Bancroft says, "they were a terror to England, and their spectres haunted the public imagination for a quarter of a century."

The British ironmasters clamoured for protection against this competition, and an act of outlawry and confiscation was passed against every English-born skilled worker in the American colonies. This did more to irritate the colonial iron men than to suppress their business, and in a few years England was frightened again. A Pennsylvania storekeeper

THE ROMANCE OF STEEL

was on a visit to Liverpool to replenish his stock. and, on being told the price of nails, said:

“Why, I can buy better nails for less money from John Taylor, of Sarum, Pennsylvania.”

A loud outcry arose against “John Taylor’s nails,” and made itself heard even in Parliament. Lord Chatham, too, speaking in the House of Lords, declared that he “would not allow the colonists to make even a hobnail for themselves.”

Finally, in 1750, the British Parliament took the most drastic action against the enterprising men who were making the colonies industrially independent, and issued what was practically an injunction against the iron trade of America. The five points of this injunction were as follows:

No more rolling mills to be built in America.

No more slitting-mills.

No more tilt-hammer forges.

No more steel furnaces.

American pig iron to be taken into England duty free, but at the port of London only.

This injunction had a different effect from what the British Parliament intended. It was so brutally frank that it opened the eyes of the colonists to the real nature of the government’s colonial policy. And as for the ironmasters, the last spark of loyalty in their hearts was extinguished. It had been bad enough to be classed with pirates and outlaws, but now Parliament had called every one of their forges and furnaces a “common nuisance” that must be “abated.” This was too much. Henceforth every forge and furnace became a storm-centre of discontent, and the iron-workers were ready for the Revolution a quarter of a century before it came.

MRS. LUKENS’ BOILER-PLATES

After the Revolution, the first notable iron-maker was a woman—Mrs. Rebecca Lukens, of Coatesville, Pennsylvania.



MRS. REBECCA LUKENS



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

DISCOVERY OF GREAT ORE RANGES

She was the first in America to roll boiler-plates successfully, and she laid the foundation of a business which is still flourishing. Mrs. Lukens was far more than a mere owner. She was an inventive, practical woman, who drove the business toward success in the face of tremendous difficulties. Her boiler-plates became so famous that George Stephenson used them in the building of his first locomotives.

To-day, when over two-fifths of all the iron and steel in the world is produced in this republic, it is hard to realise that twenty-five years ago we were lagging behind in the race. We have worn the blue ribbons of victory only for a short time. When "Bill" Jones was born, England made as much iron in one day as we did in five. We were as hopelessly in the rear in the iron and steel industry as we are to-day in that of ship-building. The hampering effect of that political and financial chaos which prevailed from George Washington to Abraham Lincoln, and the lack of cohesion between the States, allowed England to take the lead in the building of factories, in steam machinery, in railroads, and in the making of iron and steel.

American civilisation, prior to the Civil War, was too flimsy to sustain a great industry. Large fortunes could be made only in those occupations which depend primarily upon natural resources, such as lumbering, agriculture, cattle-raising and cotton-growing. Every backwoods settlement was based upon wood, not steel. It was like the clumsy ox-carts of the Manitoba half-breeds,—put together without a nail.

As late as 1867 England called our iron and steel works,—"sickly hothouse plants." There were then *fifty-nine* Bessemer plants in Europe, and only *three* in the United States. When Henry Chisholm made his first Bessemer steel in Cleveland, he was obliged to import workmen from Sheffield. Whether rightly or wrongly, American steel was generally supposed to be of unreliable quality. It was said to

THE ROMANCE OF STEEL

be made in a hit-or-miss fashion. When the steel-makers of Joliet, in 1874, produced a steel rail, twisted when cold into a perfect spiral without a break, the news of their skill was heard with incredulity both in the United States and England. But the following year America shot ahead of Germany and began a neck and neck race with England, which continued until 1889. After that, the race became a procession.

In the Centennial year of the republic, American goods broke into the English market. Henry Disston, the Philadelphia saw-maker, cut the price of saws to \$10.50 a dozen and sold \$100,000 worth in Europe in a year. American axes at eighty cents were found to be superior to English axes at a dollar. The North British railroad company bought an American steam-shovel for \$15,000,—the first of its kind ever seen in England. With three men to run it, it threw sixty shovellers out of work. The unemployed diggers gathered around it in open-mouthed amazement and watched it fill a waggon in fifty seconds. A few days afterwards an American merchant arrived in Sheffield with a consignment of hoes, hay-forks, spades, etc., which were neater, handier and cheaper than those which Sheffield had been sending to all parts of the world. The Sheffield men were dumbfounded at such impertinence, but they could do no more than say,—“They won't wear as well as they look.” The next surprise came when an American locomotive began to run up and down on one of the English railroads. This engine attracted general admiration as a clever piece of workmanship, and its cost was but \$6,700, several notches below the English price.

Then, in the same year, when a Sheffield steel-maker who had lost all his American customers, announced publicly his intention of building a branch plant at Pittsburgh, England realised that her industrial supremacy was beginning to slip away. Five years later, when Captain Jones, the Titan of Braddock, made the first announcement of American achieve-

DISCOVERY OF GREAT ORE RANGES

ments in Great Britain, the unwelcome fact was slowly driven deep into the British mind—the thirteen little colonies in the American wilderness had become the greatest steel-making nation in the world.

At the close of the Civil War we had enough capital, enough machinery, enough skill. What was needed, if the business was to expand, was cheaper ore. Before the Age of Steel could begin, there had to be more ore—hundreds of millions of tons of it. Where it was to be found, none of the steel-makers could tell.

THE SECRET OF OUR SUPREMACY IN STEEL

If the claim that steel has made a thousand millionaires seems incredible, what shall we say to the fact that in the Lake Superior region alone the value of the known deposits of iron ore is more than a thousand millions? As it lies in the ground, iron ore is cheaper than sawdust. You can buy twenty pounds for a cent. But in the dense wilderness that girdles Lake Superior there are mountains of it, prairies of it, lying red and heavy underneath the forest soil. How this billion-dollar wilderness was discovered in the nick of time to give us the supremacy of the world in steel—how scores of vast fortunes were made and lost and made again—we shall see in the following pages.

It is impossible to understand why our American steel-makers hold their present dominant position without first knowing the story of this wonderful deposit of ore. It is the secret of cheap steel and American supremacy. Other countries can use the same skill and the same machinery. Their furnaces may be as large, and their coal as handy. But it is in the United States, and nowhere else, that iron ore is found, not in deep mines, but in vast pockets, in heaps, in ranges, on the surface of the earth, ready to be scooped up and carried away.

THE ROMANCE OF STEEL

As to what iron is, nobody knows.

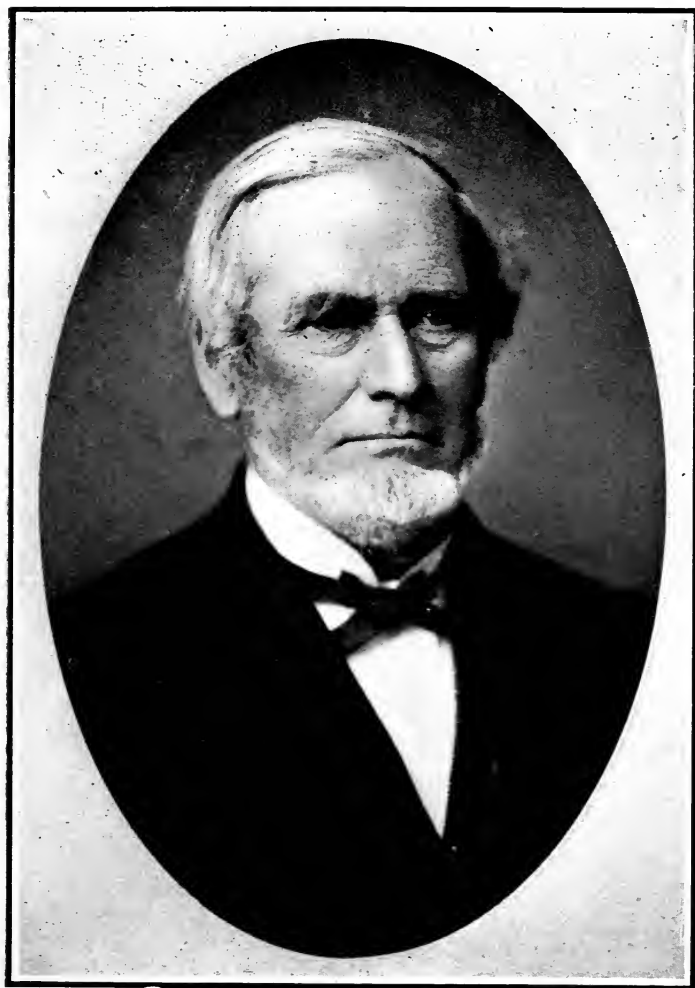
It is a part of the universal mystery. "A grand piano is a very simple mechanism compared with an atom of iron," said a famous scientist. It is found more or less in all parts of the earth. By means of the spectroscope, we have found it in the stars. The meteorites that fly through space—perhaps the cinders of exploded planets—are often found to be boulders of iron ore. The forty-ton meteorite which Peary brought from the Arctic nine years ago, and which lies to-day in front of the New York Museum of Natural History, is composed chiefly of iron. Henry M. Howe goes so far as to say that "the earth may be an enormous iron meteor, covered with a thin coating of rock." Taking this as true—that our earth is a round iron nugget—we can figure that its cash value to any Carnegie of the Milky Way would be about six and a half septillions of dollars.

Pure iron is as white as silver. Expose it to the air or water, and it tans with rust, as the oxygen burns it up. There is iron in plants, in animals, in human beings. In every hundred people, on an average, there is a pound of iron. It is the iron in the blood that imparts strength to a man's arm and the blush to a maiden's cheek. With too little iron, we sicken; without any, we die. For some reason, which is still unknown to science, iron is as much of a necessity to man's brain and body as steel is to his civilisation.

High-grade iron ore contains as much as sixty per cent. of iron. It is one of the most timid of metals. It hates to be alone. Nothing but the fiercest of furnace fires will compel it to let go the atoms of sulphur and phosphorus which are its favourite companions. As Mr. Carnegie said to me jestingly on one occasion:

"Sulphur and phosphorus are the little yellow devils which, strangely enough, we are able to drive out by means of fire."

Until fifty years ago, our iron ore came from the Eastern States, mainly from Pennsylvania and New York. The fa-



PHILO M. EVERETT



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

DISCOVERY OF GREAT ORE RANGES

mous Cornwall mines, near Lebanon, Pennsylvania, were the richest in America. They remained in the Grubb and Coleman families for more than a hundred and fifty years, and yielded nineteen million tons. The best New York mines were at Port Henry, on Lake Champlain, turning out fifteen million tons in the last hundred years. Until the Civil War, there was enough ore to supply the demand. Then the output of iron almost doubled in three years, prices were trebled, the tariff was raised, and the railroad boom began.

THE SEARCH FOR IRON ORE

“We must have more ore,” cried the excited iron-makers, confused by this unforeseen rush of prosperity.

The answer to the cry came from the far western end of Lake Superior—from a roadless, houseless wilderness, inhabited only by the bear, the moose, the wolf, and a few wandering tribes of the Dakotas. Strictly speaking, the answer came nearly twenty years before the question, but as usual the iron-makers at first did not hear it, or did not believe it. It came, as always, from an unexpected quarter and not from the regular authorities on the subject. “Impossible!” said the men of technical knowledge. “Absurd!” said the men of money. But the halloo of the few pathfinders persisted, until one by one the suspicious men of iron and steel began to follow the rough trail that led to boundless wealth. To-day that halloo has become a “Te Deum,” chanted at every gathering of the American Iron and Steel Association.

The Christopher Columbus of the Lake Superior ore region was Philo M. Everett, an adventurous citizen of Jackson, Michigan. The following story of his memorable journey, which deserves to be ranked with the ride of Paul Revere, has been gleaned from manuscripts loaned by Peter White, of Marquette, the only survivor of those heroic days.

In the spring of 1845 Mr. Everett became friendly with a

THE ROMANCE OF STEEL

couple of Indians—a half-breed named Louis Nolan and an old chief, Manjikijik, who offered to guide him to “a great mountain of solid iron.” At first the proposed trip was laughed at by the citizens of Jackson, but Everett persevered and organized a company of thirteen subscribers to supply the necessary funds. In spite of the unfortunate reputation of this particular number, there has never been a trip that was luckier, either for them or for the nation.

Taking four men and his Indian guides, Everett travelled north to Lake Superior, bought a small sailing skiff, and coasted westward.

“I was most of the time with Indians of the wildest nature,” he says. “We incurred much danger and hardship. Sometimes our sails would not flop, and in fifteen minutes we would have a gale, the seas running as high as a house. We were often wet for days together.”

After six weeks’ travel by water and land, the Indians suddenly stopped and pointed to a distant black hill, very conspicuous from the trail.

“Iron mountain! Indian not go near! White men go!” said the Indians, who were prevented by a tribal superstition from venturing near the spot.

EVERETT’S WONDERFUL DISCOVERY

The white men went, and found “a mountain a hundred and fifty feet high, of solid ore, which looked as bright as a bar of iron just broken.” Mr. Everett had seven permits from the Secretary of War, each one giving him authority to lay claim to one square mile of ore land. He located his claims, and with pockets full of nuggets the little party made its perilous way home.

“It is creating a great excitement here and in Detroit,” he writes. “We have had several letters from the brokers in

DISCOVERY OF GREAT ORE RANGES

Wall Street, applying for shares in our company. I have two hundred shares at fifty dollars each, but I am not anxious to sell."

Everett and his twelve partners thought they had discovered a mountain of solid iron, enough to supply the whole world to the end of time.

"We'll pay five dollars apiece for every stone that can be found on our iron mountain," said one of the enthusiastic shareholders.

In 1849 Peter White and others founded Marquette, on Lake Superior, as a shipping-point for their ore-field. They were destined to make more money out of iron than most of the prospectors who went in that year to California for gold. At least, in 1891, there were more than twice as many millions paid for the iron ore of the Lake Superior region as for the gold of California. Soon two other ports, Escanaba and Ashland, began to ship the precious brown cargoes. Three vast ore-fields, greater in extent than the State of Massachusetts, were opened up in Michigan and Wisconsin—the Marquette, Gogebic, and Menominee ranges.

From these three ranges alone, since Philo Everett trudged through the wilderness with his Indian guides, there have been taken seven hundred million dollars' worth of iron ore. And the capital that began to build up this stupendous business was enough to stock a fishing-boat for a three months' cruise—nothing more. As for Everett himself, he had the usual fate of the pioneer. His discovery made him at once a wealthy man, but the Marquette fire, in 1868, swept away all his property and left him to struggle for the remainder of his life with the rank and file, as before.

THE FINDING OF VERMILION RANGE

One romantic story follows close another in the history of the Lake Superior ore regions. Next comes the tale, in-

THE ROMANCE OF STEEL

credible if it appeared in a work of fiction, of Charlemagne Tower and his extraordinary financial adventure in the wilds of Minnesota.

There is a certain compound of iron ore and sulphur which is known among mining experts by the name of "fool's gold." It has deceived hundreds of prospectors. Even Philo M. Everett imagined for a while that part of his iron mountain was gold, and had a breast-pin made of a little yellow nugget. Until the close of the Civil War, a number of "cruisers"—woodsmen who located timber limits—had been arriving in Duluth with stories of gold mines in the north country. An enterprising surveyor, George R. Stuntz, determined to investigate. When he returned to Duluth, he said:

"There is no gold, but there is iron, and plenty of it, on the Vermilion Range."

This was the first announcement of the existence of iron on the northern side of Lake Superior.

The ore which Stuntz had found was tested and found to be of high grade. A large body of woodsmen at once scattered through the Vermilion Range, and spent, so it is commonly stated in Duluth, about a hundred thousand dollars in the pursuit of claims. They found provisions so dear and roads so hard to cut that they met one Sunday, held a conference, and decided to abandon the search. For ten years afterward the great Vermilion Range was an unpeopled solitude, with no sound to jar its silence except the drumming of the partridge and the howl of the timber wolf.

The story told by Stuntz had made a deep impression upon a Duluth banker named George C. Stone. Stone was a man of wealth and influence until the panic of 1873, when nearly every financier in the city was bowled over. Duluth had a "fish and potato" year, and lay for months scarcely beyond the reach of famine. Finding himself suddenly idle and moneyless, Mr. Stone became, in the most creditable sense, a

DISCOVERY OF GREAT ORE RANGES

company promoter, and endeavoured to interest capitalists in the mineral wealth of the Vermilion.

He went first to Captain Ward, of Detroit; then to Orrin W. Potter, of Chicago; then to Amasa Stone, of Cleveland. All refused to undertake the work, on the ground that docks and railroads would cost too much. In 1875, accidentally, Stone met an elderly millionaire from Pottsville, Pennsylvania, named Charlemagne Tower. It was not probable that Tower, who had gained his wealth in coal lands and railroads, and who knew nothing whatever of iron, would be easier to convert than Captain Ward. But at this point a love story helps out the plot. The world of romance is everywhere very close to the world of business. Miss Tower had given her heart and hand to a mining engineer named R. H. Lee.

"Why not build this sixty-six mile railroad from the lake to the rich ore-fields and put your son-in-law, Lee, in charge of the whole undertaking?" asked Stone.

Charlemagne Tower consented, and twenty-two men were sent to the range to locate claims. After six weeks in the dreary waste the men became discouraged and returned. The general opinion in Duluth and among iron men was that the Vermilion Range was an "exploded bubble." "All the iron ore is on the south side of the lake," they said. No one dared to defy the popular clamour except Stuntz and Stone, whose persistence finally persuaded Tower to make a second attempt, and he began to build a railroad from Two Harbors back to the iron lands.

CHARLEMAGNE TOWER'S RAILROAD

The work was more expensive than Tower had expected. Every mile cost a small fortune. By the time it was half finished he had signed checks for a million dollars. The second half of the line cost a second million, and the task was only half done. Before ore could be shipped the mines had

THE ROMANCE OF STEEL

to be opened up and machinery and rolling stock purchased. Neither Stone nor Lee had any property. Every bill had to be paid by Tower.

For four years he sank his millions in a northern wilderness which he had never seen to find iron which was generally believed to exist only in the brain of "that rainbow-chaser, Stone." Then came the stringency of 1884, when more than a hundred banks collapsed and alarmed all investors. Tower had spent three and a half millions, and had little more than a million left; yet Stone said, "We must have half a million more."

Tower reproached Stone bitterly: "You have ruined me," he said.

Stone had only one more card to play. If it failed, their railroad would become a streak of rust and their mines wolf-dens. He appealed to the Minnesota Legislature for help.

"Give us the Duluth and Winnipeg land grant, which has been forfeited," he said, "and we can finish our undertaking."

The lawmakers received his request with indifference or hostility, but Stone persevered until a few were persuaded to assist him. When the proposition came fairly before the House, there was a long and strongly contested debate. One opponent spoke for five hours without intermission. On both sides there were tricks of the lobby. At three o'clock in the morning a vote was taken, and the bill was passed.

This success persuaded Tower to play out the desperate game. He sacrificed his gilt-edged securities and threw half a million more into the Minnesota sink-hole. In a few months the first ore-train wriggled down the crooked track to the dock at Two Harbors. The ore was high-grade, and easily mined. Stone's golden dream was coming true. For two years the mines were operated with great profit, attracting the attention of John D. Rockefeller, H. H. Porter, of Chicago, and others. An offer was made to Mr. Tower of eight million dollars,

DISCOVERY OF GREAT ORE RANGES

exactly twice what he had invested. He accepted the offer, giving Mr. Stone four hundred thousand as his share in the profits.

Thus was laid the foundation of the Tower fortune, now controlled by Charlemagne Tower's son and namesake, formerly American ambassador at St. Petersburg, and at present holding the same post at Berlin. Thus, too, the vast wealth of the Vermilion Range was given to the nation, the total output up to the present year having amounted to over eighty-five million dollars' worth of ore. Two busy little towns, Tower and Ely, make the wilderness cheerful; while at Two Harbors are the best equipped ore-docks in the world. The property has been twice sold since 1886—to the Federal Steel Company, and by it to the United States Steel Corporation, both times at an advance in price.

THE MOST WONDERFUL RANGE OF ALL

And now comes the story of Mesaba—there are at least five ways of spelling the name—the last and greatest of the world's iron ranges. This range lies mainly in St. Louis County, Minnesota, north of Duluth, and farther west than the others. It extends over a huge tract at least twice as large as the State of Rhode Island.

A few years before the Civil War a hardy woodsman named Lewis H. Merritt emigrated from Chautauqua County, New York, to Duluth, with his wife and family of four small boys. When the "fool's gold" excitement began, he was one of those who followed the yellow will-'o-the-wisp through the northern wilderness. He found no gold; but he brought home a small paper parcel of red iron ore, and showed it to his sons, now in their teens. He taught them its value, and told them of a new unexplored range which in his opinion was a store-house of mineral wealth.

THE ROMANCE OF STEEL

Soon afterward, the four brothers, Leonidas, Alfred, Andrus, and Cassius, plunged into the forest and became expert and daring woodsmen. To and fro in the whole north region they ventured, until they became the Leatherstockings of Minnesota. Although their abilities fitted them for woodcraft and not for business, within twenty years their knowledge of timber lands made them fairly wealthy men. As soon as they had accumulated sufficient capital they withdrew from the timber business, and in 1885 located their first iron mine.

Three other Merritts, their nephews, joined them, and for several years the Merritt brothers, as the seven were usually called, travelled up and down the entire length of the Mesaba range, until it was thoroughly surveyed, cross-sectioned, and mapped. All supplies had to be carried from eighty to a hundred and fifty miles upon their backs. In so dense a wilderness horses would have been useless. If hardships be the price of success, the Merritts paid it in full. Many a time their hunger-belts were pulled to the last hole.

But more obstructive than the opposition of trees, swamps, and rivers, was the influence of conservatives at Duluth who cried: "Absurd! Impossible! What do these Merritt farmers know about mineral deposits? One lesson in geology would teach them that there can be no iron on the Mesaba. Beware of the Merritts! They are trying to dupe the public into buying worthless stock."

Duluth listened to the "knockers," and when the Merritts began to build a railroad they could not obtain permission to make Duluth their lake terminus. The nearest existing line ran between Duluth and Winnipeg, fifty miles distant from the Mesaba. Lon Merritt succeeded in making a traffic contract with this railroad, and in two years the Merritt line was built to connect with it.

How the Merritts managed to build that fifty-mile ore railroad is still a Minnesota mystery. But by sacrificing every



ALFRED MERRITT



DISCOVERY OF GREAT ORE RANGES

dollar's worth of property in their possession, by selling shares in the enterprise to a few friends, and by the most heroic persistence, they succeeded. Ore docks were built on the lake front at Allouez, mines were opened, rolling-stock was purchased, and in 1892 their first trainload was hauled out and sold. The Merritts were at this time out of debt, and the majority owners of a property worth many millions.

Then came the financial smash of 1893. The Merritts had launched out too freely, and went down with the wreckage of that disastrous year. John D. Rockefeller acquired the property, and he, together with James J. Hill, who soon afterward built a competing line, developed the Mesaba Range by a large investment of capital. It is generally believed in Duluth that Rockefeller paid too much for his ore holdings, with the exception of what he took from the Merritts. One speculator bought a tract of land for fifty thousand dollars, and in a few days turned it over to a Rockefeller agent for eight hundred thousand.

THE TREASURE PITS OF THE MESABA

A Mesaba iron mine is one of the world's wonders. The ore is not buried deep in the earth, but lies just underneath the surface in heaps and hills, as though a tribe of friendly gnomes had mined it. There are no sunken shafts, no sunless caverns and subways, no burrowing miners turning their tireless drills by the light of a flaring torch. A Mesaba mine is as open to the daylight as a brickyard. Some, with terraced sides, resemble vast amphitheatres; others, wide and shallow, are not unlike the switching-yard of a railroad; and a few suggest extinct volcanoes, which in their last gasp had exploded and torn open their red sides.

In some places the ore is barely hidden by a foot of loose soil, but usually about fifty feet of earth covers the food for which four hundred furnaces are always hungry. One body of

THE ROMANCE OF STEEL

ore is two and a half miles long, half a mile wide, and from one hundred to four hundred feet thick. The thickest mass is four hundred and forty feet through, dwarfing the tallest of our skyscrapers. There are five of these immense treasure-pits whose total product is eighteen million dollars' worth of ore each year.

The Mesaba ore is not hard and rocklike. Instead of blasting it loose, as is done in other iron ranges, the Mesaba "miner" is merely a man who operates a steam-shovel. Eight workmen can handle one shovel, and under favourable conditions they can load more ore in one hour than five hundred delving miners can bring up in a day from the average rock mine. At every swing of the steam-shovel's powerful arm, five tons of ore drop into a big steel car. The arm swings twice a minute. In five minutes the car is heaped and another is pushed into its place. When twenty cars are full, the ponderous hundred-and-thirty-ton engine pulls them out of the mine, and eighty miles through the dense forest to Lake Superior. From the high trestle-work of an ore-dock the ore is dropped quickly into large bins, and the empty train returns to the mine for another thousand-ton load. Such is "mining" on the Mesaba.

Until eleven years ago there was not an iron mine in the world that had produced half a million tons in a single year. To-day there are fifteen mines on Lake Superior that produce from one to three times as much. The Oriskany Mine, in Virginia, was thought to be a record-breaker when its output was a thousand tons a day; but a Mesaba mine will turn out fifteen thousand tons a day for weeks together. Seventy steam-shovels are now tearing at the earth and ore of the Mesaba, and new records will probably be made before these words are printed.

The cost of mining has been beaten down to as little as twelve cents a ton—a minimum unimaginable even among the underpaid miners of Greece or Spain.

DISCOVERY OF GREAT ORE RANGES

ONE-SIXTH OF THE WORLD'S ORE SUPPLY

At first the Mesaba ore made trouble in the furnaces. Being so fine, it caked and exploded, or went up like smoke. But furnaces were soon built in a way to prevent these mishaps, and to-day more than half of the steel made in Pittsburgh, Youngstown, Wheeling, and Joliet, is made from Mesaba ore. Thirteen million tons come down the Great Lakes every year from the deposits that the Merritt boys discovered—one-third of all the iron ore mined in the United States, and one-sixth of all mined in the world. Young as the range is, it has already added more than a quarter of a billion dollars to the wealth of the nation.

In the busy summer season more than seven thousand men, principally Finns and Italians, are employed in the mines of the Mesaba alone. Three little towns—Hibbing, Virginia, and Evelyth—have sprung up in hothouse haste. Hibbing, the largest, has a population of six thousand, and boasts a department store, three banks, two newspapers, electric lights, and a hotel with six-course dinners and menus printed daily. More wonderful still, it has a theatre which can seat twelve hundred—a palace of pleasure which is “a dream of sparkling lights and mellow tints charmingly blended,” to quote a proud editorial from the *Mesaba Ore*. A dozen mines, including the Burt and the Mahoning, are within walking distance of the depot, and the Stevenson is seven miles distant.

There is no industry on the Mesaba except mining. The wooded wilderness encircles every town and mining village, and at night the howl of the wolf is heard as he slinks across the railroad track or starts at the light in a log-cabin window.

“I shot a bear here last January,” says my driver, as we approach the Stevenson Mine.

Here and there, among the mines, are drilling parties, hunting for new locations or measuring ore-bodies that are about to be sold. About two hundred and fifty drills are now in

THE ROMANCE OF STEEL

operation on the Mesaba. This one item of drilling illustrates how elaborate and costly the mechanism of the iron and steel business has become—how far removed from the cheap and simple days of Ethan Allen. A common "churn" drill costs usually about fifteen hundred dollars, and a diamond drill is worth twenty-five hundred to four thousand. Three men are required to a drill, wages ranging from two to four dollars a day. Thus the cost of one first-class drill is almost equal to the total capital of the Lynn iron-works in 1645, and eighty times greater than the price paid by Richard Leader, its manager, for a slitting-mill.

The discovery of Lake Superior ore has changed the industrial map of the United States. It has opened up a new territory as large as France. It has shifted the centre of the iron and steel trade from the Ohio River to the Great Lakes. It has built up eight railroads, more than a dozen busy towns, and the largest commercial fleet in the world. It feeds our furnaces with the best and the cheapest ore, and does more than any other one factor to give America the supremacy in iron and steel. All this in less than fifty years!

CARRYING ORE DOWN THE LAKES

The old captain who brought down the first cargo of ore from Marquette to Lake Erie in 1853 is still hale and hearty, and may be seen any fine afternoon on the streets of Ashtabula. Until 1861 very little ore was carried down the lakes. The largest vessels in the trade were four-hundred-ton schooners, and the freight charge was three dollars a ton, nearly four times more than the present rate. About that time a captain named Winslow made himself ridiculous among his mates by saying: "There are men now alive who will live to see the day when these wooden sailing vessels will be replaced by steamboats made of iron and steel."

Twenty-five years ago steamers began to replace sailing ves-

DISCOVERY OF GREAT ORE RANGES

sels and ten years afterward came the first steel ore-ships. At first the latter were disastrous failures. Two of them came apart in a storm, just as the builders of wooden ships had prophesied. But the steel-men persevered, found out how to strengthen them, and gradually drove the wooden ships off the water. The cigar-shaped "whaleback" was introduced into the ore-carrying trade by John D. Rockefeller, who owned a fleet of seventy ore-ships in 1890. To-day the "whaleback" is out of date, as its hatches are too narrow for the unloading machinery.

At present the average large steel ore-boat carries seven thousand tons or more, at a speed of twelve miles an hour. She is manned by a crew of twenty-four, most of whom receive more than was paid to a captain fifty years ago. The captain's salary is nineteen hundred and eighty dollars. Three years ago a Duluth company built the immense ore-steamer Augustus B. Wolvin, carrying twelve thousand five hundred tons and having thirty-two hatches. For swift loading and unloading, this remarkable vessel has never been equalled. Its records are incredible in Europe and startling to the steamship men of the United States. For instance, a load of ten thousand two hundred and forty-five tons of ore was placed on board her in ninety minutes, and unloaded to the last pound in four and a half hours. Forty years ago a load of five hundred tons was put aboard, by a crowd of men with shovels and wheelbarrows, in not less than three days. To-day the Wolvin takes on five hundred tons in five minutes, and unloads it in fifteen.

The Wolvin has set a new standard for ore-ships, to which the United States Steel Corporation has been obliged to conform. Last year, feeling that its ore-fleet was dwarfed by this great independent vessel, the Steel Trust launched four new boats, each nine feet longer than the Wolvin, and built on similar lines. These gigantic boats represent an outlay of seventeen hundred thousand dollars apiece, and will carry eight hundred

THE ROMANCE OF STEEL

thousand tons of ore down the lakes in a single season—enough to keep an old-time furnace busy for four hundred years.

The famous Suez Canal, the highway between Europe and the East, has only one-third the freight tonnage of our young "Soo" canal, which connects Minnesota with Pennsylvania and New York; and two-thirds of the traffic through the "Soo" is the carrying of iron ore. To put the total tonnage into figures is to be unintelligible. Who can realise the magnitude of three hundred million tons—the output of the Lake Superior mines in less than fifty years? Could even the "rain-bow-chasers"—Philo M. Everett, George C. Stone, and Lon Merritt—have foreseen that their pioneering would lead the way literally to a billion-dollar wilderness?

THE BUILDING OF A GREAT ORE-PORT

This imposing ore-fleet of four hundred vessels also calls for new harbours, new docks, new railroads. At the loading end there are now seven excellent harbours, with more than six miles of docks. At the unloading end, there are three ore-harbours on Lake Michigan and nine on Lake Erie. Conneaut, the port built by Mr. Carnegie, and now belonging entirely to the Steel Trust, won the leadership in 1904 for the first time from Cleveland and Ashtabula.

Less than six years ago Mr. Carnegie stuck a pin in the map of Ohio, and said:

"We will build a harbour of our own here, as the point where our ore-ships and our ore-railroad meet." The spot indicated by the pin was no more than a swampy village. To-day it is the foremost harbour on the Great Lakes in point of tonnage, and in dock equipment it has no equal in any country. Half a day after an ore-steamer arrives, its cargo has been transferred into freight-cars and is trundling southward on its journey to Pittsburgh. Four miles of cars can be loaded and hauled out in one day.

DISCOVERY OF GREAT ORE RANGES

The unloading machines are the wonder of all visiting European engineers. Here you can see a fifty-ton car of coal picked up as if it were a box of candy and tipped sideways into a wide hopper, which conveys the coal to a vessel's hold. With the guidance of four men, two hundred cars are emptied between sunup and sundown. Here you have the largest bridge-crane ever erected, which can pick up or put down anything from a coal scuttle to a locomotive, at any spot within an area of seven and a half acres. To use a New York illustration, it could pick up an electric car at Twenty-Eighth Street and Sixth Avenue, and swing it to Thirtieth Street and Seventh Avenue in a few seconds.

Here you may see the marvellous Hulett automatic unloaders, which are nothing less than gigantic steel arms that thrust themselves into a vessel's depth and grasp a ten-ton handful of ore apiece. Each arm has not only a hand, but a wrist as well. The operator, standing on the wrist like an obstinate insect, goes up and down with the powerful arm, which he can guide in any necessary direction. The towering machine weighs more than an army of five thousand men, yet it obeys the slightest touch of its human master's hand as readily as if it were a bicycle. Six workmen and one machine can do the work that formerly required ninety shovellers. When the great hand of the machine is open, it covers eighteen feet of ore, and closes with a grip that is irresistible. Several times, in the holds of ore-vessels, the writer has seen steel girders that were bent and wrenched away by the grip of this mighty giant.

THE RAILROADS OF THE ORE RANGES

Of the eight railroads that earn their dividends by carrying Lake Superior ore, four are the property of the United States Steel Corporation. To haul the ore to the lake requires the use of about two hundred and fifty locomotives and eighteen

THE ROMANCE OF STEEL

thousand cars. Those who hope to visit the great treasure-land of Minnesota need have no fear that they will be obliged to make the journey sitting on top of a loaded coal-car or lumber-truck. The ore-railroads are first class in almost every respect. The tracks are straight and smooth, laid with ninety-pound rails. If it were not for the groups of miners and lumbermen, dressed picturesquely in gay blanket coats, fur caps, leggings, and shoepacks, and for a general spirit of unconventionality and good-fellowship, it would be easy to imagine oneself on the way from Boston to New York.

One conductor of a Duluth and Hibbing train, dissatisfied with his salary in this region of millions, spends his time between stations selling sixty-cent suspenders to the passengers. He has sold seven hundred pairs, he says, as they are the most wonderful, non-button suspenders the world has ever seen. Another conductor lends fifteen dollars to a passenger who has forgotten to call for his pay-envelope. At one station a drunken recruiting sergeant, with a "kick me" sign on his back, is being ping-ponged from one group of hilarious miners to another. Such little events serve to remind the traveller that he is far from Massachusetts; but so far as the luxurious chair-car and the smooth road-bed are concerned, there is no difference between the train that runs up to the Mesaba and the one that winds along the Hudson.

Ore-railroads are found to be highly profitable. They carry no perishable freight, need no expensive depots or terminals, carry a slight burden of taxation, and cost comparatively little to build. The main drawback is in having a busy season of only seven months. The first ore-line—between Catasauqua and Fogelsville, in Pennsylvania—built by David Thomas fifty years ago, has paid dividends without missing a year since its first train was run. Since the discovery of the surface mines of the Mesaba, the problem of rapid mining has become largely a matter of railroading. As James J. Hill said,



LEONIDAS MERRITT



LIBRARY
OF THE
UNIVERSITY
OF CALIFORNIA

DISCOVERY OF GREAT ORE RANGES

“the question of ore production has now become a question of the proper switching of trains.” This remarkable statement is true of American iron mines only, and would be entirely incomprehensible to an untravelled mine-owner in Sweden or Spain.

MILLIONS MADE FROM IRON ORE

For ten years the “ore pool” has averted the evils of competition and fixed prices to its own satisfaction. Two years ago Alabama lowered prices and demoralised the trust; but last year, by means of “informal conferences,” the ore men came to a fairly general agreement as to prices and amount of output. The grading of ore has been done for the last two years by chemical experts, who analyse the samples and fix values to the one-hundredth part of a cent. Cleveland is the nerve-centre from which the independent mines and ore-fleets are managed; and if it were not for its inconvenient harbour, it would easily be the first of the ore-ports.

Three consecutive groups of millionaires have been created by the natural wealth of the Lake Superior wilderness. First came the fur-traders, who scattered their trading-posts along the lake shore and laid the foundation of great fortunes by trafficking with the Indians. It is an interesting fact that John Jacob Astor established trading-posts in the Lake Superior ore regions as long ago as 1816. He had his headquarters at La Pointe, and was protected by a fort at Fond du Lac. Had he obtained possession of the region through which he traded, he would have bequeathed to his descendants a far more valuable property than that which they possess to-day, even though the latter may be the most coveted and costly real estate in the United States.

Next came the lumbermen, who made millions out of the Lake Superior forests. The iron ore, in fact, may be called a by-product of the exhausted timber lands. When ore was

THE ROMANCE OF STEEL

found, part of the land belonged to the State, part to the public school fund, and part to the lumbermen. The latter were at once enriched, making more from the royalties on the ore than they had obtained from the sale of the timber. The average royalty is twenty-five cents a ton. Many lumbermen who had lost their fortunes suddenly became wealthy again.

Tales are told of worthless old deeds and leases which were rummaged out of desks and found to be the titles to fortune. One woman, the penniless widow of a Duluth lumberman, accidentally found an old lease in a drawer and has been receiving forty thousand dollars a year out of the ore business ever since. The Yawkey, Fowler, Palms, Flinn, Murphy, and Stephens fortunes in Detroit were mainly dug out of the Lake Superior mines. W. R. Burt, C. N. Nelson, and many other Michigan multi-millionaires, became so by the mere holding of acres in the billion-dollar wilderness.

The public school system of Minnesota has to-day more than sixteen million dollars in its treasury, accumulated by the leasing of its ore and timber lands. Fifteen mines are now paying a royalty of twenty-five cents a ton to the schools. Every swing of the steam-shovel's five-ton bucket puts a dollar and a quarter into the service of education. This arrangement is not due to the astute statesmanship of the Minnesota legislators. Quite the reverse. The story runs that away back in 1857 the school authorities, being in great need of money, clamoured for a share of the public lands.

"Certainly," replied the Assemblymen. "We'll give you ten sections."

When the school authorities received the official paper, they found to their disgust that the school lands were located in the remote, uninhabited wilderness, in the extreme north-eastern part of the State. The land was as worthless, they thought, as if it had been at the bottom of Lake Superior.

DISCOVERY OF GREAT ORE RANGES

For more than twenty years this fooling of the school authorities was one of the standing jokes of the Minnesota politicians. Was there ever before a practical joke which had such a golden ending for its victims?

Many a lawyer, also, laid the foundation of his fortune when the ore regions were discovered. There was constant difficulty in securing clear titles to the locations, and the Minnesota courts were overworked trying to cope with the problem. One lawsuit—the famous Section Thirty case—lasted for twenty years, and was finally decided by the Supreme Court of the United States. The contest raged over a small tract of ore land, three hundred and twenty acres, claimed both by Lon Merritt and by the Minnesota Iron Company. A million dollars was spent in litigation before the suit was finally won by Merritt.

The Lake Superior ore mines are the last and most wonderful of the world's mineral discoveries. The experts say that they are practically all taken up, and that at the present rate of consumption their best deposits will be exhausted in fifty years—the Mesaba, the richest of them all, in less than twenty-five. But who can tell? The same was said in 1845, until Philo M. Everett succeeded. It was said in 1882, until Stone and Tower opened the way to new deposits. It was said in 1892, until Lon Merritt uncovered the richest range of them all.

The immense recent finds in Alabama and British Columbia show that there may yet be many new ore worlds to conquer. The "ore famine," so freely predicted, is not likely to trouble us or our children. On the contrary, every sign indicates that our iron and steel business is about to enter a period of world-wide activity which will make the golden age of Carnegie seem no more than the rosy flush of the dawn.

CHAPTER III

THE RISE OF ANDREW CARNEGIE

The Most Remarkable Career and the Most Striking Personality in the History of Iron and Steel—How Andrew Carnegie, Beginning as a Bobbin-Boy, Became a Stoker, a Telegrapher, and a Railroad Superintendent; How He Entered the Iron Business, Began to Make Steel, and Fought His Way through Many Difficulties to Colossal Wealth and the Mastery of a Great Industry.

IF Andrew Carnegie could have chosen the date of his own birth, he could not have improved upon the year 1835. The raw materials out of which his steel empire was built—the Connellsville coke, the so-called Bessemer steel process, the Lake Superior ore, and the era of railroad-building—were not assembled until Mr. Carnegie was thirty-five years of age. Not until 1861 was the first solid tariff wall erected; and not until three years later came the first boom in the iron and steel trade. If his life had begun twenty years earlier or later, he would undoubtedly have missed the great opportunity which came to those born under his star.

Had he been born before the discovery of America, he would have been shut out of the iron and steel trade completely. He would not have been allowed to make so much as a horseshoe. During the Middle Ages no son of a *weaver*, musician, barber, watchman, miller, tanner, shepherd, or tax-collector was permitted to enter the iron and steel guilds, which were for centuries very exclusive and aristocratic. The men who hammered steel and gold were the members of an industrial nobility, as distinctly separated from the other

THE RISE OF ANDREW CARNEGIE

artisans below as they were from the nobles and courtiers above.

Andrew Carnegie was a child of poverty and discontent. His father, a weaver by trade, a labour agitator by reputation, was described as one of the most "troublesome" street orators in the Scottish town of Dunfermline. His uncle, also, was a mob leader, who was on one occasion arrested and jailed for inflammatory talk. Young Andrew got no schooling after he was twelve, and very little before. In fact, he was doing his boyish best to gather "siller" years before he became a bobbin-boy in Allegheny City. When he was a youngster of ten, he and his cousin managed by doing odd jobs to save up four shillings and sixpence—a few cents more than a dollar. After much deliberation, they put their entire capital into a half box of oranges, which they peddled around to the retail stores. This enterprise was so easy and profitable that next day they invested their money in gooseberries. But when the berries were only half sold, the boys ran into a crowd of roystering miners, who threatened to take away their berries. This frightened the two little fruit-jobbers into selling the remainder of their stock at cost to the nearest shopkeeper.

THE CARNEGIES CROSS THE OCEAN

In 1848 the steam-loom was driving the hand-weavers of Scotland out of business and bringing misery to many a cottage. It is a peculiar coincidence that it was the new steel machinery that forced the elder Carnegie to emigrate to Pittsburgh, and that it was the younger Carnegie who afterwards became the master of the new machinery and the American Emperor of Steel. The poverty-driven family—father, mother, Andy, aged thirteen, and Tom, aged six—zigzagged across the ocean on the little schooner *Wiscasset*

THE ROMANCE OF STEEL

and reached port in forty-nine days. It would require fifteen Wiscassets to carry the load of a single one of the big ore boats that ply to-day between Conneaut and Duluth, but in those days she was considered fairly large and fairly fast.

The exact address of the Carnegies in their new home was "Barefoot Square, Slabtown, Allegheny, Pennsylvania." Three of the thrifty family immediately found work. The father secured a job in a cotton-mill; Andrew went to work in the same mill as bobbin-boy, with weekly wages of a dollar and twenty cents; and the mother helped out by taking in washing, and by binding boots for a shoemaker named Phipps, who had a small shop next door. This shoemaker had a ten-year-old son named Harry. In the evenings the two little child workers, Andy and Harry, laid the foundation of a friendship and partnership that meant, in after life, power and fortune for both.

The Carnegies saved every possible cent, and when the father died, seven years later, they had bought and paid for the small black frame house in which they lived. After Andrew had been a bobbin-boy for a year, he was promoted to be a stoker for a furnace in a cellar, with a raise in wages of sixty cents a week. He had partial charge of a small engine, and the work was hard and responsible. One evening his father came in with cheerful news.

"Andy, I ran across J. Douglas Reid to-day, who used to live in Dunfermline. He's doing well in the telegraph business here, and he says he'll give you a job as messenger boy at three dollars a week."

CARNEGIE IN A TELEGRAPH OFFICE

And so, when he was fifteen, Andrew climbed out of his dark cellar and entered the gayer and more adventurous world of commerce. Telegraph offices have always been notably



THOMAS A. SCOTT

THE RISE OF ANDREW CARNEGIE

good schools for the breeding of bright boys, and this particular office appears to have been a veritable Eton in this respect. Among the lads who sat beside Andrew Carnegie on the wooden bench were Robert Pitcairn, now one of the highest officials of the Pennsylvania Railroad; David McCargo, afterward superintendent of the Allegheny Railroad; and William C. Moreland, who became city attorney of Pittsburgh. The foreman in charge of these boys, Jacob H. Larcombe, is still alive, and Mr. Carnegie has recently given him a pension of seventy-five dollars a month.

"He was kind to us boys," said the steel king.

"Break orders to save owners," has always been one of Mr. Carnegie's favourite mottoes; and he began early to follow it himself. One morning when the operator was absent, a message was signalled from Philadelphia. The boys were forbidden to take despatches, but young Andrew jumped to the instrument and received it. When the operator arrived and found that the message was perfectly correct, the youngster was not only forgiven, but promoted to be an operator, with a salary of three hundred dollars a year. At nineteen, having attracted the notice of Colonel Thomas A. Scott, who was at the head of the Pennsylvania Railroad interests in Pittsburgh, he was again moved higher, and became a railway operator, with four hundred and twenty dollars a year.

Soon afterward, during the absence of Colonel Scott from his office, an accident was reported on one of the lines, which tied up the road. Young Carnegie acted at once. With a dozen telegrams, each signed "Thomas A. Scott," he set the trains in motion and prevented a costly blockade. For this "lawless initiative" he was made Scott's private secretary, and favorite protégé. It was, in fact, the colonel's friendship that gave Carnegie his first real footing in the commercial world.

THE ROMANCE OF STEEL

THE BEGINNINGS OF A GREAT FORTUNE

As private secretary of the most influential railroad magnate in Pittsburgh, he was in a position where all manner of special privileges dropped into his ready hands. The first plum came in the shape of a chance to buy ten shares in the Adams Express Company, at sixty dollars a share. His mother raised five hundred dollars by mortgaging the little home; Colonel Scott lent him the remaining hundred; and he became a capitalist. Every month he received a dividend of six dollars, which opened his eyes to the magic of share-holding. To find that he could make money earn profits for him was a new discovery.

Although he could save little out of his salary of fifty dollars a month, he was soon the possessor of shares in a heterogeneous collection of enterprises, all being in some way related to railroading. Some, not all, of these enterprises were as follows:

The Woodruff Sleeping Car Company.

The Columbia Oil Company.

The Duck Creek Oil Company.

The Dutton Oil Company.

The Pittsburgh Elevator Company.

The Citizens' Passenger Railroad Company.

The Birmingham Passenger Railroad Company.

The Third National Bank of Pittsburgh.

A locomotive works and a bridge works, both of which he himself organised.

For ten years, from 1855 to 1865, Andrew Carnegie was an active little commercialist butterfly, flitting from venture to venture, but remaining in the service of the Pennsylvania Railroad, and succeeding Colonel Scott as superintendent when he was twenty-eight. One of the favourite maxims of his later years had not at that time occurred to him—"Put all your eggs in one basket and then watch that basket." He

THE RISE OF ANDREW CARNEGIE

found that banks would lend him money, that inventors and promoters sought his assistance, and that his note was almost equal to legal tender among many Pittsburgh business men.

His first thousand dollars was made in an oil speculation, and without the investment of a cent. He gave his note in return for a block of stock, and then paid for the stock out of the dividends. The company bought the Storey Farm, famous among oil men, for forty thousand dollars; and before many years the market value of the shares was five million dollars. In a single year the cash dividends amounted to several times the cost of the farm.

CARNEGIE ENTERS THE IRON BUSINESS

Just about the time when Captain Ward bought the Kelly and Mushet patents and began to make steel, Andrew Carnegie first took notice of the profitableness of the iron business. On May 2, 1864, he paid Thomas N. Miller eight thousand nine hundred and twenty-five dollars for a one-sixth interest in the Iron City Forge Company, the other shareholders, besides Miller, being Andrew Kloman and Henry Phipps. The company was making money. The price of axles, which were its specialty, had soared from two cents a pound to twelve.

At this time Carnegie organised the Keystone Bridge Company. He succeeded in placing stock in the hands of J. Edgar Thomson, president of the Pennsylvania Railroad; Colonel Scott, now vice-president; and a number of minor officials. The company, which was successful from the first, paid dividends of twenty-five per cent. In four years Carnegie had paid for his stock out of its profits. While the Keystone Bridge Company was by no means the first to build iron bridges, it became, with the powerful backing of the Pennsylvania Railroad, the most prosperous bridge company

THE ROMANCE OF STEEL

in the United States. Mechanically, its success was due to the ability of three bridge-makers named Piper, Shiffler, and Linville; financially, it was due to the diplomacy of Andrew Carnegie in floating the stock among railway men.

Elated by this quick and easy method of obtaining wealth, Carnegie resigned his position as railroad superintendent, and never afterward held any salaried place. He now became a capitalist. He was in the iron business largely by accident, and not by any preference. After the Civil War, when prices fell and new grooves had to be made for the industry, he regretted having entered upon such a "hazardous enterprise." For three years the Kloman-Miller-Phipps-Carnegie company made barely enough to keep out the sheriff. There were practically no dividends. Again and again Miller, who was the wealthiest of the partners, had to advance the money to pay the workmen's wages. Sometimes the workmen had to be paid in orders for groceries on a local store.

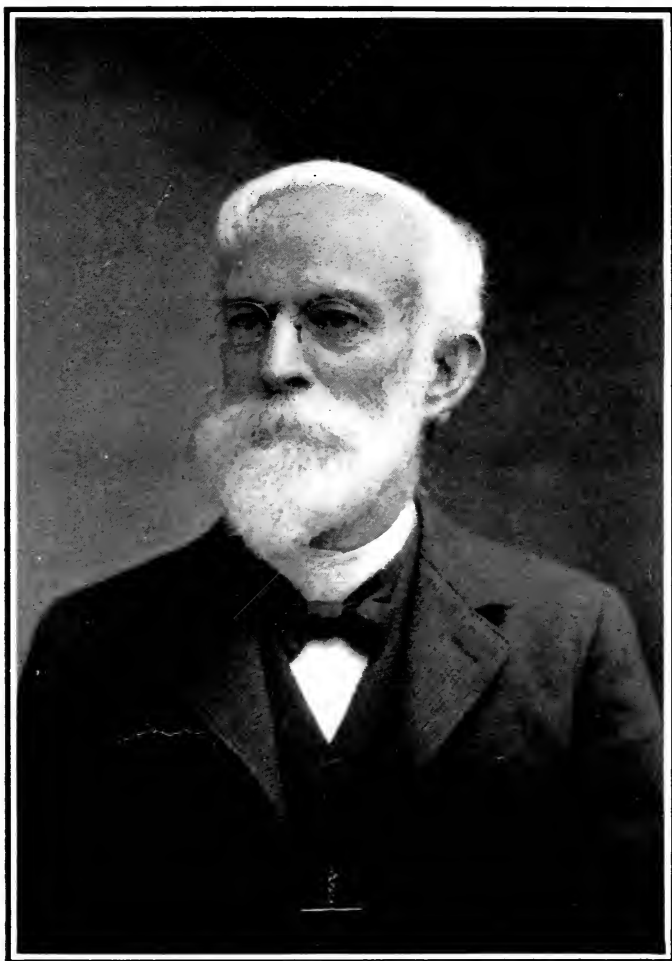
"It is no credit to any of us that we did not 'bust' twenty times," said Miller.

Andrew Carnegie, who took a nine months' jaunt through Great Britain as soon as he had thrown off his railroad cares, said:

"When I returned, I found the Union Iron Mills, in my opinion, going as fast as they could into bankruptcy."

"Carnegie had his share of hard times when he began," said a white-haired Pittsburgh puddler. "I have seen the time when he would have to pawn a pile of pig iron to get ready money. Then we puddlers couldn't touch the pig until the storage company came and released it."

But Carnegie had the virtues of inertia as well as of enterprise. He refused to quit the water-logged hulk, even when shipwreck seemed inevitable. His partners were wrangling and threatening to make one another walk the plank. The



THOMAS N. MILLER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE RISE OF ANDREW CARNEGIE

puddlers were on strike. Miller was discouraged, and decided to drop out; whereupon Carnegie promptly offered to buy his holdings. Instead of Miller being ejected by Carnegie, as has often been asserted, he was delighted to get rid of his stock at thirty-two dollars a share. In this way Carnegie bought for seventy-three thousand six hundred dollars a little package of printed paper which thirty-four years afterward he sold to the United States Steel Corporation for millions. "Luck!" reflects Miller. "Foresight!" claims Carnegie. There was probably a little of both elements in the transaction.

In a few months the storm had cleared. The waves subsided. The wind shifted to the rear. The sun broke out overhead. So it was always in the whimsical iron and steel business of earlier days. Vast and undetected social causes were forever making sport of it, speeding it toward the golden isles or dashing it on the rocks. The most apparent cause of its sudden activity in 1868 was the boom in railroad-building. Between 1866 and 1872 the total mileage in the United States was practically doubled, and the iron men worked themselves breathless to supply the demand.

CARNEGIE AS A BUSINESS MAN

Carnegie's chief asset at that time—the friendship of railroad men—made him beyond a doubt the most useful of all the partners. Seldom has there been an abler drummer. Week after week he arrived at the office with a smile of victory, and tossed to Phipps, his plodding partner, contracts bulging with profit. He was not, and has never been, a practical maker of iron and steel. The only occupations in which he served any apprenticeship were telegraphy and railroading. But his success in securing profitable orders at this time was what mainly put the balance on the right side

THE ROMANCE OF STEEL

of the ledger. After all, the chief end of commerce is to sell goods.

Even the strike of the puddlers brought good fortune. One of the imported strike-breakers, John Zimmer, showed the partners how to build an improved plate-mill, the first of its kind in the United States. It is now known as the Universal Mill. This at once added thousands to the firm's profits, and since that date has been the means of pouring millions into the iron and steel treasury. In fact, that greatest of all slabbing-mills at Homestead, which produces a steady stream of thirty thousand tons of steel slabs a month, is descended directly from the original Zimmer mill built by the German strike-breaker forty years ago.

With the exception of Kloman, the partners had all been boyhood friends. Miller, Phipps, and the two Carnegie boys had been child workers together in Allegheny. Together they had gone to borrow books from the kindly Colonel Anderson, and together they had discussed the campaigns of George Washington and the heroes of Sir Walter Scott. They had sat side by side in the same Swedenborgian Sunday School, and rehearsed together in the same singing-class. Whenever they had a holiday, which was seldom, they went on long rambles together upon the cliffs or along the river's bank.

They appear to have been far superior to ordinary boys. There was some method even in their play. Andrew's greater assertiveness made him the natural leader of the little group, although in several special boyish attainments he was outdone by the others. At first Miller climbed up more quickly than the rest, and gave all three their start in the iron business. He rose to be the purchasing agent of the Fort Wayne Railroad; in this way he became acquainted with Kloman, and got partnerships for his young chums. To Phipps, he lent sixteen hundred dollars to buy a share from Kloman, and afterward

THE RISE OF ANDREW CARNEGIE

introduced the Carnegies, first Tom and then Andrew. The average age of the four partners, when they began their iron-making careers in 1865, was only twenty-seven; but for more than a dozen years they had been partners in play and in ambition.

CARNEGIE AS AN AUTHOR

The question has often been asked: "Does Mr. Carnegie write his own books? Is it possible that so busy a man should produce half a dozen volumes or does he employ some secretarial proxy?" In the course of my digging and delving I have discovered a manuscript which should settle this disputed question once for all. The fact is that not only has he been a constant reader of good books, but he was also in his boyhood a writer of fluency and force. Here, for instance, is a paragraph of Carnegian rhetoric, from an essay on "Labour," written when he was fifteen for a Pittsburgh paper, but never published:

Labour is the universal law of our being. Nature does not give us any finished product. Man must eat his bread in the sweat of his brow or not at all. Idleness should be unthroned, and Industry crowned in her stead. It is high time that drones should occupy at least the lowest position in society. A working-man is a more useful citizen and ought to be more respected than an idle prince.

Carnegie reiterated the latter opinion fifty-five years later when he said:

"I would prefer to have my niece marry an honest workman than a worthless duke."

His ambition appears in a letter written to an uncle in Scotland when he was seventeen years of age, in which he says:

I gave up my position as a telegrapher because I could only work up to six or seven hundred a year. Opportunity for advancement is better than higher wages.

THE ROMANCE OF STEEL

This was immediately after he had accepted a position under Colonel Scott at thirty-five dollars a month. And the news that he had by this time become a patriotic young American is shown in the statement in this letter that George Washington was fully as great hero as Wallace or Bruce.

Another fact concerning his literary acquirements which is not generally known is that he received a thorough education at the hands of tutors as soon as he could afford the time and money to obtain it. In 1867, when he evolved into a capitalist and was making his home at the St. Nicholas Hotel, in New York, he resolutely went through a long course of study. Travel and education were what he bought with his first money.

CARNEGIE'S THREE EARLY PARTNERS

Of the other partners, Henry Phipps was the exact antipodes of Andrew Carnegie. He was a master of detail, an engineer of economies. The workmen found that he had a microscopic eye. No small waste or extravagance escaped his notice. Beginning as a jeweller's errand-boy, he had risen to be the bookkeeper of a spike-mill concern. He was faithful. He was plodding. He was energetic. For years, when the Kloman-Miller-Carnegie-Phipps company was too poor to hire a bookkeeper, he trudged three miles every week-day evening, from the spike-mill to the iron-works, posted the books, and trudged back home to Slabtown, Allegheny City. There were no street-cars in 1865, and if there had been, the thrifty Phipps would probably have regarded ten cents as too high a price to pay for avoiding a mere six-mile walk along a canal-bank.

He was not fond of publicity. The task in hand, whatever it happened to be, monopolised his whole attention. Apparently, as he rummaged about on the iron-works junk-heap, or dickered to get half a dollar taken off a coal bill, there

THE RISE OF ANDREW CARNEGIE

were no visions in his mind of a golden future with the stately Beaufort Castle in the background. While Carnegie was using all his railroad influence and all his arts of diplomacy to get the highest possible prices for their goods, Phipps was pushing the cost-line down to a level it had never reached before. In such a quiet, self-obliterating way did he carry on his work that few outside of his partners knew his value to the company.

Phipps was the financier of the group. None could face an insistent banker as well as he.

"What we used to admire in young Phipps was the skilful way in which he could keep a check in the air for two or three days," said the president of one of the Pittsburgh banks of that time.

The old black mare, Gypsy, which he drove on his daily rounds, became so familiar with her duties that she would criss-cross from bank to bank of her own accord. Afterward, when prosperity came to the partners, it was said to be impossible to drive Gypsy in a straight line through the banking section of Pittsburgh.

Andrew Kloman had learned his trade in Prussia, and he had progressed far beyond his teachers. He was probably unequalled in Pittsburgh as a mechanical genius. He had little business ability. In disposition he was somewhat suspicious and irascible, and frequently had to be soothed and mollified by his younger partners; but in the iron-mill, among his workmen, he had no superior in his day. He came into notice in the industrial world by making a fine quality of car-axles, by a process of his own invention. He worked with German thoroughness, and also with the help of an inventive brain. He created a dozen or more devices and machines before he severed his connection with the company.

As for Tom Carnegie, the youngest of the partners, he was a very important partner at the Pittsburgh end of the busi-

THE ROMANCE OF STEEL

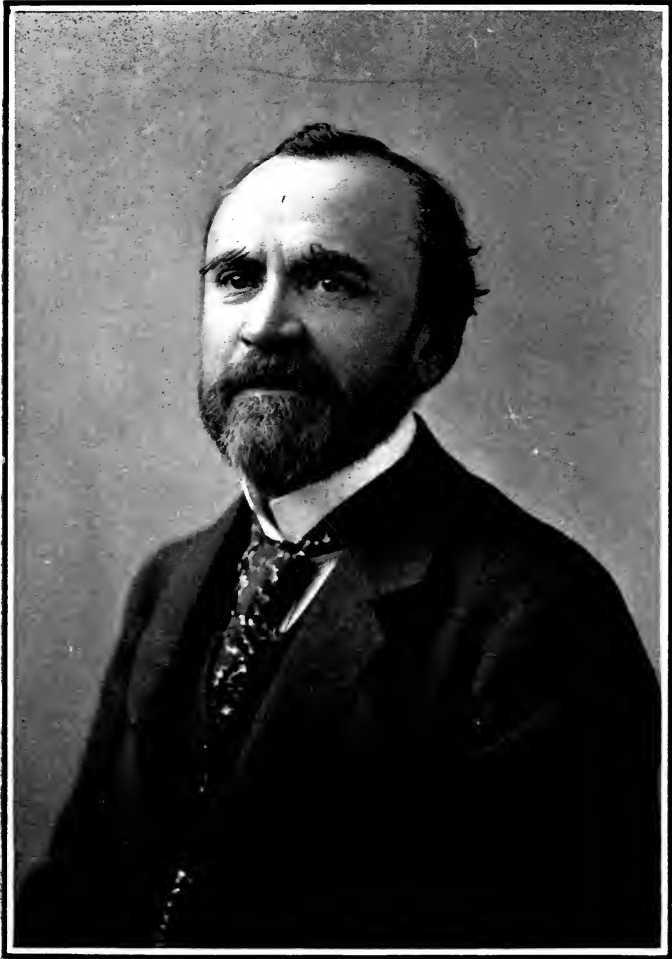
ness. He was one of the most popular men in Allegheny County. Every man who shook his hand and looked into his honest black eyes became his friend. He was absolutely trustworthy. His "Yes" was "Yes," and his "No" was "No." He was the borrower and the peacemaker of the company. Again and again he saved the young firm from trouble by converting friendship into cash. He was no talker; but "Tom Carnegie's word is better than most men's bond," was a saying in Pittsburgh which illustrates the respect which he received.

He lacked his elder brother's restless ambition. Left to himself, Thomas M. Carnegie would probably never have been numbered among the thousand millionaires of iron and steel; but his integrity, his business sense, and his social qualities made him a very necessary part of the combination. He and Miller married sisters, the daughters of William Coleman, one of the richest and ablest of Pittsburgh's ironmasters; and these marriages, as we shall see, brought Coleman into the company and added greatly to its standing.

All five partners were self-made men. They had been pushed out on the cobblestones in boyhood with little or no schooling. They had never owned a dollar which they had not earned. They were the sons of workingmen, children of the masses. They had no social standing, if such an item were considered in Pittsburgh during the sixties. They were only five out of the twenty-five thousand grimy men whose sweat and thought and skill built up the Smoky City between its rivers. True, they were helped from the beginning by the friendship of wealthier men, but they had merited that friendship by their energy and ability. This is not a story of luck. It is a story of daring—persistent and successful daring.

CARNEGIE AS A BOND-BROKER

The men were self-made, but the business was not. It did not enlarge itself out of its own profits, according to the con-



HENRY PHIPPS



THE RISE OF ANDREW CARNEGIE

ventional ideas of thrift and diligence. If it had depended upon its own dividends for its development, it is not likely that its biography would have been of national interest. In order to get more capital, one of the partners had to turn bond-broker, and the others had to launch into a real-estate speculation. It was this versatility, this readiness for risks and adventures, which more than anything else put the Carnegie Steel Company ahead of its competitors.

Early in 1872 Andrew Carnegie received a letter from Colonel Scott, his former employer, requesting him to call at the office of the Pennsylvania Railroad Company.

"Big business, Andrew!" said Scott, as Carnegie entered the office. "Do you think you can handle a six-million-dollar deal for us?"

"I can," replied Carnegie, self-confident and undaunted, although up to this time he had not had any personal experience with the word "million."

"Well," said Scott, "we're planning to build a branch road to Davenport, Iowa, and we want to place six million dollars' worth of the bonds abroad. This is the best chance you ever had to make a big lump of money in a little while, if you are successful. Of course if you fail you get nothing."

Carnegie packed the bonds in his valise and sailed at once. He had letters of introduction to European financiers and he presented his case with such enthusiasm that every bond was sold. His commissions amounted to a hundred and fifty thousand dollars. The transaction, which more than doubled his fortune, was his first great uplift, financially, though it afterward proved somewhat unfortunate in other respects. The bonds, through no fault of Carnegie, depreciated, and the buyers lost a great part of their money.

Three months after he returned, Colonel Scott gave him a second block of bonds to sell, and his commissions added seventy-five thousand dollars more to his coffers. Thus a few weeks' work as a bond-broker netted him two hundred

THE ROMANCE OF STEEL

and twenty-five thousand dollars, and enabled him to become, for the first time, the principal stockholder in the iron-making enterprise.

While he was in England, his partners and several friends became co-operators in a real-estate speculation. They bought a large tract of land in Pittsburgh, called the Mowry Homestead, and subdivided it into building lots. These lots sold quickly and at a high price, so that when Carnegie returned, they, too, had some surplus money for investment. Among the speculators were William Coleman, the father-in-law of Thomas Carnegie, and a well-known Pittsburgh merchant named David McCandless, who had been a member of the little Swedenborgian church which was attended by the Carnegie family. And so, by these two successful get-rich-quick adventures, nearly a quarter of a million dollars was made available, more than the partners could have accumulated in many a long year of iron-making.

CARNEGIE AND THE BESSEMER PROCESS

William Coleman was the first of the group to suggest the making of steel by the Bessemer process. Oddly enough, Andrew Carnegie was the chief objector. At this time the future steel king was living in New York, picking up whatever he could in the line of negotiating securities, and apparently without any definite plans as to the future. As Coleman had been a manufacturer of iron rails, he could best appreciate what the Bessemer process meant to the industrial world. He visited Morrell in Johnstown, Chisholm in Cleveland, and Holley in Troy, and observed their plants in operation. First he won over Thomas Carnegie to his proposal to build a steel plant, and then McCandless; but Andrew Carnegie stood aloof and said:

“Pioneering doesn't pay a new concern. Wait till the process develops.”



DAVID MCCANDLESS



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE RISE OF ANDREW CARNEGIE

The new steel-making was still an experiment in the United States. It was doubtful whether a single American plant had as yet made it a commercial success. But during his visits to England, as early as 1866, Carnegie watched the development of the process with interest. He fully realised the growing demand for cheap steel. At Derby he saw a crucible steel rail which had been laid down fifteen years before and was still in good order. He was told that the traffic was so heavy at this point that the iron rails were formerly renewed every three months.

A few years later he was fully converted to the new process, and saw for the first time the convincing spectacle of a Bessemer converter in full blast. From that moment the word "steel" was stamped upon his mind with a white-hot impress. Nothing that he had ever seen was as picturesque—as fascinating—as miraculous in its easily controlled force and fury. It was half a furnace and half a cyclone, yet it was obedient to the touch of a boy's hand. Give it thirty thousand pounds of common pig iron, and presto! the whole mass was blown into steel. As Carnegie stood beneath its volleys of orange and yellow sparks, his own mind became converted. The sudden blast of his ambition and resolve blew away the lure of financial life and the promises of speculation. Nothing was left but steel.

As quickly as steam could push him through water and pull him over land, he rushed to Pittsburgh. His partners had been discussing, reflecting, estimating, hesitating. His enthusiasm swept their hesitancy into decision, and the firm of Carnegie, McCandless & Company was organised at once with a capital of seven hundred thousand dollars. Andrew Carnegie put in all his bond-brokerage profits and twenty-five thousand dollars besides; Coleman subscribed a hundred thousand, and Kloman, Phipps, McCandless, Shinn, Scott, Stewart, and Thomas Carnegie put in fifty thousand apiece. Shinn came

THE ROMANCE OF STEEL

into the new concern as a friend of McCandless, and Scott and Stewart were neighbours of Thomas Carnegie's.

THE EDGAR THOMSON STEEL WORKS

Carnegie and Coleman had picked out a tract twelve miles from Pittsburgh containing more than a hundred acres, which was notable as the spot on which General Braddock was defeated by the French and Indians in 1755. Alexander L. Holley took the contract to draw up the plans for the new plant; Captain "Bill" Jones, taking a hint from his friend Holley, arrived just in time to be put in charge of it; and in this way the famous Edgar Thomson Steel Works was launched upon its victorious career.

The partners had tactfully named the works after the influential president of the Pennsylvania Railroad; and this little act of foresight helped to fill the cash-drawer.

A system of rebates—at that time not contrary to law—was established, which enabled the steel-makers to ship their freight cheaper than their smaller competitors. The reason given for this rebate system was that the steel men saved expense to the railroad by loading and unloading their own cars and making up their own trains. Thus in various ways Andrew Carnegie's influence with his former employers proved to be a most valuable asset.

All the partners in the new firm were active. Andrew Carnegie, Scott, and Stewart drummed up orders. McCandless and Coleman furnished the prestige and business experience. Kloman, in blue blouse and overalls, looked after the men and machinery. Shinn was general manager, and soon had the business so well organised that he could account for every quart of oil or pound of nails. Phipps was in and out of every department, suggesting improvements and economies. And Thomas Carnegie was a sort of emergency man, minimising friction at all points.

THE RISE OF ANDREW CARNEGIE

A friend of the partners said at the time, describing the new firm:

“Shinn bossed the show; McCandless lent it dignity and standing; Phipps took in the pennies at the gate and kept the pay-roll down; Tom Carnegie kept everybody in a good humour; and Andy looked after the advertising and drove the bandwagon.”

There is more wit than truth in this estimate of Andrew Carnegie's value to the company, as he had organised it, furnished more than one-third of the capital, buttressed it with wealthy friends, and secured the largest and most profitable orders.

Andrew Carnegie's speaking part in the steel drama did not call for modesty and self-obliteration. To climb high in the social scale, to keep always in the public eye, to secure the friendship of statesmen and financiers—all this was but the means to an end. It was no more than the scaffolding around the iron and steel works, by means of which the works were developed beyond the reach of competitors. Every cubit that Mr. Carnegie added to his social stature elevated the whole business structure with which he was connected. By his extraordinary intellectual ability, his versatility as an entertainer, his knowledge of celebrities, his constant globe-trotting, his cheery disposition and wide range of conversation, he became a welcome guest in the drawing-rooms of New York and Washington. And always and everywhere he was a man of business. His purpose was to sell steel billets and steel rails.

THE SECRET OF CARNEGIE'S SUCCESS

He realised to the full the commercial value of prominence and friendship. While his competitors buried themselves in dingy shops and offices, and allowed business cares to worry them into nervous prostration, Carnegie placed him-

THE ROMANCE OF STEEL

self where he could survey the whole field and lay larger plans than the old-fashioned steel-makers.

“Carnegie owes a great deal to his habit of travelling,” said George Lauder, his cousin. “While other men were wallowing in details, he was able to take a wider view.”

This was new, therefore unpopular and misconstrued. Carnegie had originated a new business principle in the steel trade—that big men should do big things and small men do small things. “I never write a letter that any one else can write for me,” he said. “Mr. Carnegie was not worth fifteen dollars a week as a clerk,” one of his partners assured me. But Carnegie saw no reason why he should do a clerk’s work. He did his own work well because he did not try to do anything else. He initiated such a change in business tactics as had taken place in military tactics. The other steel-makers of the seventies were leading their workmen in person, just as Harold led his Saxons and Leonidas his Spartans. Carnegie, like Wellington or Napoleon or Oyama, directed the battle from a near-by hill, from which he could survey the whole combat and manœuvre his forces to the best advantage. He fought, but not as the private soldier. He was a general of industry—a fact often overlooked by the captains. The steel men of Pittsburgh, as they plodded up and down their dirty, half-paved streets, shrouded in a perpetual sooty fog, growled and scoffed at the “parlour knight” who won his victories at the banquet or in the Pullman car. But one fact they could not deny or belittle—the fact that he seldom lost a battle.

Carnegie had from boyhood the faculty of attracting the attention of the great and the rich. It was more than a knack. It was an instinct. And deep down beneath his diplomacy it was based upon the solid worth and forcefulness of his character. He was as great as they. Long before his wealth had made him famous he was the personal friend of Gladstone,

THE RISE OF ANDREW CARNEGIE

Rosebery, Matthew Arnold, Herbert Spencer, John Morley, and James Bryce.

When the young Prince of Wales visited this country, in 1860, there were scores of telegraph operators and railroad men standing along his line of travel; but Andrew Carnegie was the only one who sprang forward and offered the titled stranger an exciting ride on a locomotive. As the two young men—one a prince by virtue of his birth, and the other by virtue of his competency—clung to the narrow seat in the engineer's cab and were jolted along the crooked track, there began the springtime of a friendship which in its autumn brought business to the Pittsburgh steel-mills.

All the wiseacres of Pittsburgh looked upon Carnegie's social capers with outspoken disapproval. Daniel J. Morrell and John Stevenson refused to be his partners, on the grounds that he was too flighty and speculative. The presence of Coleman and McCandless in the firm was absolutely necessary to preserve its credit, at least during the earlier years. One day old John Moorhead, the wealthiest man in Pittsburgh, pointed Carnegie out to a friend and said:

"There goes a foolish young man. He has bitten off more than he can chew. He wasn't satisfied to do a small, safe business, like the rest of us. He had to launch out. Mark my words—he'll come to grief yet!"

Thirty-five years ago Pittsburgh had no prestige as an iron and steel centre. It was mainly an importing and distributing point. There were only seven small blast furnaces, producing in twelve months about as much as one first-class modern furnace can make in eight. Iron rails were made, but no steel ones. Pig iron was scarce at forty dollars a ton. There was nothing, therefore, in the location of the Carnegie mills which can account for their record-breaking and profit-making career. And as Mr. Carnegie's partners, without exception, were only moderately successful before and after

THE ROMANCE OF STEEL

their connection with the company, it is reasonable to infer that the secret lay to a large extent in the remarkable personality and business methods of the young Scotsman who "drove the band-wagon."

THE FAMOUS LUCY FURNACES

The prosperity and fame of the Carnegie company did not begin until 1874. Before that, there had been nine years of struggle for lack of capital and equipment. In 1873 two new furnaces had been built, now famous in the iron world as the Lucy and the Isabella. The Lucy belonged to the Carnegie company, and the Isabella to a combine of Pittsburgh iron men. These furnaces were of equal size, and belonged to rival owners. They began at once to race in the production of iron, and their amazing achievements for the first time attracted the attention of all countries to Pittsburgh.

The average output of a furnace was then fifty tons a day. There were wild hurrahs at the Carnegie company's works in 1874, when, for the first time in the history of iron-making, the Lucy turned out a hundred tons of iron in one day. In England the news was received in silent incredulity. To believe that a single furnace could pour out twenty-two thousand dollars' worth of iron in a week was too much. Where was Pittsburgh, anyhow? And who was this Carnegie who made such preposterous claims? No industrial "Who's Who" mentioned the name of this boaster from the wild West. It was of course a newspaper myth, concocted by the sea-serpent editor. So said the iron-makers of Europe, until some of them visited Pittsburgh and saw for themselves the river of molten iron flowing wide and deep.

A second Lucy furnace was built in 1877, and the Carnegie company operated both until the organisation of the Steel

THE RISE OF ANDREW CARNEGIE

Trust. During that period of nearly thirty years they produced more than three million tons of iron—enough to give four pounds apiece to every man, woman, and child on the globe; enough to pave a road seventy feet wide with iron plates an inch thick from New York to St. Louis. The Carnegie company received for this enormous output about fifty-seven million dollars, probably one-fifth of it being clear profit.

One of the original employees at the Lucy is still at work there. He entered the service as a mechanic, and has now been captain of the furnaces for many years. "Dean of the blast furnace corps of the world," Mr. Carnegie calls him. "None of the partners," he adds, "is dearer to his fellows and his old chief than Jim Scott."

There is nothing idyllic about the Lucy furnaces. They have received no honours, no medals, no monuments. They have inspired neither artist nor poet. Yet for thirty-three years, for every hour of the day and night, they have been untiringly making the useless into the useful, magically transforming the ore into a ceaseless stream of that metal which is immeasurably more precious to civilisation than all the gold and silver and rubies and diamonds. Here was the dream of the pioneer iron-makers come true. It was for this that daring John Berkeley gave his life in Virginia centuries before—that obstinate Thomas Dexter battled with the Puritans—that Baron Stiegel sacrificed his native land. The Lucy furnaces represent the very utmost that the human race can do in the iron-making craft—the sum total of centuries and centuries of gradual improvements. When the eyes of the American people are lifted from the kindergarten romances of myth and fiction to the grandly moving epics of industry that give distinctive value to the history of our republic, their story will become a national heritage.

THE ROMANCE OF STEEL

A GOLDEN FLOOD OF PROFITS

With H. M. Curry, who was in charge of the Lucy furnaces, breaking the world's record in the production of pig iron, and Captain "Bill" Jones doing even more wonderful things at the Edgar Thomson Steel Works, the Carnegie company began to take shape as the most effective millionaire-making machine the world has ever seen.

"We shall make forty per cent. next year," cried Carnegie in 1876.

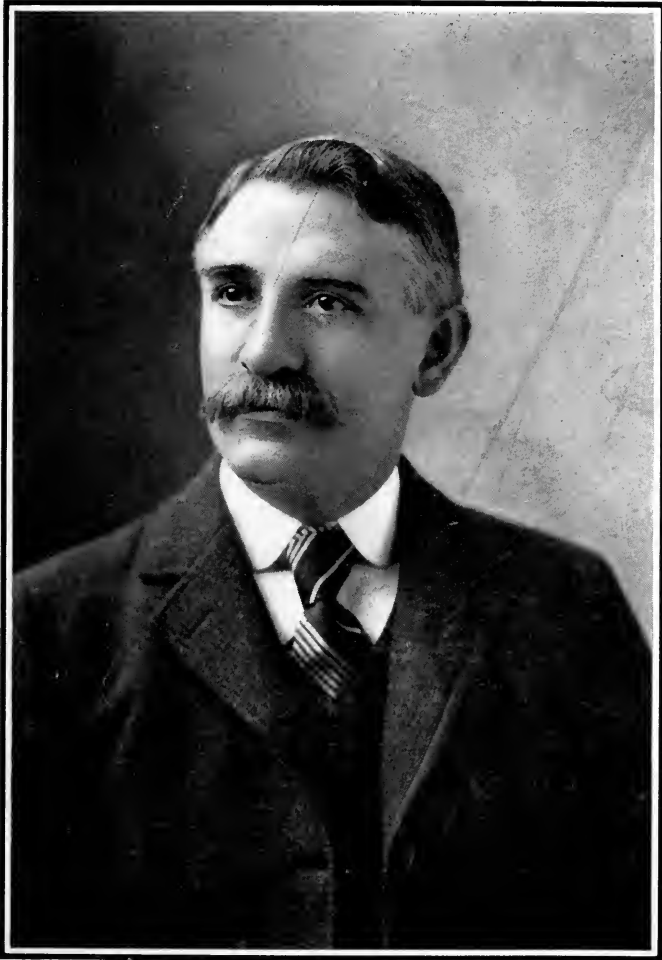
His partners smiled but shook their heads. When the next year was ended, and the last dollar counted, they found that their clear profit was nearly forty-two per cent., which was paid to them partly in stock and partly in cash. When the good news was announced, Carnegie made a second prophecy.

"Next year we shall beat down the cost of steel rails to thirty-eight dollars," he said; "and we shall get forty-two dollars and fifty cents a ton for them."

This prophecy was fulfilled with an almost uncanny precision. The cost of the rails was reduced below thirty-eight dollars, and the average price received was exactly forty-two dollars and a half. In one month they netted on rails alone over fifty-two thousand dollars—more than Andrew Carnegie's father could have saved in two hundred and sixty years.

As Carnegie conducted his business affairs from all parts of the world, he happened to be setting out for a climb of Mount Vesuvius when he heard that his second guess had come true.

"Tell Captain Jones," he writes, "that there was a proud little stout man who gave a wild hurrah when he saw that the Edgar Thomson Works were ahead. It was a close race with the Cambria Iron Company, but they had a start. Besides, we had to go through the measles, you know."



JAMES SCOTT



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE RISE OF ANDREW CARNEGIE

Although the stock was being steadily increased, the company's earnings in that year were thirty-one per cent. It was always the rule, however, to declare small dividends; the partners were agreed in the policy of keeping most of their profits for the improvement and extension of their works. They were now making one-seventh of all the Bessemer steel in the United States, although ten companies had started before them. Their competitors were also prospering, but not to such an extent as Carnegie and his partners. In 1880 the price of rails suddenly soared to eighty-five dollars a ton, while Captain Jones was turning out ten thousand tons a month at a cost of about thirty-six dollars. This war price did not continue, but while it lasted the profits were ten thousand dollars a day on the one item of rails. Again the steel mill made over forty per cent. and piled more than half a million dollars into their bulging treasury.

"Surely this cannot last," said several of the amazed partners.

"It is only the beginning!" shouted Carnegie, as he goaded the heads of all departments into a still more frenzied race for dividends.

The golden flood rose like a mountain river after a cloudburst. The sudden pressure of business taxed the Carnegie company to the point of explosion, and drove the rank and file to desperation with overwork. Night was henceforth abolished. Even twenty-four hours a day were found to be too few. If the securing of a fifty-hour day had been a task within human power, Andrew Carnegie would have succeeded in obtaining it. He had orders for eighty thousand tons of rails, and on every ton there was from forty to fifty dollars' profit. In eight months the steel plant had cleared a sum equal to its original cost. In twelve months, almost doubting their eyes, the partners figured out a gain of \$1,625,000 from the steel works and \$446,600 from the furnaces and iron-mill—a total of \$2,071,600.

THE ROMANCE OF STEEL

By this time there were only seven partners. Four had died or been bought out. If, therefore, their year's profits had been in gold, they would have had a treasure so heavy that they could not have moved it an inch. Six thousand pounds of pure gold, with an extra three-hundredweight thrown in for good measure! It was greater than the ransom of an Indian rajah, yet it was no more than the profits of one year's work for a half dozen American citizens, every one of whom had begun life in a workman's cottage. This was the dawn of the golden age. This was triumphant democracy.

Best of all, every dollar of it was clean money. It was not gained by a throw of the Wall Street dice or a speculation which scattered the seeds of future bankruptcies. For every ✓ | pound of gold they had given eleven thousand pounds of good steel. Every steel billet, every ton of rails, meant more traffic, more business, more employment, more civilisation.

It is true that at the time prices were artificially raised, both by an agreement among the steel men and by the high tariff which obliging statesmen had established. The railroads were caught between two millstones—the pool above and the tariff below. But the competition among rival railroad companies compelled them to build more lines and to re-rail old ones. Iron rails were sold for junk, and steel rails laid in their place. This outlay stimulated all branches of trade, and the increased freight and passenger traffic went beyond the expectations of the railroad men, bringing prosperity to all concerned.

A RACE FOR SUPREMACY IN STEEL

America and Great Britain were now running neck and neck in the making of cheap steel, but the latter still had many advantages. Labour was cheaper; raw materials were cheaper;

THE RISE OF ANDREW CARNEGIE

and more capital was invested. Not even a tariff wall of twenty-eight dollars a ton could prevent the English steel-makers from selling two hundred million dollars' worth of steel to American customers in three years. To see this enormous amount of American gold paid to the capitalists of Newcastle and Sheffield spurred on the steel-makers of Pittsburgh to quicken their pace. Who could be satisfied with a few dozen millions when there were hundreds in sight?

"Faster! Faster!" cried Carnegie to his men, coaxing them with presents and whipping them with censorious suggestions.

Andrew Carnegie had increased his holdings from one-third to more than one-half of the entire concern. In 1881 he found himself, after only six years of steel-making, the foremost American in the business. His capital had increased twelvefold in six years. His quarter of a million had become nearly three millions. Captain Jones had placed the crown of the empire of steel upon his head. During those six years he had not only climbed from nothing to an emperorship; he had sauntered through Great Britain on several pleasure trips; jogged leisurely around the globe, spending much time in India and Japan; and written his first book, "Round the World." Seldom has international prominence been attained with so little exertion.

It is safe to say that Andrew Carnegie invested less money and gave less time to his business, and made more money out of it, than any other self-made millionaire in the world. He found a "royal road" to wealth—or, rather, made one for himself. Through his shrewd foresight and a remarkable combination of circumstances, the rising tide of molten steel was "taken at the flood" in such a way that it swept him on to a position of power and influence greater in its scope than that possessed by most European monarchs.

In 1881 the partners reorganised under the name of Car-

THE ROMANCE OF STEEL

negie Brothers & Company, with a capital of five million dollars. Their individual holdings were as follows:

Andrew Carnegie	\$2,737,977.95
Thomas M. Carnegie	878,096.58
Henry Phipps	878,096.58
David A. Stewart	175,318.78
John Scott	175,318.78
Gardiner McCandless	105,191.33
John W. Vandervort	50,000.00

The above stock-list shows that in the Carnegie company every item, however large, was figured out to the last cent. The partners had not allowed their waggon-loads of gold to make them forget the silver and the nickel, or even the copper bawbees.

From 1880 onwards, the company never cleared less than a million a year. Its inside financial history was then unknown to the public. If the partners had not quarrelled and become carelessly talkative in their wrath, this story of their millions might never have been told. Thanks to their wrangling we know the yearly profits to a cent. Here, for instance, are their winnings in the game from 1880 until the advent of Henry Clay Frick:

YEAR	PROFITS	PERCENTAGE
1881.....	\$2,000,377.42.....	40
1882.....	2,128,422.91.....	42
1883.....	1,019,233.04.....	20
1884.....	1,301,180.28.....	26
1885.....	1,191,993.54.....	24
1886.....	2,925,350.08.....	59
1887.....	3,441,887.29.....	69
1888.....	1,941,555.44.....	39

These figures are quoted from a volume entitled "The Inside History of the Carnegie Steel Company," by J. H. Bridge—a book which is reliable so far as most of its statis-

THE RISE OF ANDREW CARNEGIE

ties are concerned, though wholly one-sided in its inferences.

Roughly speaking, this was a total profit of sixteen millions in eight years, on an original investment of five millions—an average of forty per cent. a year. And the bulk of the money went to Andrew Carnegie, as the number of the partners dwindled from seven to four. Mr. Carnegie's personal wealth at this time was about fifteen million dollars. His quarter million of brokerage money had earned him a million dollars a year since he had invested it in 1873. It had multiplied itself sixty times over.

THE FATE OF CARNEGIE'S PARTNERS

Previous to the incoming of Mr. Frick—which, as we shall see, marks the beginning of a new period in the steel business—Mr. Carnegie had worked with thirteen partners. It was an unlucky number, so Pittsburgh people say, for the partners. Finally but one of the thirteen survived—Henry Phipps. Some were dropped; some begged to be let go; and some were plucked from the narrowing circle by death. Like the "ten little niggers" who were so strangely cut off one by one, the members of the firm decreased with fatal regularity until none remained except "Andy" and "Harry," the son of the weaver and the son of the cobbler, neighbours in Barefoot Square, Slabtown, Allegheny City, a short thirty years before.

The order in which the partners dropped out was as follows:

THOMAS N. MILLER, 1867—To Thomas N. Miller, Andrew Carnegie owes his start in the iron business. He was the Allegheny City playmate of both Phipps and Carnegie, and developed into a man of high character and kindly disposition. Although he and Mr. Carnegie have had several small disputes concerning business transactions, they have

THE ROMANCE OF STEEL

remained fast friends. Every year the two meet to talk over old times. Miller is to-day enjoying an old age of quietness and good health, living in a modest brick residence in Pittsburgh. His memory is unclouded, and many of the personal anecdotes in this history were related by him to the writer.

He has a vivid recollection of the moneyless condition in which he and the Carnegie brothers found themselves, as boys and young men. Long after they were rich in stock, they were still poor in ready cash. On one occasion, he says, when Andrew Carnegie was twenty-seven years old, he and Miller and Vandervort spent the summer tramping through England and Scotland. When they returned to New York, and had engaged one of the cheapest rooms in French's Hotel, Miller said:

"Let's count our money, boys, and see if we have enough to take us home by way of Niagara Falls."

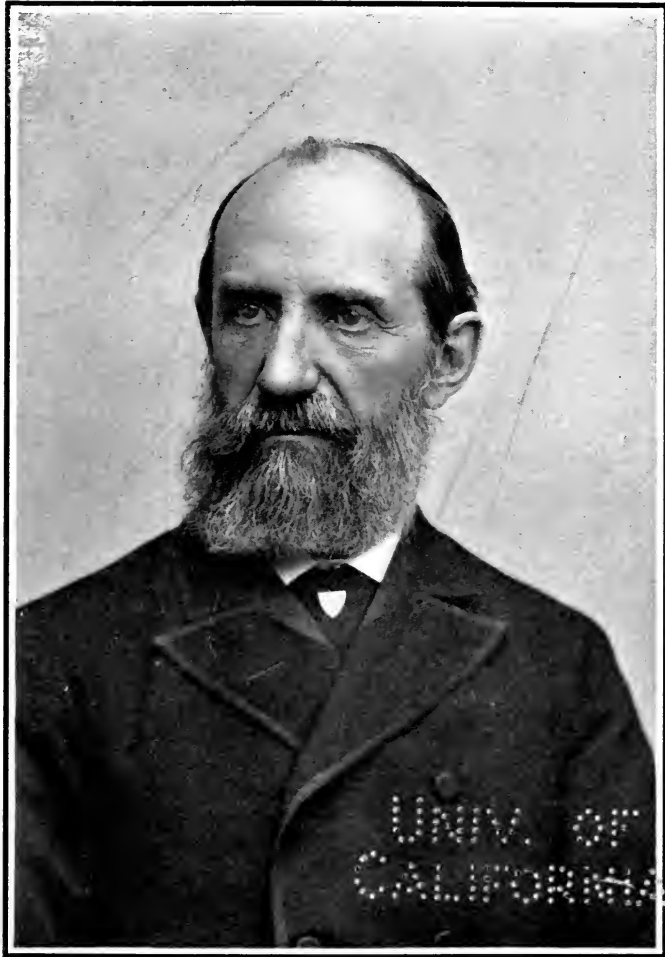
They spread their money on the bed, and found that they could just afford the extra expense. "Agreed!" said Carnegie, and so in 1862 they had their first view of the majestic Niagara.

Carnegie himself tells a story about Vandervort in connection with this trip. His own income at that time, he says, was about fifteen hundred dollars a year, while Vandervort was a poor student, living almost from hand to mouth. Vandervort, therefore, regarded Carnegie as already a gentleman of fortune.

"Great Cæsar, boys!" he would say, thumping the table until the beer spilled, "if I ever get fifteen hundred dollars a year income, catch me working like a slave, as Carnegie and Phipps do!"

Not long afterward, Vandervort had thousands a month; but, says Carnegie, "Vandy worked harder than ever."

Miller was not forced out by Carnegie, as has been sometimes charged. On the contrary, he urged Carnegie to relieve him of his share in the company. He had two reasons for



WILLIAM P. SHINN



LIBRARY OF THE UNIVERSITY OF CALIFORNIA
SANTA BARBARA

THE RISE OF ANDREW CARNEGIE

quitting. First, he had quarrelled with Phipps, and accused him of speculating in oil with the money of the firm; and second, the iron business had paid practically no dividends for three years. As has already been stated, Carnegie paid him seventy-three thousand six hundred dollars for his interest, and Miller flattered himself that he had got rid of an unpleasant partnership and an enterprise that was doomed to failure. Shortly before this, Carnegie had sold him, for six hundred and thirty-eight dollars, a share in an oil property which netted him a clear profit of seventy-two thousand, so that Miller was not financially a loser because of his friendship with the future steel king.

WILLIAM COLEMAN, 1876—The deal by which Carnegie obtained possession of Coleman's share seems hard to understand. Coleman was a shrewd, experienced man of business. He was among the first to appreciate the possibilities of the Bessemer steel process. He was wealthy, and not obliged to part with his property unless he freely chose to do so. Yet he sold his hundred thousand dollars' worth of stock at par, payable in five years, with interest at six per cent., in a year when the business made forty-two per cent. of clear profit.

Coleman took his money and stepped out gladly. He did not approve of Shinn as a manager. Carnegie did. Instead of being forced out, the fact is that Coleman insisted upon Carnegie buying his share of the business.

ANDREW KLOMAN, 1877—The charge has often been made, by those who have no more than a superficial or biassed knowledge of the history of steel, that the real founder of the Carnegie company was Andrew Kloman, and that he was wrongfully ejected from it when the days of its prosperity began. This is not true. The fact is that Kloman came within an ace of bringing utter ruin upon the whole enterprise. He was the shirt-sleeves partner, and therefore received more credit than the others for being the real worker of the firm. In the iron-mill he was a genius; in

THE ROMANCE OF STEEL

the office he was a child. Iron was his metal, not gold. All large business transactions confused him and made him suspicious. He was very watchful in the protection of his rights, and anxious to make money, but not qualified to cope with the wily manipulators of the commercial world.

About 1871 he was enticed into a wild-cat mining scheme, unknown to his partners. Two years later, when the Jay Cooke smash hurled so many firms into bankruptcy, Kloman's mining company went down. He fell with it, as it was not a limited liability company, and in falling nearly dragged down the whole Carnegie group.

"Make an assignment at once," said Andrew Carnegie; "and when the storm blows over we'll restore you to full partnership."

Kloman did so, squaring with his creditors for fifty cents on the dollar. During this entanglement Carnegie paid him a salary of five thousand dollars a year, and then offered him a hundred-thousand-dollar interest in the company, to be paid for out of the profits. Kloman angrily refused this offer and determined to create a new works, of which he alone would be the master. He had no doubts of his success in the new enterprise; but in a few years he discovered his mistake.

If this were a treatise on practical iron-making, it would give a foremost place to Andrew Kloman; but as it is not, as it is mainly a story of money-makers, he must necessarily be painted in the background only, and merged in the dim colouring of failure. In his after life he was unsuccessful in business, and until the day of his death he believed himself to be a deeply wronged man. On this point there will continue to be difference of opinion.

"Andrew Carnegie treated Kloman not only with fairness, but with generosity," says Thomas N. Miller.

J. EDGAR THOMSON, 1874—Mr. Thomson, who died in

THE RISE OF ANDREW CARNEGIE

this year, was the patron saint of the Carnegie company. He gave it money, and the prestige of his name, which was more than money. He bought its rails and he pared down its freight bills. At the time when its young partners were being called flighty and reckless, he patted them on the back and declared his confidence in their ability. As he cared for no business interests outside of railroading, he was not anxious to be an active partner. He had bought a hundred thousand dollars' worth of the Carnegie company's bonds in 1873, and his executors were paid in full when the bonds matured.

COLONEL THOMAS A. SCOTT, 1877—Colonel Scott was patron saint number two. Through his favour Andrew Carnegie had made his first large sum of money in the quickest and easiest way imaginable; and Scott had put twenty thousand dollars into the partners' young steel enterprise. For financial and for romantic reasons, Scott and Carnegie differed, after a friendship of more than twenty years. Both incidents are highly interesting, and it is strange that they have not found their way into print.

The financial reason of the quarrel—the lesser of the two causes—was as follows: Colonel Scott had launched out into a daring scheme for spanning Texas with a railroad, and acquiring thereby great tracts of land. He asked Carnegie to indorse his paper, and to run equal risks in the venture. Carnegie refused.

“I will either lend or give you three hundred thousand dollars,” he said; “but I am not in a position to stand behind the whole enterprise.”

Finally, Carnegie put a quarter of a million dollars into the Texas scheme, not because he expected profits, but to help Scott.

The romantic cause of the quarrel was no less than this—that Scott stole away Carnegie's sweetheart. Andrew Car-

THE ROMANCE OF STEEL

negie was very gallant in his twenties and thirties. Rumour connected his name with those of many women; but there was one for whom his regard was more than a preference. Miss Riddle, daughter of a Pittsburgh editor, fascinated the impressionable young Scotsman with her quick wit and her charm of face and manner.

"I'd like to have Colonel Scott's opinion of Annie Riddle," said Carnegie one day to his friend Miller.

"Be careful, Andy," warned Miller. "Scott's a handsome man, and you're not. If he sees Annie, he'll win her away from you."

"Well, if any other man can win Annie Riddle away from me, he's welcome to her," said Carnegie sturdily.

The following Sunday he introduced Scott to Miss Riddle, and in a few weeks it became apparent that Miller's prophecy would come true. In six months Miss Riddle became Mrs. Scott, and Carnegie was "left lamenting." In this way does love play havoc with the great affairs of the commercial world. When I mentioned this incident to Mr. Carnegie, he laughed and said that he certainly had been responsible for introducing his two friends, but that he had intended the introduction to result as it did.

"I wasn't thinking of marrying then," said he.

DAVID MCCANDLESS, 1879—Mr. McCandless, who died in this year, had done much to establish the Carnegie enterprise. Many a time the use of his name loosened the purse-strings of reluctant bankers. He had been one of the foremost citizens of Pittsburgh while "Andy," "Tom," and "Harry" were messenger boys earning half a dollar a day. He was a man who won not only the esteem, but also the affection of all his associates.

"To the day I die I know I shall never be able to think of him without a stinging pain at the heart," wrote Andrew Carnegie from India, when he heard of his partner's death.

THE RISE OF ANDREW CARNEGIE

Ninety thousand dollars was paid to his widow, which was her legal share in the company.

WILLIAM P. SHINN, 1881—Mr. Shinn had been manager of the steel-making end of the business for the first six years. He introduced improvements, one of them saving forty thousand dollars a year to the company. Personally, he was not popular with the partners, and as the culmination of a long series of disagreements he sent in his resignation. It was accepted, and the par value of his stock was offered him. Shinn was more combative than those who had gone out of the company before him, and at once brought suit to recover the full market value of his holdings. A bitter and abusive wrangle followed. The company refused to produce its books, and consented to arbitrate. The verdict was not then made public, but it is now known that Shinn received the face value of his stock and nearly two hundred thousand dollars besides.

JOHN SCOTT, 1882—Scott, who had been let in because he was a railway director, became involved in speculation. He begged Carnegie to save him from bankruptcy by buying his stock and got its face value. In after years Scott declared that Carnegie was the best friend he ever had.

GARDINER MCCANDLESS, 1882—This young man was a son of David McCandless. He had inherited twenty thousand dollars' worth of bonds. After remaining in the firm for five years, he was persuaded that thousands in the hand were worth millions in the future, and thus he merely flits in and out of this history.

THOMAS M. CARNEGIE, 1886—The genial "Tom" Carnegie, everybody's friend, died in 1886, in his forty-fourth year. The exact amount received by his wife has never been made public, but it is generally supposed to have been ample.

DAVID A. STEWART, 1889—Mr. Stewart had entered the firm as the bosom friend of Thomas Carnegie and as the

THE ROMANCE OF STEEL

president of the Pittsburgh Locomotive Works. He was a quiet, unassuming man, who held up his share of the structure. When he died in 1889, his stock was promptly bought in from his heirs by the Carnegie Company.

JOHN W. VANDERVORT, 1897—Vandervort was a personal friend and travelling companion of Andrew Carnegie. He had a comparatively small interest, but enough to make him, at the time of his death, one of the thousand millionaires of steel.

And so Andrew Carnegie and Henry Phipps were the only two of the fourteen who survived. Phipps remained in the firm with patient pertinacity and devotion to its interests. Carnegie remained because of his aggressive ambition to dominate the international world of steel. It is incorrect to assert that the other partners were ejected. None were coerced or voted out. Even when the era of big dividends began, there were many business men in Pittsburgh who prophesied that the high-flying Carnegie and his unfortunate partners would come to grief. The iron and steel business had always been erratic—a business of princes and paupers; and the outgoing partners believed that the tide which was rushing them to prosperity would soon exhaust itself and swing backward.

THE EMPEROR OF STEEL

Andrew Carnegie, on the other hand, was not a quitter. Nothing could erase the imprint which his first sight of a Bessemer converter had made upon his mind. He bought stock steadily, in good times and in bad times. He was no hair-trigger speculator, snapped by every touch of rumour. The first of business maxims is "Buy cheap," and he never disobeyed it voluntarily. He knew how to prepare the market, how to make suggestions, how to manage men, how to give information or withhold it. When new stock

THE RISE OF ANDREW CARNEGIE

was issued he captured the lion's share of it, getting it on credit whenever possible. Personally, he was a man of the simplest tastes, having no expensive habit except that of travelling. He was unmarried. All his attention was concentrated upon the guidance of his money-making machinery.

From letters of his which have been made public it is very clear that as profits increased he was anxious that partners should decrease. His hope was to make the concern a "close corporation." A dozen partners meant a dozen shares and a dozen opinions. It meant also, in the Carnegie company, a series of disputes and several bitter quarrels. As a democracy the company was not satisfactory, to say the least. Inevitably it moved toward absolutism. The little republic evolved into an empire.

Henceforth the iron-makers and steel-makers of America were not to be a self-governing peasantry of small capitalists. The word "thousands" was erased, and "millions" was written in its place. Power slipped from the many to the few. The steel business became once more an exclusive guild, which no mere commoner could enter. A feudalism of barons divided the country into industrial provinces. And above them, on an eminence which became more and more like a throne, appeared the sturdy figure of the little Scotsman—five and a third feet high and as heavy as four feet of steel rail.

Andrew Carnegie, the Allegheny City bobbin-boy, had become the Cæsar of steel.

CHAPTER IV

THE CARNEGIE COMPANY UNDER FRICK

The Rise of Henry Clay Frick, Who Was for Years the Active Head of the Carnegie Company—His Mastery of the Coke Business and His Feats of Financiering—How He Fought the Battle of Homestead and Ushered in the Era of Machinery—The Dramatic Story of Henry W. Oliver, and an Inside View of the Workings of the Famous "Carnegie System."

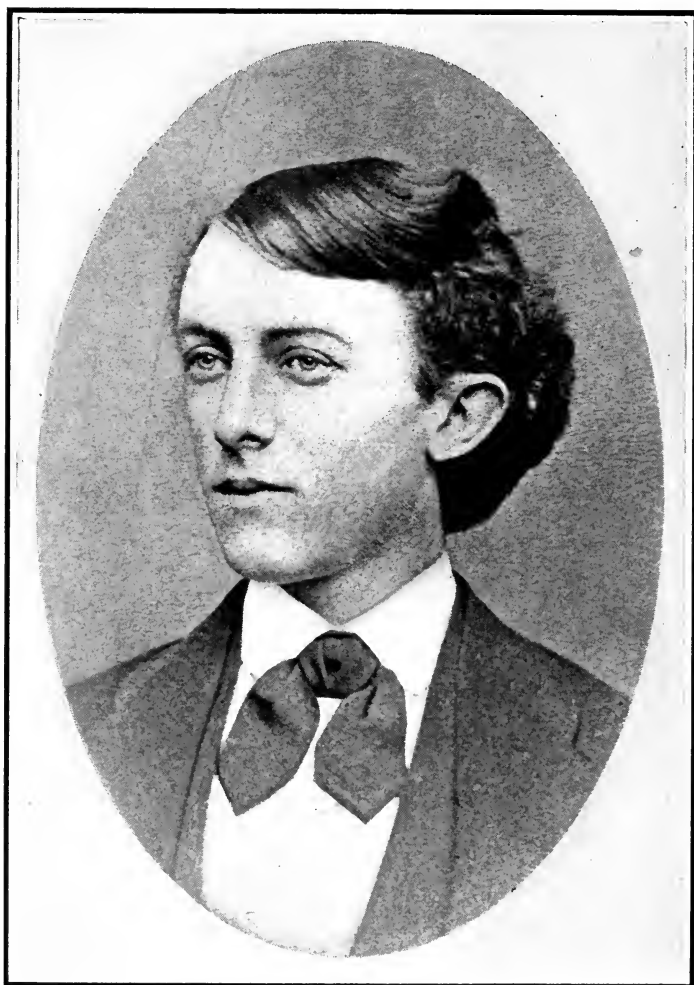
THE year before Andrew Carnegie entered the iron business, a shy fourteen-year-old boy got his first job as errand-boy in a village store at Mount Pleasant, forty miles from Pittsburgh. It was the year in which Vicksburg surrendered to General Grant, a time of tremendous excitement and anxiety. There were not as many people in Mount Pleasant as there are to-day in the Frick Building, Pittsburgh; but it seemed like a populous place to the boy who had been brought up on a lonely little farm half a mile from the nearest neighbour. His parents were quiet, plodding Swiss-Germans, who made the least possible amount of money by doing the greatest possible amount of work. In the winters he had learned to read and write at the school-house. In the summers he had carried buttermilk to the pigs and oatmeal-water to his father. He seemed in every way an ordinary, barefooted little youngster, with nothing in his favour except that he had been born in the United States.

The boy's name was Henry Clay Frick.

There is a little village called Frick in the Swiss canton of Aargau, not far from Basle; and a century and a half ago several families left the village and settled in Pennsylvania.



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA



HENRY CLAY FRICK, AS A YOUNG MAN

CARNEGIE COMPANY UNDER FRICK

Their descendants were plain, inconspicuous people. One of the boy's grandfathers made horseshoes and the other made whiskey. The boy was not fond of mischief, like Bill Jones, nor a student, like Andy Carnegie. He was serious, self-contained, and more dignified than most boys. He had few of the privileges of childhood, for the few dollars he earned were spent for his board and clothes. At eighteen he had become a man.

"Away back in 1867," said an old Pittsburgh iron-maker, "I was tramping through western Pennsylvania, looking for ore. At night I came to a small village, and at once went to the store to get some food. There was a bright young fellow behind the counter. 'I'll give you the best we have,' he said, when I asked for something to eat. He went to the rear of the store and came back with a plate of cheese and crackers. The young man's name, as I learned afterward, was Henry C. Frick."

There was a strange new trade just beginning near the village of Mount Pleasant, where the boy was working. It was called coke-making. Coal was dug up and baked in brick ovens until it turned into crisp gray lumps. Then it was used by the iron-makers when they smelted the iron ore. It was a picturesque process, with its blazing ovens and fierce-looking workmen. The boy was only earning three dollars and fifty cents a week, but in four or five years he had saved enough to buy a small piece of coal land, and his brain was full of schemes to get capital. He was determined to make coke. At nineteen his grandfather noticed what an able young man he had become and employed him as bookkeeper in a distillery. There were coke ovens near the distillery, and the boy was not satisfied until he had persuaded his grandfather and uncle to buy some of them.

Then came the panic of 1873. The price of coke dropped to ninety cents a ton—less than cost. The coke-makers lost

THE ROMANCE OF STEEL

hope and wanted to sell at any price. Half of them toppled over into bankruptcy. By this time the boy had become a full-grown man of twenty-four. At the time when every one in the district was cursing coke, he quietly made up his own mind to stake his future on it. Public opinion had no more effect upon him than the spray has upon Gibraltar. And so it happened that Mr. Mellon, a Pittsburgh banker, received a letter requesting the loan of twenty thousand dollars, signed with the unknown name of Henry C. Frick. The writer offered no security, but promised big profits if the money was invested at once.

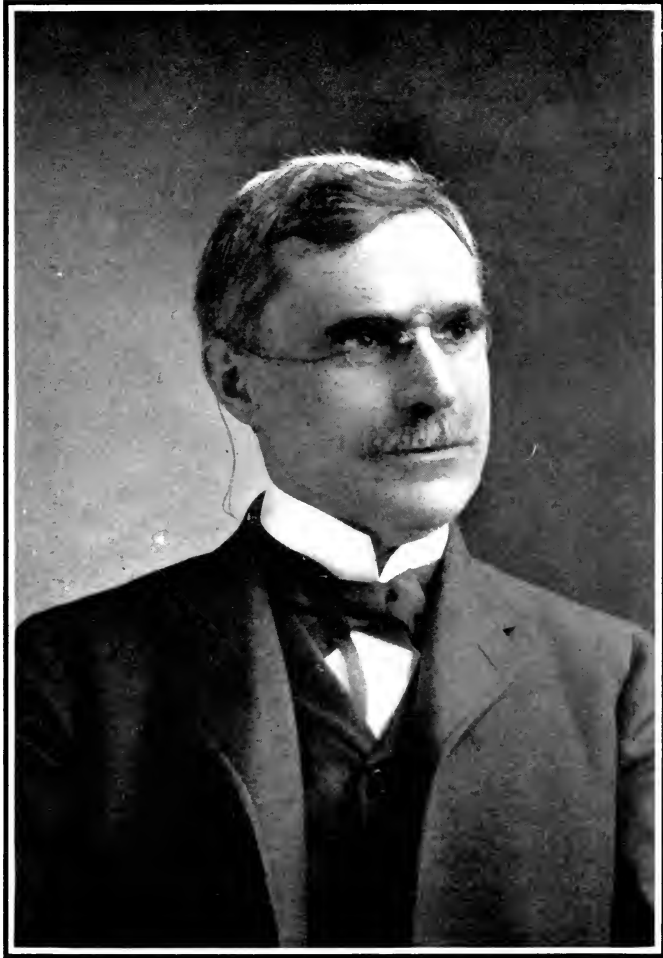
“Better investigate this man’s proposition,” said the banker.

His partner went to Mount Pleasant and inquired for H. C. Frick.

“That’s the young fellow that keeps books for his grandfather, old Oberholt,” said a villager. “He’s got a room in one of them little cottages over near the distillery.”

The banker had expected to meet a man of wealth and property. Instead he found a short, thick-set young clerk who was living in one room of a coal-miner’s home. It was nothing but a house of rough boards, with a miner and his family occupying the remaining rooms; but the young clerk’s corner was so clean, neat, and businesslike that the banker was impressed very favourably. The man who to-day occupies a Vanderbilt mansion on Fifth Avenue, New York, and owns the finest skyscraper in Pittsburgh, was at that time putting every possible cent of his nine-hundred-dollar salary into coal lands, and had nothing left for luxuries.

The banker had worked his own way up from poverty. He had been a Mississippi pilot and coal-dealer. Consequently he gave a fair hearing to the young clerk, and saw that the scheme was safe and well planned. He was also a well-known Methodist and prohibitionist, and when the shrewd



THOMAS LYNCH



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

CARNEGIE COMPANY UNDER FRICK

clerk suggested that the distillery should be shut down and its warehouse used for a Methodist church, there was no longer any hesitation about closing the deal. The twenty thousand dollars was given to young Frick, and he became at a bound the foremost coke-maker in the district.

FRICK AS THE KING OF COKE

In two years more the pendulum had swung back to prosperity. Coke leaped to three dollars a ton, then four, then five. Frick & Company made a hundred per cent. in 1875, and every dollar of profit was spent in buying more land and building more ovens. By 1889 Henry Clay Frick was the coke king, with eleven thousand workmen obeying his orders. His twenty thousand dollars of borrowed capital had grown to five millions, mostly his own. There were fifteen thousand coke ovens in the entire Connellsville region, and ten thousand of them belonged to the resolute, masterful man who had not only dared to dream of millions in a coal-miner's cottage, but had made that dream come true.

Frick brought order out of chaos in the coke business. He invited his ablest competitors—such men as E. M. Ferguson and S. L. Schoonmaker—into partnership, and forced out or bought out the others. This prevented the cutthroat competition which had kept the coke-makers poor. Next came the question of labour. Frick tried making contracts with the trade unions, and failed. Then he took a step which entirely changed the whole labour situation in western Pennsylvania—he brought in the Huns and the Slavs. For a time this meant a race war, but with the aid of Pinkertons Frick utterly destroyed the unions.

It was not so much a question of wages as of authority. Frick was not a labour crusher; but he abhorred revolt and disorder. On the whole, he has raised wages, abolished

THE ROMANCE OF STEEL

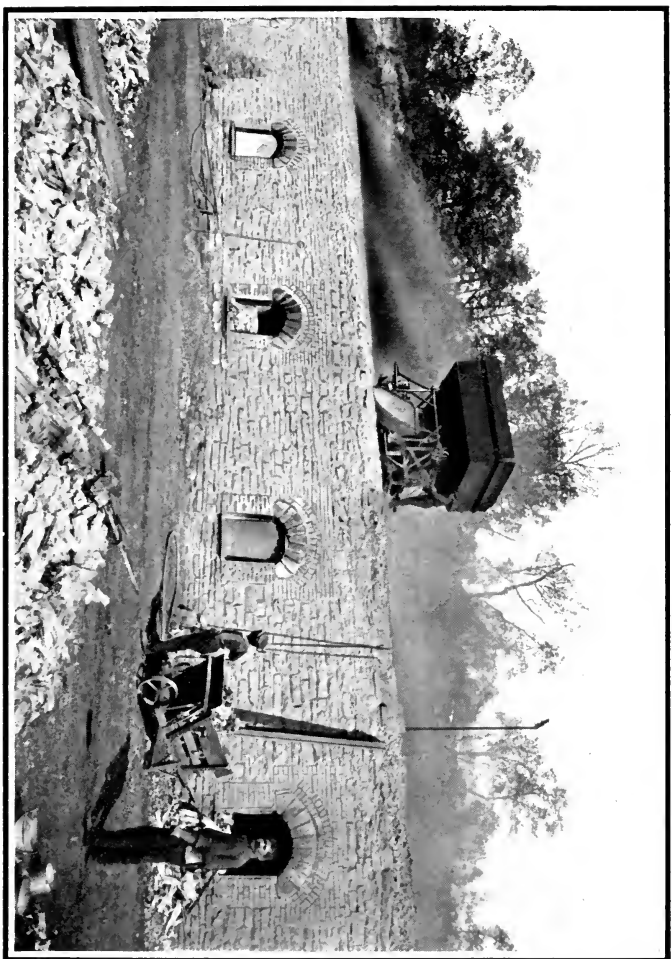
abuses, and improved the mines and villages since his word became law. His first trouble with the Huns and Slavs was, in fact, to prevent them from compelling their wives, mothers, and sisters to work at the scorching ovens. A State law had been passed forbidding female labour at the ovens, and the newcomers declared a strike when Frick enforced it.

Whatever Mr. Frick touched he improved. He found two dozen coke ovens in the Connellsville region, and left twelve thousand belonging to his own company. He found shanties and left comfortable cottages. He found a few hundred labourers, with irregular work and small pay, and left eighteen thousand workmen with steady jobs and fair wages. He found crude little plants, operating on a small scale at high cost, and left a ten-million-dollar corporation. In his childhood village of Mount Pleasant, where he worked for sixty cents a day, there stands to-day the largest coke plant in the world, operating nine hundred and eight ovens and filling one hundred and twenty-five cars every twenty-four hours.

THE REGION OF THE "H. C. F. C. CO."

This province of Connellsville, over which Mr. Frick had become the industrial governor, contains about a hundred and fifty square miles. Underneath its grassy slopes lies buried an immense field of coal, peculiarly suitable for coke-making. To most people, all coal looks alike; but to the "coal sharp," there are as many kinds of coal as there are of breakfast food. And it is generally agreed that Connellsville coal makes the highest grade coke. It has a harder fibre, carries the burden of a furnace better, and gives a hotter fire, than the coke made from other coals. At the Chicago World's Fair, Mr. Frick called attention to Connellsville by giving an eighty-thousand-dollar exhibition of its coke.

To-day the Connellsville region is from end to end the



IN THE CONNELLSVILLE REGION



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

CARNEGIE COMPANY UNDER FRICK

Land of Frick. On every hand you see the symbol of his ownership, "H. C. F. C. Co.," although his company is now only one of the counters of the Steel Trust's department store. It is a land of flame and smoke, of rusty rivers, green hills cleft by winding railroads, checkerboard villages, and sullen, swarthy Huns and Slavs. Here muscle still holds the fort against machinery. Workmen dash like salamanders from fire to fire. A stranger from Mars might easily imagine that it was a region of little walled towns, with fires built in the walls to repel invaders.

The long rows of ovens curve around each cluster of cottages, and as the men shout and shovel around the blazing ramparts, their desperate vigour is far more suggestive of war than peace. The men battle with fire and the women with smoke. Everybody works. The superintendents look forward to offices in the steel and marble Frick building, in Pittsburgh; the workmen dream of five thousand dollars apiece and little farms on the Danube. It would be impossible to live in the Connellsville region without hopes and dreams.

FRICK ENTERS THE CARNEGIE COMPANY

Until 1882 the Carnegie company owned no coke ovens. Then it bought control of the Frick company. Mr. Carnegie's keen eye took notice of the unerring judgment of Frick. Here, at last, was a real industrial general, to whom he could entrust the command of his whole army. For seven years he watched Frick, and every year his admiration increased. His growing company needed an organiser. And so, in 1889, he appointed Frick commander-in-chief of all his forces.

Without the investment of a dollar, Frick became a partner in the Carnegie company. Carnegie gave him five per cent. of the stock, for which Frick gave his notes. The stock

THE ROMANCE OF STEEL

paid for itself in a few years of big profits. Later, Frick got six per cent. more, on the same terms; but in a year of low profits he sold back five per cent. to Carnegie, who was always a buyer when the others wished to sell.

The Carnegie company moved now from the age of millions to the age of many millions. As the business grew, the number of original partners diminished. Some had died; most of the others had withdrawn willingly, leaving Andrew Carnegie, as they thought, to be the Casabianca of the Pittsburgh steel trade.

All other iron and steel magnates, with the exception of Carnegie, lived in Pittsburgh and were swayed constantly by the local gossip, by the labour troubles, and by the rumours of competition and low prices that floated from office to office. To-day they were elated; to-morrow they were depressed. To-day they bought; to-morrow they sold.

Carnegie, on the other hand, deliberately placed himself where these little ups and downs were unnoticed. As he sat on the deck of a Pacific steamer, or fished for trout in a Highland loch, the news that Coleman had quarrelled with Shinn, or that the coke-drawers wanted five cents a day more, was of small consequence. One thing he knew—that civilisation needed steel and was able to pay for it. All else was not worth troubling about. And so in good times he whipped on his workers to beat every previous record; and in bad times, when prices were low, he bought other plants or built new ones.

THE ANNEXATION OF HOMESTEAD

The way in which he came into possession of the great Homestead works is a striking illustration of what his competitors called "Carnegie luck." In 1880 seven of these competitors, all able and wealthy men, raised a quarter of a

CARNEGIE COMPANY UNDER FRICK

million and built a steel-mill to get some of the Carnegie company's business. Up to this time Carnegie had been the only maker of steel rails in the Pittsburgh district; but this new plant promised to produce three hundred thousand tons a year. For a while it looked as if the profits would be cut in two; and if the Homestead mill had been ably managed, the history of steel might have had a different set of heroes.

The new plant was running full blast fifteen months after the first spade had been put into the ground—a record-breaking achievement. It began with a blare of trumpets. Two hundred tons of rails a day were squeezed into shape between its whirling rollers. Its equipment was the best that money and brains could make. Advance orders had been booked. Apparently, the new firm had a mortgage on prosperity, when suddenly the whole enterprise was paralysed by a series of labour troubles. The Amalgamated Association of Iron and Steel Workers rose up and dealt the company blow after blow.

The association was not then the fragment that it is to-day. It numbered seventy thousand members. There was scarcely a non-union steel worker in the United States. It was six years old, and flushed with a dozen small victories.

For several months there were lockouts, strikes, riots, and quarrels among the partners. The price of steel began to fall. Trade grew worse daily. More capital was demanded of the stockholders. It was only an eclipse of the sun at noon, but the owners of the new concern believed that night had come. They decided to sell out to Carnegie, but they were afraid that he would get the best of the deal, and held several meetings to rehearse what they would say to him. Then they called him in. It was one of the dramatic moments of the story of steel.

"Gentlemen," said Carnegie, "I am willing to do what you say—and more. I will allow you every dollar that Home-

THE ROMANCE OF STEEL

stead has cost you, and I will invite you all into our company as partners."

The partners were speechless. They were loaded to the muzzle against Carnegie, but this square deal disarmed them. They moved to adjourn. Next morning one of them, W. H. Singer, entered Carnegie's office and said:

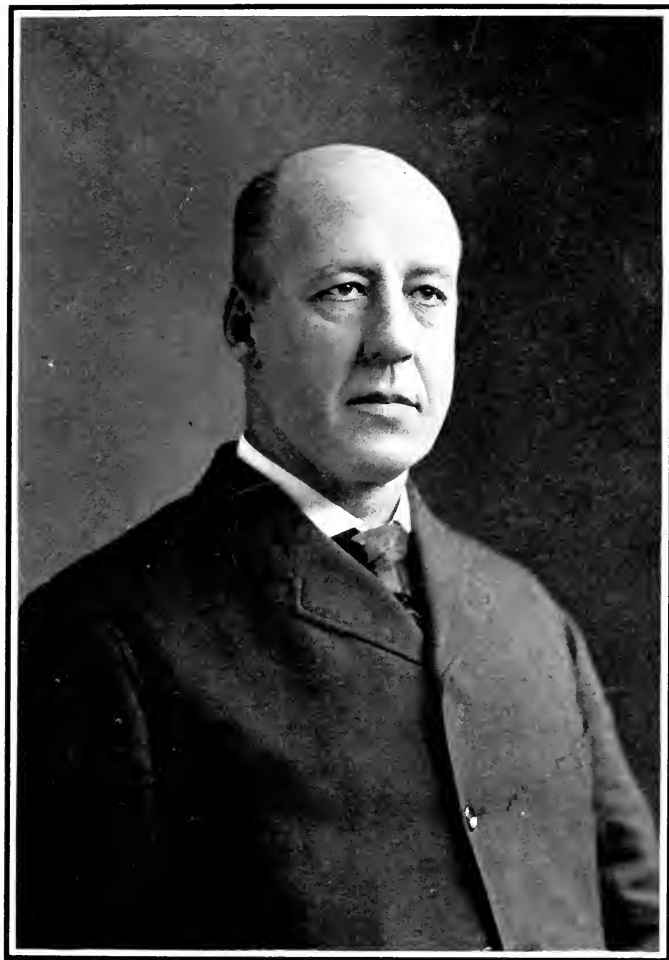
"Were you in earnest yesterday? Would you really take me for a partner?"

"Of course I would," replied Carnegie. "Shake, pard."

Singer remained a partner of Carnegie to the end, and saw the fifty thousand dollars which he had invested swell into many millions. As for his associates, they were afraid of Carnegie and disgusted with steel. They took their pay in notes, and handed Homestead to Carnegie with the feeling of complacency which a man possesses after having traded a balky horse for a corner lot.

In a short time the labour troubles were smoothed out. Prices rose. Business revived. And in two years the Homestead plant had paid for itself. Practically, the Carnegie company got it for nothing—nothing but pluck and enterprise and faith in the future of steel.

To the further amazement of Pittsburgh, as soon as the company had bought this "gold brick" Homestead plant, hundreds of thousands were spent in improving it. Julian Kennedy was put in charge—a man who, as an all-around steel engineer, has probably never had a superior in any country. Kennedy had equalled even Captain Jones as a steel-maker, and now he set to work to make a steel-mill which was then, and is to-day, the wonder of the engineering world. Instead of making steel ingots and bars, which had to be sold as mere raw material, the Homestead works began to produce beams, girders, and all manner of structural shapes. At that time there was no strong demand for such things, and Pittsburgh once more prophesied failure for Carnegie and Phipps.



JULIAN KENNEDY



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

CARNEGIE COMPANY UNDER FRICK

As if the very stars in their courses were silent partners of the two comrades who had battled up to greatness from Barefoot Square, the skyscraper age began in the same year that this Homestead mill was finished. The Rookery, in Chicago—first of all the giant steel buildings which give distinctiveness to American cities—was built in 1887, and others followed in quick succession. At the same time came a boom in the building of steel bridges. The Pittsburgh croakers gasped to see the Homestead “failure” running night and day to catch up with its orders. Carnegie had foreseen the coming of a steel-ribbed civilisation, and his company was now the owner of the best steel-works in existence.

Years afterwards, Mr. Carnegie was sitting in the home of his friend, James G. Blaine. Pointing to the ceiling, he said: “There is a steel beam there that was made in our Homestead mill. The mill cost us a million to build, but we made a clear million in profits before any one else had time to build one like it. We started ahead of them all, and so we were able to hold the cream of the business.”

THE CONQUEST OF DUQUESNE

Take one more illustration of the “Carnegie luck” and the Frick financiering—the acquisition of the magnificent steel-works at Duquesne without the outlay of a single dollar. Nothing that equals this financial legerdemain has ever been known before or since in the iron and steel trade. Among all the industrial battles fought and won by Carnegie and his captains, the victory of Duquesne will always stand out as the most complete and decisive.

Three years after the capture of Homestead by the Carnegie group, three or four of the seven defeated competitors took their purchase money, added twice as much to it, and began to build a second steel-mill. They had realised their

THE ROMANCE OF STEEL

mistake in parting with the Homestead works, and they were determined to "beat Carnegie this time." They bought a tract of land on the Monongahela River, a few miles above Homestead, and in three years had a plant which was a marvel for handiness and speed. It was practically a "continuous" mill—one in which the steel ingots did not require to be reheated, but were sent continuously through the whole process of rail-making. Dozens of new labour-saving devices were introduced. The partners had lost Homestead because of labour troubles, and in the Duquesne works they had as few workmen as possible. In fact, so successful were they in replacing men by machinery that the labour cost of their steel was cut exactly in half.

The Carnegie company at once showed fight. The Duquesne company was kept out of the rail pool. It found itself forced out—ostracised—boycotted. It was compelled to pick up the crumbs from the table at which its competitors were dining. Necessity compelled it to accept undesirable contracts. The steel went out, but the money did not come in.

Then the Duquesne manager repeated the mistake of Homestead, and picked a quarrel with the Amalgamated Association. Offensive signs were nailed up at the gates, announcing that "No Union Men Are Allowed on These Works." All these difficulties set the partners wrangling, as they had before; and at the psychological moment Frick made an offer of six hundred thousand dollars for the plant. This was about half what it had cost, and the suggestion did not help to put the partners in a more optimistic mood. A year later he raised the price to a million dollars, payable in bonds, not cash.

To conclude the bargain, William Park went with Frick to Carnegie's house. Frick was inclined to beat Park's price down still lower; but as the three men were walking down-

CARNEGIE COMPANY UNDER FRICK

stairs to luncheon, Carnegie whispered to Frick—"We get the turkey; don't grudge Park a few feathers." Frick yielded his point, and the deal was made. Park got the feathers.

The Carnegie company took possession, speeded up the steel-mill to a Captain Jones gait, and in less than one year cleared a million dollars' profit. Carnegie had captured the Port Arthur of his competitors, and it had not cost him a drop of blood nor an ounce of powder. In twelve months there was not a nickel less in the Carnegie treasury, and he was the master of a steel city which to-day makes more than three per cent. of all the steel in the world. By the time the bonds came due, the Duquesne plant had paid for itself six times over. And so, in 1890, Carnegie, Phipps, and Frick secured another province in the steel world for nothing—nothing except the skilful use of those business methods which our generals of industry have either practised or permitted.

A MARVELLOUS INDUSTRIAL MECHANISM

Thomas Morrison, a distant relation of Andrew Carnegie, was put in charge of Duquesne. He was young and inexperienced; but the responsibility ripened him at once into an able manager. He made peace with the workmen and started the immense plant on its record-breaking career. For four years the Duquesne furnaces held the world's record. In one month they made more iron than all the furnaces in the United States had produced during President Monroe's first term of office. An output of twenty-six hundred and fifty tons of iron a day from four furnaces was an achievement that would have seemed absolutely incredible not long before.

Money was lavished on Duquesne to make it as nearly as possible automatic. It is said that an inventive friend of Charles M. Schwab approached him one day and said:

THE ROMANCE OF STEEL

"Will you back me in selling a non-nicotine, continuous tobacco pipe?"

"No," replied Schwab, "but I'll back you if you'll invent a continuous steel-mill."

This incident implanted the project of a wholly continuous steel-mill in the mind of Mr. Schwab. He proposed it to Mr. Carnegie, who said:

"Good! Go ahead and build one."

The final result is a mill which is so well arranged as to be practically one great machine. At one end stand the furnaces and ore piles; at the other the steel bars drop into the cooling-pit at the rate of one a second, and the loaded freight-cars twist noisily out of the yard.

By 1892 the Carnegie Steel Company Limited had grown into a twenty-five million dollar concern, and under the leadership of Frick it was becoming a complete industrial unit. The scattered works were unified by the building of the Union Railway. The different railroads had been making trouble about their "rights" inside the yards of the steel-plants. Frick settled the dispute by putting all the railroads outside the fence, and constructing a company road. This improvement at once saved enough in switching-charges alone to pay interest on the cost of the whole railroad. The ejected railroads, to prove that they cherished no resentment, granted a rebate of twenty-five cents a ton on ore. Which of them could dare to quarrel with a company that handled sixteen million tons of freight a year? Thus the Union Railroad, like the Homestead and Duquesne steel-works, was made to pay for itself in a few months.

The fourth step in the development of this corporate socialism was the acquiring of ore mines, in the Lake Superior region. This, too, was managed so that the property did not cost the company a dollar. It was also a miracle of "high finance," but one in which no competitor was disabled.

CARNEGIE COMPANY UNDER FRICK

OLIVER AND THE ORE FIELDS

Among the boyhood companions of Andrew Carnegie in Allegheny there had been a boy called Harry Oliver. He had grown up to be a shrewd business man—one who made fortunes cheerfully and lost them cheerfully. He was a steel-maker, but had never been in any Carnegie enterprise. Harry and Andy had been messenger-boys together. Soon after Lon Merritt had opened up the Mesaba Range in 1892, Oliver saw its value, and bought a large tract of land there. About the time his mines were beginning to ship ore, he met Frick one morning in Pittsburgh.

“Why cannot we go in with you in this Mesaba ore business?” asked Frick.

“On what terms?” replied Oliver.

“Well,” said Frick, “give us five-sixths of your ore stock and we’ll lend you half a million dollars to develop the mines.”

“Agreed,” said Oliver, and so a property which is to-day worth tens of millions was obtained as a gift from Oliver, who did his best day’s work when he made an alliance with the powerful Carnegie group.

Four years later, Frick and Oliver joined forces with John D. Rockefeller in the Lake Superior ore business. This combination created a panic among the other mine-owners. Ore dropped from six dollars a ton to less than three. Dozens of mines, worth millions, were tossed on the bargain counter and sold to Frick and Oliver for thousands. Rockefeller showed no desire to buy mines, but merely stipulated that his railroads and steamships should have the carrying of the ore to the Lake Erie ports. He went further, and leased the mines which he had already acquired to Frick and Oliver for a royalty of twenty-five cents a ton. This was forty cents below the usual price, and meant more millions to the Carnegie-Phipps-Frick combination.

THE ROMANCE OF STEEL

For a year or more Oliver worked like a beaver, buying in mines from the demoralised owners. When the panic was over, the Carnegie company figured up its winnings, and found that it was the possessor of a hundred million tons of ore, which Charles M. Schwab has since valued at a dollar a ton. It had bought in a hundred million dollars' worth of raw material for the price of a few farms.

OLIVER'S PICTURESQUE CAREER

Henry W. Oliver was one of the most picturesque knights errant of Pittsburgh. His life was a series of magnificent climaxes, of startling successes and crashing failures. He packed the experiences of half a dozen lifetimes into one. As a business man he was a marvel of force and elasticity. The harder he was thrown down, the higher he would rebound. His optimism was at all times invulnerable. In his power of recuperation he had no equal in his generation. His parents were poor Irish people, who emigrated from County Tyrone when he was a small boy. His first job was as messenger in a Pittsburgh telegraph-office. When the first shot of the Civil War was fired, he sprang to the defence of the Union, and continued to be a prominent Republican until his death.

His first rise and fall was in the nut and bolt business. In this enterprise his employees at one time saved him from failure by working for two weeks without wages. For years he plunged from one scheme to another, incidentally founding the pressed steel car industry. In 1892 he was elected a delegate to the national Republican convention at Minneapolis. While there, he heard for the first time of the discovery of the Mesaba Range, and hurried up to Duluth. He found the town crowded with prospectors. Every hotel was full, and he was obliged to sleep on a billiard-table.

The next morning he bought a horse and rode through the

CARNEGIE COMPANY UNDER FRICK

wilderness to the new ore mines. It was a rough ride for a man unused to the woods. At nights he lay on the ground and listened to the howling of the timber-wolves. When he reached the camp of the Merritt brothers, they showed him iron mines out of which the ore could be dug like sand. Here were scores, perhaps hundreds, of millions of tons, and no one in Pittsburgh had as yet bought a pound of it. Oliver leased a large mine from the Merritts, and on his return to Pittsburgh Frick became his partner. Nine years afterward that ride through the wilderness netted him thirteen million dollars. It made him, in the Carnegie company, the man behind the ore.

As Carnegie said to me, "Harry Oliver was a man who saw far ahead. He could not carry all the game he had captured, and appealed to the Carnegie company to join him. It did, and carried the treasure safely through with its money and credit."

"The Oliver luck," is a Pittsburgh phrase. Strictly speaking, it meant a compound of one part chance and two parts energy—the "luck" of a man who falls out of a three-story window and invents a flying-machine. His creditors were always the first to lend him more money when he was in difficulties. When he bought his first Mesaba mine, he gave a check for the price—five thousand dollars—although he had not a cent on deposit at the time. He telegraphed to the bank to cash the check, and had no trouble in carrying the deal through. The insignificant fact that he had no money available never blocked the plans of Harry Oliver.

He was never the servant of other people's opinions. On one occasion he sent an agent to report on a piece of mining land. The agent wrote back a long report, unfavourable in every particular.

"I think he's mistaken," said Oliver. "I'll take it."

In a short time the land proved to be worth double what he

THE ROMANCE OF STEEL

had paid for it. No one bore the risks of commerce more easily than Oliver. When his partners grumbled at the large amount of money that he was spending on a new mine, he replied cheerily:

“Well, if it does fail, we’ll have the finest mining-shaft in the world!”

After Rockefeller had squeezed out the Merritt brothers, he became Oliver’s landlord, and during 1894 Oliver was forty thousand dollars behind in his payments. The Rockefeller agents demanded an immediate settlement. Oliver hurried to New York, but was not allowed to see Rockefeller.

“I trust you will remember that this is not a charitable institution, Mr. Oliver,” said one of the junior partners.

As Oliver walked out of the office, he met a negro porter in the hall. Slipping a twenty-dollar bill into the porter’s hand, he said:

“See here, George, is Mr. John D. Rockefeller in that inside room?”

“Yes, sir.”

“Well,” said Oliver, “when these other men go to lunch, you might accidentally leave his door unlocked, that’s all.”

Oliver waited in the hall until he saw the junior partners vanish down the elevator; then he slipped into the inside room and found his dreaded creditor fast asleep, with a handkerchief over his face. In about ten minutes Rockefeller awoke, and Oliver told his story. It impressed Rockefeller favourably, and in a few minutes more he wrote a short note, affixed his magic signature, and Oliver was saved.

BRINGING THE ORE TO PITTSBURGH

The Carnegie company had now ore enough to last for generations; but it was a thousand miles from Pittsburgh, over land and lake. The next problem to solve was that of cheap

CARNEGIE COMPANY UNDER FRICK

transportation. There was a rickety, penniless little railway which owned a "right of way and two streaks of rust" from Pittsburgh to Lake Erie. It had terminal facilities at Conneaut, and there was no reason why it should not have done business. But it had been a failure from the first, staggering from one misfortune to another. Andrew Carnegie went to its president and said:

"Your railroad is on the verge of bankruptcy. Let me reorganise it. I will extend it to our steel-works and make it one of the best roads in the world. I will pay you in bonds, which our enormous traffic will make gilt-edged."

The president consented, glad to escape from his financial difficulties so happily.

In fifteen months the two hundred and twelve miles of this road were entirely rebuilt. They were laid with heavy steel rails, and strong steel bridges replaced the ramshackle wooden trestles. The most powerful locomotives ever built, up to that time, were put on the line. To-day the Bessemer & Lake Erie, as it is called, has a hundred locomotives and ten thousand cars. Its cost of carrying freight is less than that of any other American railroad; and it was acquired without the withdrawal of one dollar in cash from the Carnegie treasury. Carnegie himself deserves all the credit for this purchase, as all his partners disapproved of it.

Until 1899 the Rockefeller ore fleet carried all the Carnegie ore. Then a small fleet of six vessels was bought—by means of an issue of bonds, as usual. This fleet has grown yearly until to-day it has one hundred and sixteen vessels carrying more than ten million tons of ore in a season, and earning a gross income of nearly ten million dollars. This was the last link in the chain. The Carnegie company had wiped out all the middlemen, and now owned all its means of production and distribution. It pocketed all the profits, from the ore in the ground to the finished rail and girder. As an elaborate in-

THE ROMANCE OF STEEL

dustrial machine for making and marketing steel, it had no equal either in Europe or the United States. And at the top of this mammoth structure of commercial feudalism stood three men who had been moneyless clerks less than two-score years before. In the short span of a single lifetime they had made themselves the masters of a wealth so great that it surpassed all the hereditary fortunes swollen by centuries of privilege.

THE DANGERS OF THE STEEL INDUSTRY

It must not be inferred from this romance of easily won wealth that every steel-works is a gold mine. Far from it. Few industries, if any, have been as hazardous, as variable, as full of whims and sudden changes. Mr. Carnegie loves to quote the lines of "Hudibras":

Ah, me! What perils do environ
The man who meddles with cold iron!

A steel-mill requires more varieties of skill than almost any other industry. The work is complex at every step, and one mistake may mean wreckage. The first owners of the Homestead plant failed because they lacked one species of skill only—the skill to manage the workmen. The first owners of Duquesne had an almost perfect plant, but failed to make profitable sales. In the eighties, when the Carnegie company was making forty per cent., a body of English capitalists spent a million dollars on the Victoria furnace at Goshen, Virginia, and failed completely through bad management. The same furnace is running full blast to-day, pouring out fifty thousand tons a year.

Even the largest steel corporations have had their serious troubles. The Cambria plant was twice in difficulties, and once sold by the sheriff. The Joliet works was sold at auction.

CARNEGIE COMPANY UNDER FRICK

The Bethlehem company was twice compelled to mortgage its plant. The Chicago steel-works was mortgaged and its shares sold at fifty cents on the dollar. The Troy Iron & Steel Company was reorganised several times. The Superior Iron Company's shares dropped to less than sixteen. On several occasions the Carnegie company had to squeeze through such narrow channels that some of the frightened partners leaped overboard. Many a time Carnegie had to call a halt in some department that was losing money. In 1887, for instance, there was a loss of a hundred and fifty thousand dollars on one order for armour-plate. Four-fifths of the plates had been rejected.

"Take no more orders," telegraphed Carnegie.

Soon afterward his partners took an order at an advance of twenty-two dollars a ton and made large profits.

In his earlier days Mr. Carnegie appeared to have no clearly defined policy; but he learned by mistakes, and never made the same mistake twice. On one occasion he and Pullman, of Chicago, were talking over their early days.

"Andrew," said Pullman, "the fellows that knew us in those days said we were making mistakes."

"So we were," responded Carnegie, "but the percentage was on our side."

Carnegie was always teachable, and large enough to associate himself with men who had the qualities which he lacked. To paraphrase Marcus Aurelius, he might well declare:

"To my brother Thomas I owe my appreciation of the value large and venturesome business operations.

"To my brother Thomas I owe my appreciation of the value of friendship in business affairs.

"From John Vandervort I learned to value travel and play.

"From Andrew Kloman I learned the profitableness of iron.

THE ROMANCE OF STEEL

“From Henry Phipps I learned the necessity of patiently mastering details.

“From Captain W. R. Jones I learned to appreciate intelligent and free-spirited workmen and superintendents.”

And so on. If this list of instructors were made complete, it would fill several pages. With the exception of Frick, Carnegie's later associates were mainly energetic young men who were content to be part of the Carnegie machine. When compelled to choose between ability and faithfulness, he has invariably chosen the latter. His motto has generally been, “Better have an obedient young mediocrity than a mature genius who is self-willed and disloyal.” But in most cases he gave a free hand to every man who produced results.

THE CARNEGIE SYSTEM

Little by little what we may call the Carnegie system was developed. Roughly speaking, Mr. Carnegie was the first steel-maker who introduced department-store principles into the iron and steel business. His corporation was a large establishment run by a few highly skilled superintendents, and by a crowd of young clerks who were taught to do one thing fairly well. Partnerships were dangled before the eyes of these young clerks until they were fevered with ambition. It was a system of make or break. Every young officer who served under General Carnegie was either a millionaire or a physical wreck in a few years. “No system has ever made so many men wealthy in so short a time,” says Jeans, the steel historian of England.

Carnegie made every moment of the working day important. Every job was a race. In the selling of his steel he hamstrung competition by a high tariff and a rail pool; but in the making of the steel he stimulated competition almost to the point of ferocity. Every superintendent was pitted against every other. The heaven of a partnership and the hell of dismissal goaded

CARNEGIE COMPANY UNDER FRICK

the bosses and sub-bosses into a furious activity that put the Carnegie company far in advance of all its competitors. No matter how much the sweltering furnacemen toiled, no matter how amazing was the achievement of to-day, to-morrow the same order come from the terrible general—"More!"

But it was a Napoleonic republic, this Carnegie corporation. Every private soldier felt that he carried the baton of a marshal in his knapsack, and the soldiers enjoyed the race as much as their general did. Never before, in so prosperous a business, were there so few stupid relatives and favourites in places of authority. Out of thirty-three superintendents, only three were school-trained. The others had risen from the ranks. Not one had invested a dollar, yet all held stock. They were the "fittest" who survived. There were no figurehead directors. Every man had his work, and he held his place just as long as he could do the work better than any one else. The moment a man showed signs of weakness or inefficiency, he was immediately transferred, or pigeonholed into some political office. There was a scrap-heap for men as well as for machinery.

"Take away all our factories," said Carnegie in an eloquent moment, "take away all our trade, our avenues of transportation, our money. Leave us nothing but our organisation, and in four years we shall have re-established ourselves."

He imprinted this idea indelibly upon the mind of an English editor on one occasion. The editor had asked him to write an article on "Organisation in Business."

"Yes," replied Carnegie, "I can write you an article on that subject, but my price may be too high for you."

"Oh, that will be all right," said the delighted editor. "Name your own price, Mr. Carnegie."

"Well, I couldn't let you have it at less than the knowledge has cost me, could I?" responded the steel king. "Suppose we say five million dollars, which will be very much less than cost!"

THE ROMANCE OF STEEL

CARNEGIE AS A BUSINESS MAN

Andrew Carnegie was never a speculator, seldom a pioneer. He had millions for improvement, but not a cent for a gamble. He never bought or sold a share of stock through a stock exchange. The moment Wall Street stepped in he stepped out.

“Speculation is the counterfeit of business,” he says. “It is a parasite which feeds upon values, and creates none.”

Much of his commercial daring was more apparent than real. Generally, he waited until a new invention had been thoroughly tested by other men; then, if it was satisfactory, he rushed in with a vigour and vim that caused the outside world to regard him as the original pioneer. This occurred in the making of iron bridges, Bessemer steel, open-hearth steel, structural iron, and in the owning of Lake Superior ore lands. Others did the exploring and cut the first paths; then Carnegie transformed the rough paths into wide, smooth roads.

No business man ever scattered his interests so widely at first, nor concentrated them so completely as soon as he had established himself, as Andrew Carnegie. After 1873 there was nothing in the world for him but steel. Almost every rich American who has made his fortune in industry has shifted his capital into railroad, bank, or real estate investments, for the sake of security and social standing. To this rule Mr. Carnegie is the most notable exception. He became, and he remains, the greatest of all steel capitalists.

Year after year the bulk of his profits went back into the business. No alluring scheme could side-track him. No persuasive company-promoter could make the slightest impression upon his armour-plated indifference. And he inspired the same spirit of concentration in his partners.

“I would no more have thought of buying stocks than of flying,” said Clemson, one of the young partners. “If any one of us had dickered with stocks, I’m sure Carnegie would have discharged him.”

CARNEGIE COMPANY UNDER FRICK

Carnegie never impoverished his business by squeezing out of it the highest possible dividends. Not one of his steel-mills was allowed to go begging.

Carnegie's unwavering policy was to fertilise the soil from which his millions grew. He pushed past failures with the brute force of capital. In dull times he spent the money he had made in good times, repairing, improving, and enlarging his works. During the stagnant year of 1876 he ordered a new big furnace built at the Edgar Thomson works, to the surprise of Pittsburghers.

"Carnegie must have faith in the future," wrote a puzzled editor.

At every yearly meeting of the partners, Mr. Carnegie asked the question:

"Well, what shall we throw away this year?"

He was the first steel-maker to throw good machinery on the scrap-heap merely because it was a little out of date.

"If I could reduce the cost of rails ten cents a ton, I'd spend a million dollars gladly," he said to his friend Miller.

At one Saturday noon meeting of the Carnegie directors on January 7, 1899, in less than thirty minutes the immense sum of two million five hundred and thirty-three thousand dollars was voted to be spent on improvements. In two years twenty millions were expended.

"I gave Thomas a quarter of a million for his patents, and as there was some little indefiniteness about one point in the contract, I gave him fifty thousand more," said Carnegie airily to the writer. Thomas and Gilchrist, two young English chemists, were the inventors of the "basic process," by means of which steel could be made from ores that were high in phosphorus. "Those two young men did more for England's greatness than all her kings and queens put together," said he. "Moses struck the rock and brought forth water, but they struck the useless phosphorus ore and transformed it into steel—a greater miracle."

THE ROMANCE OF STEEL

When the pioneers had demonstrated the value of chemistry to the iron and steel industry, Carnegie brought Dr. Fricke from Germany to be the company's chemist. The other steel men said, "We cannot afford to pay salaries to German scientists." But Carnegie replied, "We cannot afford to be without them."

Before the first year was out, Dr. Fricke had earned his salary over and over again, by enabling the company to use ores that were considered by steel men to be unavailable.

PROFITABLE PUBLICITY

And while his partners and forty-five thousand swarthy workmen laboured on under the blackened skies of Pennsylvania, Carnegie himself was waging a politico-social campaign in all parts of the world. He became the personal friend of every political leader of national prominence. He was always ready to subscribe to a worthy campaign fund.

Congressmen were invited to select theatre parties, or to dinners at which they met literary and philosophical celebrities. Titled Europeans were taken to see the wonders of Homestead or Duquesne. Speeches were made and books were written.

All this was publicity. It was the most effective sort of advertising. It was an essential part of the Carnegie system. There was nothing sordid about it. The simple fact was shown that a man of many friends and many interests is more likely to succeed in business than a man of few friends and few interests. More things than kissing go by favour, and on several occasions the friendly offices of the government enabled the Carnegie company to collect debts or secure orders.

Every sales agent imitated his chief on a smaller scale. He was ordered to join the most fashionable clubs, to subscribe generously to all popular causes, and to keep himself favour-



HENRY W. OLIVER



CARNEGIE COMPANY UNDER FRICK

ably in the public eye. "Big contracts are always more likely to be made over nuts and wine than across a desk," said Mr. Carnegie. When Millard Hunsiker was sent to get orders from Japan, for instance, he went in a blaze of military glory and social prestige. Hunsiker was a tall, well-built man, the Beau Brummel of the Carnegie company. A few months before sailing he secured an appointment as colonel on the Governor of Pennsylvania's staff. This gave him a right to a title and to a uniform, both of which proved astonishingly effective in smoothing his path in Tokio and Yokohama. The Asiatic mind was doubly impressed by his prices and his full regimentals, and he was soon cabling back to Pittsburgh the most satisfactory orders for steel rails and armour-plate. To-day Colonel Hunsiker is in charge of the London office of the United States Steel Corporation, and deserves a large share of credit for its exports of more than a million tons a year.

LARGE SCHEMES AND SMALL DETAILS

The daily report from every department was a strong feature of the Carnegie system. It made the yesterdays into a whip of many lashes to urge to-day on to still greater speed. It transformed the iron and steel business from a monthly to a daily affair. Instead of being an absentee employer, Carnegie became practically ubiquitous by means of these reports.

"We always felt as if he were right behind us," said one of his younger partners.

Without the use of any spy system, he often surprised his superintendents by knowing more about their department than they did. On one occasion the superintendent at Homestead made a mistake in calculating the cost of some improvements. The work when done cost a hundred thousand dollars more than his estimate. Thinking that this might escape Carnegie's notice he avoided any mention of it at the next stockholders'

THE ROMANCE OF STEEL

meeting. The meeting concluded and Carnegie showed no sign that he was aware of the superintendent's blunder, not wishing to humiliate him in the presence of the others. But as the superintendent was about to leave the room, Carnegie took him by the arm and said quietly:

"By the way, Charlie, what about that extra expense in your mill?"

Standard system
Everything on a large scale—quantity, quantity, quantity—this was the keynote of the system. Customers looking for small lots might go elsewhere and welcome. So might those who wanted steel of unusual shape or quality. The Carnegie company waged a stubborn battle with the architects of bridges and skyscrapers, to compel them to standardise their material. According to the British and German custom, every architect at first designed all manner of unique and artistic structures, which the steel-makers were supposed to reproduce. In the early eighties architects knew little or nothing of steel, or of the limitations of a rolling-mill. Moreover, the idea of buying bridges by the yard and buildings by the story threatened both the prestige and profit of their profession. So they fought the Carnegie plan of making structural steel into standard sizes, and lost, as every profession must that puts its own convenience against the onward march of the world. To-day, if a builder orders a special size, the steel company will say:

"We don't make that size, but if you'll pay three thousand dollars for a new set of rolls, and give us a big order, we'll make 'em for you. Otherwise, we shall have to ask you to select from our catalogue."

With all his caution in new departures, it may fairly be said that Andrew Carnegie was as a rule about ten years ahead of Pittsburgh. The average citizen regarded him as a reckless plunger. Most Pittsburgh steel-makers in their hearts considered him an impertinent outsider, who had blundered into their world by accident, and who would soon find his level

CARNEGIE COMPANY UNDER FRICK

again in a railroad clerkship. Even now his success is looked upon by many as having been an industrial miracle, a phenomenon which can never occur again.

The older men remember when he was the biggest borrower in Pennsylvania. He bought everything he needed, even when he had to borrow the money to do it. Again and again, when his fellow steel-makers were scrambling to get out of their hazardous business into something "safe," such as real estate, or banking, or railroads, Carnegie deliberately staked his whole winnings upon the future of steel. He never bought a foot of land nor a share of stock except in the building up of his own business.

Pittsburgh has moved ahead, but it is always the same distance behind Carnegie. In 1898, at a Chamber of Commerce banquet there, the steel king said:

"If I were Czar of Pittsburgh I would buy a large tract of coal land as near by as possible, and give the city a municipal gas plant."

That was eight years ago, yet the leading citizens and Chamber of Commerce officials still refer with amused unbelief to "Mr. Carnegie's Utopian plan," and all the while they are paying a double price for illuminating gas to a private company.

HAND LABOUR AND MACHINERY

The year 1892 marked a turning-point, both in the history of the Carnegie company and the iron and steel world. The long war between labour and machinery ended in a complete victory for machinery. Since 1892 labour has been a passive factor in the steel business, without a will or a voice with regard to the sale of itself. The era of machinery, which had begun about 1870 with the Bessemer converter and the improved rolling mill, became supreme with the failure of the

THE ROMANCE OF STEEL

Homestead strike. In the long history of labour wars there was never one as bitter as this, nor one in which the real issue was so completely overlooked by the general public.

The Homestead strike was not a matter of wages, or hours, or conditions of employment. It was not a duel between Frick and the Amalgamated Association of Iron and Steel Workers. It was not a struggle between individuals or organisations. It was much more. It was a conflict between the old way and the new way—between the production by muscle and sweat and production by automatic machinery.

Before the decisive battle of Homestead the workmen had names; after it they had numbers. Especially in the earlier days of the puddlers, when iron was refined by strong arms and skilful hands, the labour union was a power. Its officials went to Congress on tariff-raising expeditions in the same Pullman car with the steel barons. They had to be consulted with regard to improvements, as well as with regard to matters of hours and wages. In the steel-mill the chief roller, invariably a man of force and skill, was the king-pin of the whole plant. He stood practically above both employers and workmen.

But after the Waterloo of Homestead the union official became as extinct as the dodo, and the "high roller" was brought low. Henceforth the iron-worker of the stage, brawny, deep-chested, and defiant, became an almost unknown type. In his place stood a narrow-chested, pale-faced young man, or a stolid Slav, pushing buttons or pulling levers.

Captain Jones—who, strangely enough, was more responsible for the dawn of the era of machinery than any other one man—came into close personal touch with his workmen, and tolerated the unions.

"I have always found it best to treat men well," he said. "They should be made to feel that the company is interested in their welfare. Make the works a pleasant place for them.

CARNEGIE COMPANY UNDER FRICK

All haughty and disdainful treatment of men has a decidedly bad effect on them."

In his day the question of labour was of first importance. Success or failure depended upon whether the workmen were willing or unruly. Captain Jones went so far as to draw up a labour formula, which he gave to the Carnegie company.

"We must steer clear of the West," he said, "where men are accustomed to infernally high wages. We must steer clear, as far as we can, of Englishmen, who are great sticklers for high wages, small production, and strikes. My experience has shown that Germans, Irish, Swedes, and what I denominate Buckwheats—young American country boys—judiciously mixed, make the most effective and tractable force you can find. Scotchmen do very well, are honest and faithful. Welsh can be used in limited numbers. But mark me, Englishmen have been the worst class of men I have had anything to do with."

To an old-timer like David Thomas, an iron-works was a school as well as a money-making enterprise. Men, as well as iron, were to be refined. It was even more important to get a high grade of men than to dig a high grade of ore. Every workman was studied and trained so far as his natural ability would permit. He was regarded by his employer, not as a mere automatic unit of energy, but as a human being with likes, dislikes, and possibilities.

When John Fritz first took charge of the Bethlehem works, for instance, the sub-bosses said to him:

"Now, the first thing to do is to fire Parry."

"What's the matter with Parry?" inquired Fritz.

"Oh, he's one of our best furnacemen," replied the sub-bosses, "but he keeps the whole works in a state of turmoil. No living man can get along with him."

"Well, we'll see later about Parry," said Fritz. "At present I've neither friends to reward nor enemies to punish."

THE ROMANCE OF STEEL

In a couple of days, Parry, an able but crotchety fellow, strode into Mr. Fritz's office.

"See here, Mr. Fritz," he said, "I've got a new idea for the furnace."

"Good, Parry," replied Fritz; "take this sheet of paper and show me what it is."

Parry made a clumsy drawing, but Fritz saw at once that while the idea was crude, it was new, and could be improved.

"It looks like a fine idea, Parry," he said; "give me a couple of days to think it over."

Parry went back to his furnace highly pleased with the new superintendent, and Fritz altered the original suggestion until it became workable.

"I find your invention is a good thing," reported Fritz. "You can go ahead and have it done."

After this the aggressive Parry became one of the most tractable men in the works. The incident illustrates the close personal relation that existed between master and man before machinery came between them.

THE AMALGAMATED ASSOCIATION

In such conditions the labour unions flourished. A few years before the Civil War, when the price of bar iron had jumped to eight cents a pound, the United Sons of Vulcan was organised, and in 1865 employers and workmen met for the first time in Pittsburgh to make a wage contract. Ten years later the Amalgamated Association of Iron and Steel Workers was formed, and soon claimed eighty thousand members. All through the eighties it held its men together and wielded great power. Even employers admit that it did useful work for the whole trade. It equalised conditions and steadied business.

But as the use of machinery increased, the labour unions

CARNEGIE COMPANY UNDER FRICK

became intolerable, from the employers' point of view. They had based wages upon output, and as machinery increased the output, they demanded that wages should be raised accordingly.

"The profits of machinery should go to capital," said the employers, "because it is capital and not labour that has paid for the machinery."

The workmen, on the other hand, being accustomed to measure a day's work by the amount of iron and steel that they produced, felt that they were being robbed of their rightful dues when they compared their pay-envelopes with their output.

The old trade union motto, "Labor creates all wealth," was passing out of date in the steel-mills. For example, in one of Carnegie's new mills, three thousand workmen made as much steel as ten thousand could have made a few years before. A wire rod roller in 1882 got two dollars and twelve cents a ton; to-day he gets twelve cents only, yet his wages are higher now than formerly. If he were paid at the old rate to-day, he would make more than four hundred dollars a week. A century ago, when iron was made by labour alone, all the forty-four furnaces in Pennsylvania produced no more iron in a year than the nine Edgar Thomson furnaces can make now in a week. Two centuries ago, a furnace that made four hundred tons a year was prosperous; to-day a furnace makes about eight hundred tons per man per year. Such has been the extraordinary shrinkage of labour as a factor in the production of iron and steel.

For several years before the Homestead strike it was seen by employers that the Amalgamated Association would have to adapt itself to the new conditions or be broken up. But the association was strong and obstinate, and they were afraid of it. B. F. Jones, steel baron and apostle of high tariff, dared not fight the association because of the danger to his political

THE ROMANCE OF STEEL

prestige. Andrew Carnegie dared not for fear of loss to his general reputation as a philanthropist and friend of labour. Yet both Jones and Carnegie were anxious to go to its funeral. Happily for them, at the right time came the right man to do the work—a man who was unhampered by social or political prestige, who was in himself the incarnation of the new period of machinery and organisation.

“It was a question,” said Frick, “as to which should manage the works—the proprietors or the workmen.”

THE GREAT HOMESTEAD STRIKE

The immediate cause of the strike was trivial. It involved only three hundred and twenty-five out of the thirty-eight hundred men; and the tragic nature of the five months' struggle, upon which the greater part of the public attention has been concentrated, was trivial in comparison with the real issue which it decided.

As this is a story of money and the men who got it, it is not necessary to retell the battle of Homestead. The main fact to remember about the downfall of the Amalgamated Association is that it was broken to pieces, not by Henry C. Frick, but by the inventor and the chemist. It was a puddlers' organisation that had outlived the trade of puddling. It went down because it had its face to the past. It was practically a labour feudalism, in which a small number of high-waged workmen ruled a dues-paying mob of low-wage workmen.

“The Amalgamated Association was putting a tax on improvements, and it had to go,” says Lovejoy, who acted as Frick's chief aide-de-camp.

As so often happens with labour organisations, the Amalgamated was again and again sacrificed by leaders who developed political ambitions. Its presidents were bagged, one

CARNEGIE COMPANY UNDER FRICK

after another, by political bosses. Joseph Bishop, its first president, was given a State House job in Columbus, Ohio. William Weihe became an immigration judge at Ellis Island. M. M. Garland was made surveyor of the port at Pittsburgh. Miles Humphreys entered the Pittsburgh fire department as chief. John Jarrett became a high tariff orator in the famous tin-plate campaign. All five were men of character and ability, but they forsook the organisation that had chosen them as its leaders.

Since the Homestead defeat, the steel trade has been practically unorganised. To-day the Amalgamated has not more than ten thousand members. There is not a union steel-mill in the United States. Frick made the fight, but all steel-makers shared in the spoils of victory. Capital was set free for the first time to make sweeping improvements.

“A few months after the strike was ended,” said Mr. Frick to the writer, “we put machinery in the beam-yard that displaced four hundred men.”

Whether labour has suffered in the long run is still a matter of bitter debate.

“After all,” said one of the ex-presidents of the Amalgamated, “there are more men employed in the iron and steel trade to-day than ever before, and the work is easier.”

The more machinery, the more workmen, has been the rule. Machinery means cheaper steel; cheaper steel means more uses and a greater demand. From the social point of view, the fifty-year fight against machinery made by the workmen was in every way a blunder.

THE FACTS ABOUT THE STRIKE

Now that the smoke of the battle has cleared away, the facts may be told without prejudice or passion. It should be stated, in the first place, that the workmen of Homestead were not lawless rioters. No more orderly community could

THE ROMANCE OF STEEL

have been found than Homestead, before and after the Pinkerton invasion. In six months previous to the strike there had been but three arrests, and those for drunkenness only. There are no people so law-abiding that they cannot be irritated into violence, and Homestead felt itself to be in a state of siege. Stories were told about the shooting of strikers by Pinkertons, hired by Frick, in the coke regions. The workmen had a conviction, almost a religious belief, that no outsiders had a right to come in and take their places during a strike. Andrew Carnegie himself had said, a few years before:

“There is an unwritten law among the best workmen, ‘Thou shalt not take thy neighbour’s job.’”

A Presidential election was at hand, and the partisan howling of politicians made cool reasoning impossible. Democratic editors were shrieking that “Slavery had its *Legree*, Protection its Frick.” Free-trade propagandists stood behind the strikers and cheered them on to the bitterest resistance. Every incident was exaggerated. It was not the loss of life which attracted attention, but rather the dramatic and political nature of the struggle. Twice the damage has been done in other strikes of which the public has heard comparatively little.

While the question was not in reality one of wages, but of authority, the immense profits of the Carnegie company were held to be sufficient reason why it should surrender to the workmen. On the day before the Homestead mills were closed, all the Carnegie properties were organised into the Carnegie Steel Company, capitalised at twenty million dollars—twice their previous capitalisation. “Millions for them, and Pinkertons for us,” said the workmen.

Grover Cleveland, who, as many think, owed his first election to the Homestead strike, became the spokesman of the strikers when he said:

CARNEGIE COMPANY UNDER FRICK

“Scenes are enacted in the very abiding-place of high protection that mock the hopes of toil and demonstrate the falsity that protection is a boon to toilers.”

And so the violence that occurred at Homestead was practically predestinated by a series of circumstances outside and inside of the steel business.

CARNEGIE AND FRICK AS EMPLOYERS

In the second place, it should be stated that neither Carnegie nor Frick was unfair or oppressive as an employer.

“Carnegie was always the first to sign the scale,” said a veteran unionist.

“He was the best employer in the world,” said Thomas N. Miller. “There was not a mean bone in his body when it came to paying his men. His idea of retrenchment was not to order a reduction of wages, but to cut out middlemen, buy better machinery, and goad managers. Most of the early iron and steel men were hard and close-fisted; but Carnegie was always both just and generous. In fact, his idea was that the workmen should receive all the profit of their work just as soon as they showed themselves competent to take charge of the business.”

Carnegie had been an employer for twenty-six years, and had never had a serious dispute with his men. He had a knack of going over the heads of walking delegates and reaching the rank and file. He was the “little boss.” He knew hundreds of his workmen by name, and their affection for him was increased by his cheery friendliness.

His partners, Mr. Phipps informs me, thought that he was too yielding to the labour unions. They rejoiced that he was in Scotland when the Homestead clash occurred, and when he cabled that he would start for Pittsburgh by the next steamer, they begged him to stay away.

THE ROMANCE OF STEEL

"The welfare of the company," said Mr. Phipps, "required that Mr. Carnegie should not be in this country, because he was always disposed to grant the demands of labour, however unreasonable."

As a keen man of business, Carnegie knew that it was foolish to hire Pinkertons and strike-breakers. Green hands are useless in a steel-mill, and skilled men are scarce. Better wait six months than ruin the whole plant. He knew human nature better than Frick did. To him labour meant living people, not a mere productive force.

"It is subjecting men to too great a strain," he said, "to stand by and see their places filled by outsiders."

Neither was Frick a labour-crusher, at any period of his career. He never opposed unions that would make and keep contracts, and permit him to introduce improvements. He was always approachable, and ready to hear a grievance. His first order, when the strike began was:

"Don't let the women and children suffer."

The lowest wages paid at Homestead were a dollar and forty cents for ten hours' work; the highest were twelve dollars for eight hours. The average pay of a roller was about eight dollars a day. Stories are told of rollers who made seventy-five and even a hundred dollars a day, when the improved machinery was first introduced. During the strike two mill-workers, who gave bail for a prisoner, were found to possess twenty-five thousand dollars' worth of real estate between them. Hugh O'Donnell, the leader of the strike, owned a three-thousand-dollar residence, comfortably furnished.

For the work done by a roller, eight dollars a day was fair pay. His position was a responsible one. Success depended largely upon his judgment. At that time a roller had from fifteen to twenty men under him, so that he was an officer and not a private soldier in the army of steel workers.



CHARLES M. SCHWAB



CARNEGIE COMPANY UNDER FRICK

Carnegie had every reason to believe that he was paying fair wages. Indeed, no other employer was paying so high a rate.

If Carnegie had been on the spot, the strike might still have occurred. Indeed, it had to come. But his way of settling it would have been to shut down and wait until the men surrendered. He would not have forced matters by sending Pinkertons and non-unionists to Homestead. He would have shown more patience and diplomacy than Frick.

HOMESTEAD AFTER THE STRIKE

After the strike the Homestead mills opened as non-union, Charles M. Schwab undertook the difficult job of superintendent, and the vast six-million-dollar plant was soon running as smoothly as a watch. Jones & Laughlin, who owned the second largest steel-works in Pittsburgh, soon after declared their mills to be non-union. The era of machinery was in full swing.

Frick, Schwab, and Dinkey now proceeded to make Homestead one of the world's wonders. Julian Kennedy had already made it the best plant of its kind; but it was now perfected into a vast organic whole, as automatic and continuous as brains and millions could make it. For centuries the great iron pillar at Delhi, in India, had been regarded as the most wonderful iron product of the human race. It weighed seventeen tons. How it was made had been an age-long mystery. But here in a young republic, in a spot that had been a wilderness a hundred years before, immense white-hot ingots of steel, each one five or six times heavier than the Delhi pillar, were being flicked about as though they were cakes of soap. Here the molten metal was not carried in hand-dippers by sweating slaves, but in steel tank-cars hauled by locomotives. Here the power that moved the wheels and

THE ROMANCE OF STEEL

lifted the burdens was not a thousand half-naked labourers at the end of a rope, but the omnipotence of electricity at the end of a wire. Here there was the touch of a button, not the crack of a whip.

In Homestead fact has beaten fancy. The mechanic has outdone the poet. American days surpass the Arabian Nights. It is the dream of Archimedes come true. The tropical imagination of the East told of a flying carpet that could lift and carry one or two people from place to place; but it could not conceive of the hand of a boy raising at once the whole population of a country. Yet at the Homestead works there is a hydraulic press which has power to lift up all the people in the State of Idaho. Compared to it, the hammer of Thor was a baby's plaything.

THE ERA OF MACHINERY

To describe all the processes in this amazing era of machinery would fill an encyclopædia; but here, for instance, is the story of a steel rail, made at the Edgar Thomson Steel Works. Starting at the ore yards, we see a vast pile of ore containing, perhaps, half a million tons. Near by are the bins for the coke and limestone. Properly mixed these three materials go in a continuous stream of cars to a row of eleven big furnaces. The furnaces are insatiable monsters. They must be fed with ten tons every minute.

Every little while the furnaces are "tapped," and the molten iron flows into a train of small cars, which hurries off to the great mixer. This is a steel box on rockers. The cars are emptied into the mixer which rocks up and down till the iron is all of one quality. Then a second train puffs up, receives a load of iron, about two hundred tons, from the mixer, and scurries away to four Bessemer converters. These blow iron into steel at the rate of four tons a minute.

CARNEGIE COMPANY UNDER FRICK

The converters spout their steel into big ladles, which pour the spluttering fluid into moulds, pushed into position on a third train. When the moulds are filled, the train runs about fifty yards away and stops. As soon as the steel is cooled into red-hot ingots, they are taken out and put into gas ovens so that they will not become cold. From here, one at a time, they are jerked out and dropped upon a small electric car, which rushes them to the rollers to be squeezed into shape.

Back and forward they plunge through the rolls, which are operated very much as is the wringer of a laundry. Every time an ingot goes between the rolls it becomes longer and thinner. Soon it looks like a flaming red worm, twisting and squirming to escape. Sparks splash from it as it writhes and springs savagely at the rolls. You notice that it is now a rail.

In a second it is switched to another track, and springs away as if it had succeeded in escaping from its tormentors. If it thinks so, it is mistaken. Two whirling saws cut off its ends, with a sudden shriek and blaze of fireworks. Steel hands grip it again and fling it through a cold rolling-machine, so that its surface may be hardened. Nothing now remains except to straighten it and drill holes in the ends. Its agony is ended.

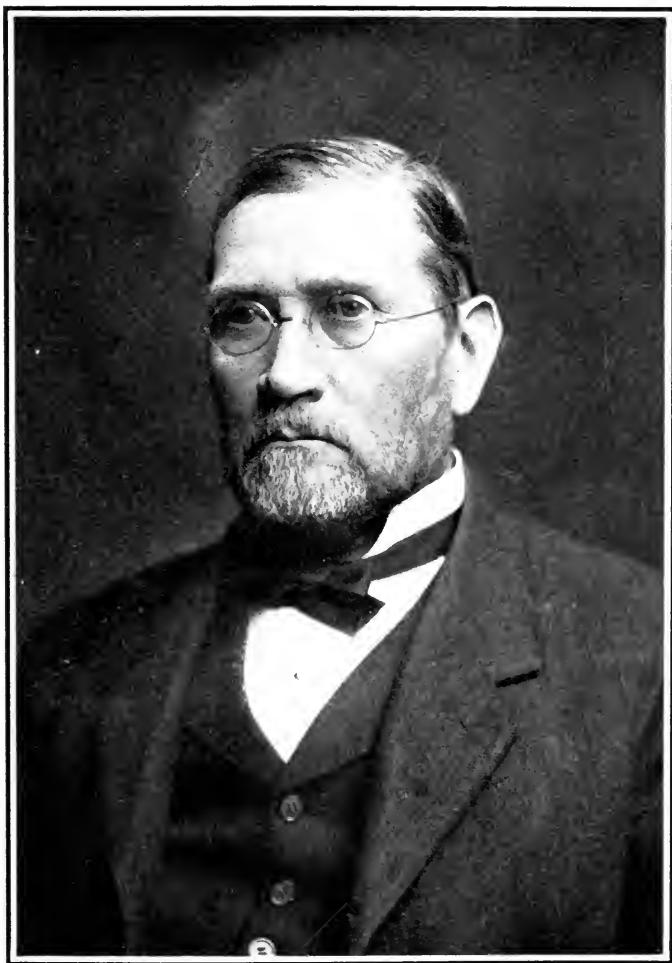
No human hand has touched it, from beginning to end. The only hand labour is the drilling of the holes. As you follow it in its course you see very few workmen. Here and there you notice small switch-towers, in which are quick-eyed men. There are no swarthy Samsons. Most of the men are alert, but not muscular. The day of brute force has set.

Here is the secret of the profits. It is not the high tariff that has brought the millions into the steel treasuries, although the tariff was an indispensable aid up to fifteen years ago. It is not the exploitation of labour, nor the plunder of weaker capitalists, nor the watering of stock. It is not primarily the possession of vast natural resources, as Europeans claim. The

THE ROMANCE OF STEEL

secret of American supremacy in the steel business is in the application of intelligence to every department. Here the inventor is appreciated. The ability to invent and to improve has risen to the dignity of a profession. The man who would have been a puddler fifty years ago is to-day probably a machinist or an electrical expert.

The Carnegie company swept past all its competitors because it laid hold of these new forces of the nineteenth century. It focussed the most energy and the most intelligence upon its business. It paid the highest price for brains. It hitched Ambition and Enthusiasm to its car. And, as we shall see in the next chapter, it staked all its men and all its millions on the future of steel, and won.



GEORGE M. LAUDER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

CHAPTER V

THE WORKMEN-PARTNERS OF ANDREW CARNEGIE

The Extraordinary Careers of Charles M. Schwab and the other Young Steel-Workers Who Stand To-day among Our American Steel Kings—Why Carnegie Put Inexperienced Workingmen in Command of His Industrial Forces—The Enormous Profits which His Methods of Organisation Produced.

WE have now reached a place in this story where the secret of the Carnegie millions is to be more fully explained. We shall discover by what original methods Andrew Carnegie built up his wonderful organisation and outclassed all his competitors.

As we have seen, he was always teachable and quick to learn. He had a composite mind, shaped by innumerable influences; one of the many good ideas which he adopted on the advice of Captain Bill Jones was the plan of giving special rewards for special service. In 1884 he greatly improved on the captain's suggestion by taking into partnership four of his brightest young men—Curry, Moore, Boerntrager, and Abbott. Three years later this idea was made part of the Carnegie system. Young employees were presented with stock and allowed to pay for it out of their dividends.

In this way, when Carnegie found a competent man, he was able to "grip him with hooks of steel," and at the same time to compel the most undeviating loyalty. With the sharing of dividends, he kept his partners in the traces pulling with might and main. He also made it a rule that any of the younger partners could be forced to resign by a three-

THE ROMANCE OF STEEL

fourths vote, so that there was a whip to crack over their heads and keep them steady. As he drove his four-in-hand through Great Britain he no doubt often thought of the resemblance between it and the swift forty-in-hand which he was guiding so cleverly up the steep and crooked road that led to the golden age.

"There never was a wiser business plan," says Clemson, one of the young partners, "for it spurred us all on to do our best work. Of course we were loyal to the man who did so much for us. I would have sooner cut off my right hand than have turned on Mr. Carnegie."

"Mr. Carnegie noticed the men who stepped ahead of the ranks," said Thomas Morrison. "If any one of us took a partner's interest in the business, he was made a partner."

In the selection of these partners there was no system of civil service or step-by-step promotion. In the opinion of Pittsburgh, at least, they owed their success largely to Carnegie's whim. With three exceptions only, they were from the rank and file, without any education of a bookish sort beyond what is given by the public school. Carnegie, like *Sam Weller's* father, could have said of himself and his partners:

"We had the best education any boys ever had. We were turned out in the streets and made to shift for ourselves."

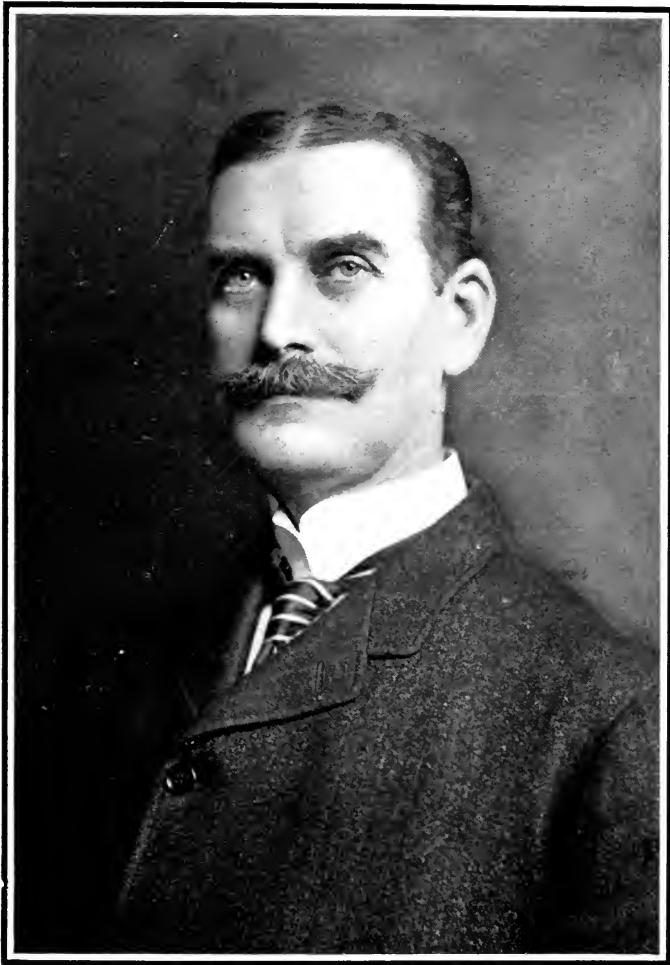
One of the partners first came to Carnegie's notice as a clerk in a linen store. Mrs. Carnegie wanted a certain make of linen, which was not in the market.

"I can have it made to order for you, madam," said the obliging clerk.

Mrs. Carnegie was pleased. "I see you are a Scotchman," she said.

"Yes, madam," he replied. "I was born in Dunfermline."

Dunfermline was Carnegie's birthplace—his Mecca—his



FRANCIS T. F. LOVEJOY



WORKMEN-PARTNERS OF CARNEGIE

Holy City; and the young clerk at once found favour in his eyes. A place was made for the quick-witted youth in the sales department, and before long he was neck deep in the stream of gold.

George Lauder, whose share was about seventeen million dollars when the Carnegie company was turned over to the United States Steel Corporation, was quite willing to tell me of the unique incident which brought him into the business.

"It is a curious fact," he said, "that Mr. Carnegie invited me to become his partner because I happened to know the meaning of a scientific phrase—'the modulus of elasticity.' He had closed an order for steel for the great St. Louis bridge, and this phrase occurred in the contract. I explained its meaning, and at once he insisted that I should become his partner."

"That story is correct," said Carnegie when I brought it to his notice. "I didn't know what the modulus of elasticity meant; but I knew enough to get the contract."

LAUDER, THE "BALANCE-WHEEL"

Mr. Lauder, who is to-day a rugged-faced old man, with a kindly smile and simple manners, gave his attention for thirty years to the ore and coke departments. In council he was moderate and cautious, and often acted as a brake for his more impulsive cousin. Lauder and Carnegie had been boys together in Scotland. Lauder's favourite name for Carnegie was "Neeg," and Carnegie's favourite name for Lauder was "Dodd,"—a Scotch nickname for George. "Dodd is the balance-wheel," he would often say. Lauder was one of the few in the company who had received a technical education, and the younger men went to him for advice.

"He was a father to us," says Clemson.

Thomas Morrison, like Lauder, was a relative of Carnegie.

THE ROMANCE OF STEEL

He became superintendent of the great Duquesne works at twenty-nine years of age, having started four years before as an ordinary machinist. His career was brilliant, and there is no one in Pittsburgh who ascribes it to the mere fact of relationship to Carnegie. "Morrison made good," is the general opinion.

"When he came to Pittsburgh he told no one that he was a relative of mine," said Carnegie. "I discovered him one day by accident, after he had worked his way up."

A. C. DINKEY AND F. T. F. LOVEJOY

A. C. Dinkey, whose sister married Charles M. Schwab, is also generally classed as one who has proved worthy of all his honours. His mother was left a poor widow with several small children. She was very ambitious for their future and, leaving the little village where they were born, brought them to Braddock so that the two boys could work in the steel-mills. Young Alva Dinkey is remembered by the older steel-workers of Braddock as a bright, round-faced boy who carried water for the furnace-men and was always asking questions. At sixteen he learned telegraphy at a little station near Braddock. Then he began at the bottom of the ladder in a machine shop, worked his way up and left to learn the trade of an electrician. Every change meant a drop in wages, but a gain in knowledge. Entering the Homestead works as a clerk, he introduced electrical machinery on a large scale. At twenty-six he became general superintendent of Homestead, with ten thousand men under his command.

Francis T. F. Lovejoy, unlike Dinkey, spent the first twenty-seven years of his life knocking about from failure to failure. He was by turns stenographer, telegrapher, book-keeper, reporter, oil workman, and driver of a laundry wagon. Then he got a clerkship with the Carnegie company,



THOMAS MORRISON



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

WORKMEN-PARTNERS OF CARNEGIE

and developed into a most industrious and accurate auditor. He laboured night and day. During the Homestead strike he went through a fiery ordeal. Every charge against the strikers was signed by him, making him for the time very unpopular. His career divides naturally into decades—at seventeen he left home as a moneyless boy; at twenty-seven he became a Carnegie employee; at thirty-seven he was admitted to partnership; and at forty-seven he awoke one morning to find himself one of the multimillionaires of Pittsburgh.

FROM STEEL-MAN TO DIPLOMAT

Another romantic career was that of John G. A. Leishman, now United States Minister at Constantinople. He was undersized, and when he got his first job as office-boy in an iron-works at the age of ten, he looked as if he had escaped from a kindergarten. In his teens he was promoted to be a "mud-clerk," having an office in a little shanty on the river-bank, and attending to the unloading of barges. After saving a little money he started a small furnace, but was soon brought to a standstill.

Next he came to view as a broker in iron and steel. He was smart, diplomatic, and a good salesman. Carnegie noticed him and gave him a position. At that time Captain Bill Jones was booming the production of steel rails, and to Leishman was assigned the task of securing the big orders. Before many years he was president of the company; but was not permitted to hold the office for many months. President McKinley offered him the position of Minister to Switzerland; and he bade good-bye to steel-making. Since then he has been a member of the diplomatic corps—rich, but not as rich as those who remained under the smoke of Pittsburgh.

Two other partners who left the company before the grand sharing the spoils in 1901 were W. L. Abbott, who went

THE ROMANCE OF STEEL

out of his own accord in 1892, saying "I have all the money I want"; and John A. Potter, who left with the purpose of making armour-plate in Cleveland. Both men had climbed up from the lowest rungs of the ladder, Potter being superintendent of Homestead at thirty, and Abbott chairman of the board at thirty-seven. Abbott was one of the few for whom mere money-making had no fascination. At forty he retired to enjoy the pleasures of travel, books, and friendship, and apparently has no regrets at having missed a few superfluous millions.

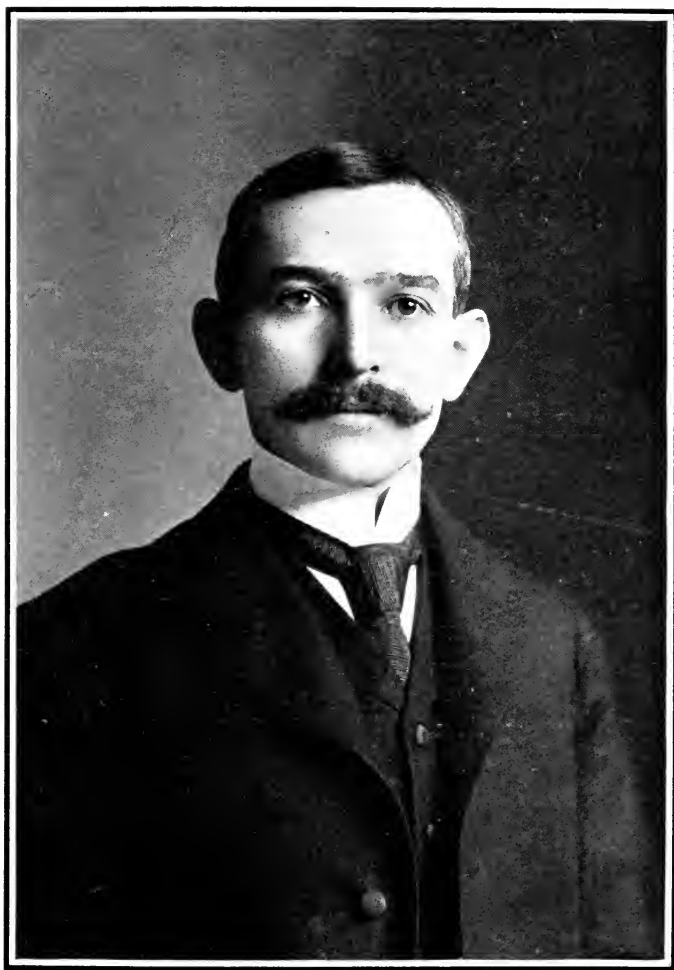
"I left before the melon was cut," he says.

Abbott's chief contribution to the success of the Carnegie company was the organisation of its unequalled system of sales agencies. In 1884, when he was chairman of the board, the company had no agents of its own. Its orders came in from commission men.

"This was not satisfactory," says Abbott, "for the reason that a commission man makes deals with both sides. We decided that it would pay to send out salaried men who would work first and last for the Carnegie company."

THE CARNEGIE SALES AGENCIES

The new plan soon flooded the company with orders. Those who made the largest sales were taken into the company as partners, the first three being John C. Fleming, J. O. Hoffman, and Charles W. Baker. To-day the company has sixteen agents in sixteen American cities. Four times a year they meet in Pittsburgh to compare notes and "get posted." And once a week each agent gets a letter from the home office, keeping him up to date in all particulars of the business. No body of men did more to pull the Carnegie company up the long hill into its golden age than this little band of agents, working and scheming day and night to gain the prize of a partnership.



ALVA C. DINKEY



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

WORKMEN-PARTNERS OF CARNEGIE

One of these agents, who perhaps has received more naïve enjoyment from his many millions than any of his fellows, was Alexander Rollin Peacock. Mr. Peacock served no apprenticeship in the iron and steel business; but walked directly into the Carnegie company from behind a dry-goods counter. He proved that he could sell steel rails as easily as handkerchiefs. The two largest orders ever secured by the company were obtained by him—sixty-five thousand tons of rails for the Canadian Pacific and sixty-five thousand tons of structural material to the builders of the New York Subway.

There was scarcely one of these forty partners whose life was not a repetition of the old American romance of self-help. Emil Swensson, in 1882 working as a bricklayer's helper on the Hudson River tunnel, was fourteen years afterward the manager of the great Keystone Bridge Company. From his brain sprang the steel-hopper car and the steel "traveller," by means of which a steel bridge can be erected with one-third of the time and cost. To Swensson is largely due the development of structural steel. He was a maker of bridges, and the first tall steel buildings were built of bridge materials.

"After all," remarked Swensson, "what is a skyscraper but a bridge set on end?"

Homer J. Lindsay and Henry P. Bope began by hammering typewriters in the Carnegie Building, worked up to the sales department, placed big orders, and won the favour of the "little boss." Lewis T. Brown was a shearman, Azor R. Hunt a roller, D. G. Kerr an apprentice in the laboratory, W. W. Blackburn a clerk in a village store, W. C. McCausland a messenger-boy, Daniel M. Clemson, a helper in a blacksmith shop, and so forth. Clemson entered Carnegie's employ as a labourer, and in a few years was advanced until he ranked as the admiral of the ore fleet and colonel of the natural gas regiment.

Two other shirt-sleeve partners who missed the cutting of

THE ROMANCE OF STEEL

the melon were P. T. Berg and Henry William Boertrager. Berg was a Swedish mechanical genius, who worked wonders at the Homestead steel-mills. Whenever one of his new improvements was being discussed, Carnegie would usually say:

“If Berg designed it, that’s all I want to know. It’s bound to go.”

Long before the golden age arrived, Berg concluded that he had made as much money as he would ever need, and went back to his beloved Sweden to spend it.

Boertrager, too, was a mechanical marvel, but from Germany. He had left his native land to escape military service. He was fond of telling the story of his flight.

“One day,” he would say, “just before I was twenty-one, I said to myself, ‘William, in a few months you’ll be taken for the army. You’ll lose the best years of your life. If you don’t run away at once, you are lost.’”

A STEEL-MILL STATESMAN

The next day he started for America. His first job in Pittsburgh was as stoker to a small engine. Then he became a labourer in a Carnegie steel-mill at thirty dollars a month, and worked up until, at twenty-eight, he was the general manager of the Kloman mill. When he died he was worth a million.

Boertrager was one of those men who might properly be called a steel-mill statesman. He was in his element when he was surrounded by men and machinery. His mill was his pride. To see every department working smoothly gave him the same pleasure that an orchestra conductor feels when his players are in perfect accord. He was a real leader of workmen, and, like Captain Jones and Schwab, though to a lesser degree, he attached his men to him. Whenever he was in command, the costs were pulled down and new records made.



AZOR R. HUNT



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

WORKMEN-PARTNERS OF CARNEGIE

It was such men as Boertrager that made forty-per-cent. profits possible in the steel trade.

“Boertrager had one speech,” said Mr. Carnegie. “It was short and straight to the point. ‘Gentlemen,’ said he, ‘what we want is this—get prices up, and costs down; and every man must stand on his own legs.’”

His mind was so centred upon his work that he could not talk upon any subject without using the language of the steel-mill. For instance, soon after his marriage to a most estimable lady of short stature, Carnegie met him in the offices and offered congratulations.

“Did you get a perfect wife, William?” he asked.

“Vell, Mr. Carnegie,” replied Boertrager, “maybe she might have been improved if she had got von more pass troo de rolls.”

Another man who helped to make forty per cent. possible was H. M. Curry, who practically worked himself to death.

“I have known him to stay by a job for forty-eight hours at a stretch,” said James Scott. Curry was a man of the highest honour as well as a record-breaking expert, and was greatly esteemed in Pittsburgh.

The young partner who first put the Carnegie company's books in order was S. E. Moore. He was dropped long before the days of affluence began, and Lovejoy, the former laundryman, became his successor. Millard F. Hunsiker was the first salaried tester of the company. This was a new position and a new idea. The custom had been for every buyer to send his own tester to the steel-mill; but Carnegie placed Hunsiker as the official tester of the company's mills. Hunsiker had a high reputation as an expert, and was afterward selected as the partner who was best fitted to open up the foreign market. He was consequently a pioneer in two important departments.

This policy of making generals out of inexperienced pri-

THE ROMANCE OF STEEL

vate soldiers was distinctively Carnegian. Other Pittsburgh employers regarded it as revolutionary and dangerous in the highest degree. It was a radical wiping out of all the old-fashioned ideas of apprenticeship. Smooth-faced boys were put in command over grey-haired veterans. Enthusiasm received the honours that had invariably gone to experience. The older men commented bitterly on this policy, and said that Carnegie was turning the industrial world upside down. But Carnegie, being generally four thousand miles away, continued to put his army of twenty thousand workmen in charge of its drummer-boys. Whether this policy was correct or not theoretically, it worked better than any other plan of leadership that had ever been tried in the iron and steel business.

No doubt, when this story of the Carnegie methods is read in Europe, it may seem incredible. This flouting of book knowledge, this contempt for the college and the historian, should have led to wreck and ruin, according to all the theorists. On one occasion, Herr Wittgenstein, the Frick of Austria, was present at a meeting of Carnegie superintendents. Twenty or more were gathered around the long table.

"I suppose, Mr. Schwab," said the Austrian, "that most of these men have received a technical education?"

"Only three of them had any training," replied Schwab. "All the others rose from the ranks, as I did."

As a matter of fact, a technical education was of little value in those pioneer days. There were few books, if any, on the new methods of making cheap steel. The past history of the business was mainly a record of mistakes and failures. From the standpoint of the old steel-makers and the college men, Carnegie and his young partners were constantly trying to do what was impossible. The amazing fact was that in at least half of their wild plunges toward the goal, they succeeded. They gained ground, held it, and plunged again.



D. G. KERR



WORKMEN-PARTNERS OF CARNEGIE

STEPS IN RISE OF C. M. SCHWAB

The most brilliant of all the young partners was Charles M. Schwab. His was the most meteoric career ever known in the steel business. He had risen step by step—but such steps!

Step number one—driving stakes for a dollar a day at the Edgar Thomson works.

Step number two, six months later—superintendent of the Edgar Thomson works, the foremost steel-making plant in the world.

Step number three—at thirty years of age superintendent of both the Edgar Thomson and Homestead plants, managing eight thousand workmen. This was the only instance in which Carnegie permitted one man to operate two plants.

Step number four—president of the Carnegie Steel Company, with a White House salary and three per cent. of the stock.

Step number five—president of the United States Steel Corporation, with twenty-eight million dollars' worth (par value) of its stock, and a salary of a hundred thousand dollars a year. In 1901 he sat on the apex of the towering steel pyramid—the victor among two hundred thousand competitors—at thirty-nine years of age.

“The first time I saw Schwab,” said Mr. Long, a former president of the Pittsburgh Stock Exchange, “he was a bare-footed boy at Loretto, a mountain hamlet near Altoona. The next time I saw him he was in his hundred-thousand-dollar private car.”

Schwab's father kept one of the village stores, and Charlie drove the rickety stage between the village and Cresson station. It was a poor plank road at that time, but he has had it paved at his own expense since then. Those who remember him say that he was the happiest boy in the village—laugh-

THE ROMANCE OF STEEL

ing, whistling, singing, cracking his whip. His nicknames were "Dolly Varden" and "Smiling Charlie." The drummers told him stories and made fun of his flaming red neckties. No one looked less like an embryonic steel king than Charlie Schwab.

By the time he was nineteen, Schwab had drifted away from Loretto, and anchored in a Braddock grocery store. For wages he got a five-dollar bill every two weeks. One evening he caught the eye of Captain Jones.

"Do you want to change your job, young fellow," asked Jones.

"Yes, sir!" responded Schwab.

"What are you willing to do?"

"Anything," replied the smiling young clerk.

"Well," said Jones, "come around to-morrow morning and I'll give you a dollar a day to hammer stakes."

This was the beginning of a friendship that lasted until the tragic death of Captain Jones. Schwab at once showed a natural talent for mechanics, and from Jones, who was without a peer as a leader of workmen, he learned to manage men.

SCHWAB'S WORK AT HOMESTEAD

After the death of his teacher, the heaviest burden of the Carnegie company fell on the shoulders of Schwab. It was he who reconstructed the Homestead works from the débris of the great strike; who created the profitable armour-plate department; who originated the Saturday meetings of superintendents. With cheerful self-assurance, he accepted any responsibility that was offered. Enthusiasm, he found, was better than experience. Nothing daunted him. He swept into the Golden Sea with all sails set and the band playing. Had he been asked to reconstruct the empire of Russia or to federate the South American republics, he would have replied without hesitation:



W. W. BLACKBURN

WORKMEN-PARTNERS OF CARNEGIE

“Yes. Good idea! I’ll attend to that next week.”

Schwab’s greatest achievement—the one lasting honour which nothing can take away—was his successful handling of the Homestead steel-works after the great strike. No steel-maker, before or since, has ever had to tackle so hard a job. When Schwab took Homestead, it was a failure. It was a four-million-dollar mistake. The machinery was not working properly and the men were not working at all. There was a stupid rabble of strike-breakers, and a sullen, defeated army of five thousand workmen to deal with. And the whole place had been for five months a battlefield, passion-swept and blood-stained—the Waterloo of organised labour.

WINNING THE SURLY WORKMEN

Into this inferno of hate and bitterness came Schwab, caring no more for discouragements than a duck does for a drizzle. Little by little his “Hurrah, boys!” swung the great steel-mill into action. He was approachable and sympathetic, yet always as quick as lightning to turn everything to his own advantage. Always fluent and plausible, he was never at a loss for a reason or an inducement. In half a year the surly workmen were entirely won over by his invincible optimism and perseverance; and “Charlie is my darling” was heard in Homestead, instead of the curses and rifle-shots of a few months before.

“Schwab is a genius in the management of men and machinery,” said Carnegie, when I asked him for an estimate of his young partner’s work. “I never saw a man who could grasp a new idea so quickly.”

As soon as Carnegie saw that Schwab had “made good” at Homestead, he made him president of the whole company, so that not even the masterful Frick was equal to him in authority. This was perhaps the first instance in which so young a man, absolutely without any business experience, was

THE ROMANCE OF STEEL

placed in command over so great a corporation. He had previously had an offer of the vice-presidency and had refused it.

"I'm a bigger man at the works," he said.

There was another young workman in the Carnegie company who followed Schwab like a shadow. He was four years younger, and his name was William Ellis Corey. He was as thoroughly an American as any one can be, being a descendant of Benijah Corey, who flourished a hundred years ago and owned a farm of three hundred acres whose site is now covered by the streets of New York.

ORGANISATION VERSUS THE INDIVIDUAL

Schwab and Corey had been boyhood friends in smoky Braddock, when one was in a grocery-store and the other was working on a coal-tipple. Both got dollar-a-day jobs from the Carnegie company and worked up to be superintendents at twenty-one. Both married Braddock girls. Both became armour-plate specialists. Both made reputations as "drivers" and record-breakers. Both moved up from one presidency to another, Schwab being always one move ahead.

But here the resemblances cease. Schwab, the last of the individualists of steel, put personality first and organisation second. "Every business grows around a great individual," he said. Corey put the organisation first and the individual second.

To Schwab a workman was "Bill," or "Joe," or "Tom." To Corey he was "No. 137."

Schwab swayed his men by sentiment, by his contagious enthusiasm, by his personal knowledge of each man. Corey ruled by his tireless supervision and his thorough knowledge of every department.

Schwab was brilliant, dramatic, impulsive. Corey was

WORKMEN-PARTNERS OF CARNEGIE

painstaking, methodical, trustworthy. On one of the very few occasions when he was persuaded to talk for publication, he said:

“The man who succeeds is the one with bulldog tenacity—who never gives up. He is the man who not only does what he is told, but more.”

Schwab loves men and the applause of men. Publicity stimulates him like wine. Corey is reserved, stern-faced, non-magnetic.

Schwab is a man of many interests. Even his charities are unique. He has built at Loretto, his birthplace, a cathedral and a monument to Prince Gallitzin, the founder of the town. To Braddock he has given a church and to Homestead an industrial school. At Richmond Beach, New York, he has established schools in which crippled and deformed boys and girls are learning trades. To the tenement children of New York he gives a thousand dollars' worth of toys as a Christmas present.

In his own pleasures, he loves display like a child. His New York palace is rated on the tax-list as the second highest in cost, Senator Clark's unfinished mansion being first. With land and furnishings, its value is probably more than five millions. Carnegie's austere residence is a model of simplicity when compared with Schwab's ornate pile of cream-coloured granite, with its gobelin tapestries, its music-room and chapel, its Flemish smoking-room, Louis Seize drawing-room, Henri Quatre library, Louis Quatorze dining-room, and Louis Treize breakfast-room.

COREY'S IMPERSONAL BUSINESS METHOD

As to where Corey lives, no one knows. The quiet, anonymous apartment hotel from which he steps forth at twenty minutes past eight every week-day morning has not yet been discovered by the Sunday press. He may have his philan-

THE ROMANCE OF STEEL

thropies, but they are never heard of. He has few interests, if any, outside of his office. Not only is he the president of the biggest corporation in the world—he is part of the mechanism itself. As a Homestead roller told me, "Corey never knowed anything except his own business." He has sunk himself, his personal likes and dislikes, in the socialised steel business. He feels himself to be a fraction, rather than a unit. His corporation is an organism like a human body, and he is the co-ordinating function of its brain.

Considered purely as a profit-making device, Carnegie's plan of taking young workmen into partnership has never been beaten. It was his master-stroke. By making every superintendent a partner, whose partnership depended upon continued faithfulness and record-breaking, he built up a working force that was absolutely loyal as well as efficient. He could pursue his globe-trotting without any fear of plots or desertions.

Not one of the young partners thought of balking, no matter how vigorously the "little boss" swung the whip. All of them agree that he was a hard driver. Mr. Carnegie himself freely admits the charge, and gave me an anecdote to illustrate it.

"On one occasion," he said, "when I was about to sail for Europe, I was saying good-by to a group of my young partners, and telling them of the benefit which I always derived from an ocean voyage.

"'You cannot imagine the relief I feel,' said I, 'when the ship leaves Sandy Hook behind and I am fairly out upon the waters for a whole week's rest.'

"'Yes, Mr. Carnegie,' said Captain Jones, 'and just think what a relief we all get!'"

"No other man could equal Carnegie at sticking the knife in and twisting it around so as to hurt," said one of his partners.



D. M. CLEMSON



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

WORKMEN-PARTNERS OF CARNEGIE

PRAISE AFTER BLAME

A few of them resented his proddings, but none could deny that they had a good effect. Carnegie was as quick to give praise as blame, and he was always fair. If he made a mistake, he was ready to admit it. In one instance, when he had written a scorching letter to one of his superintendents, who had taken an order at too low a price, the superintendent replied sharply and showed good reasons for his action. Carnegie was convinced, and at once wrote to the superintendent the following short but sufficient letter of apology:

DEAR A——, I cave. A. C.

It was not by chance that Carnegie gave to enthusiasm the rewards that had hitherto gone to experience. No one was ever more sensitive to world-changes than he. He knew that the age of machinery had come. He knew that it was more important to know what was done yesterday than what was done ten years ago. He preferred young men, who raced toward the future, to old men, who stopped to look back at the past. To be quick—quick—quick, that was the Carnegian policy.

“The man who starts first gets the oyster; the second man gets the shell,” was one of his favourite sayings. In one instance, when a manager telegraphed to Carnegie the cheerful news that he had beaten all records in making steel, Carnegie replied: “Congratulations. Why not do it every week?”

His aim was to build up a corporation which was as nearly as possible like an automobile—swift, reliable, easily controlled, and as ready to back as to go ahead. In a world of telegraphs, cables, and daily newspapers, the supreme necessity was to make decisions and carry them into effect at once. Again and again Carnegie stunned his partners by his quick

THE ROMANCE OF STEEL

changes of policy. It was very disconcerting. It pushed them out of the easy grooves of routine. It compelled them to make new plans and to destroy the old ones. If they had been men of years and long experience, they would have been demoralised by this making and breaking of plans. But they were young, energetic and bound to their chief by every consideration of self-interest.

What a modern steel king needs is not an army of skilled workmen who have served long apprenticeships at their trade. First and foremost, he needs capital; and, secondly, he needs loyal and efficient superintendents. To-day steel is made by capital, not by labour—by machinery, not by muscle. It is made by men who are primarily financiers. Ten thousand picked steel-workers, without machinery, would be helpless in the face of modern competition; whereas a man like Schwab could take ten thousand unskilled consumptives, and, by an outlay of thirty millions, create a first-class steel-plant in a few years.

IRON-MAKING IN DR. JOHNSON'S DAY

A few comparisons will show the astounding difference between the steel-making of the good old days and to-day. "At an iron-works I saw round bars formed by a notched hammer and an anvil," wrote Dr. Samuel Johnson a hundred and thirty years ago. The learned doctor was impressed by the ingenuity of the smith in using a notched hammer. What would he think if he could visit the young town of Monessen, near Pittsburgh, and see thirteen hundred thousand pounds of iron rods made in twenty-four hours?

"George Anshutz regarded forty tons a week as magnificent work," said George Anshutz Berry.

Anshutz was the first iron-maker in Pittsburgh, and Mr. Berry, now eighty-seven, is his only living relative. But what would the old pioneer sav if he could see a Pittsburgh furnace

WORKMEN-PARTNERS OF CARNEGIE

produce fifteen hundred thousand tons of iron without relin-
ing—as much as the best furnace of former days could make
in seven hundred and fifty years?

Ethan Allen broke the record in iron-making when he made
a ton in less than ten hours. But what would the hero of Ti-
conderoga think of his achievement if he could watch the
flaming converters of Braddock make five tons of steel in two
minutes?

HALF A TON A SECOND

“ I well remember when a five-hundred-pound mass of iron
was thought to be so heavy that the whole neighbourhood gath-
ered in to see it rolled,” said Charles Huston, vice-president
of the Lukens Iron and Steel Company. What would that
“ whole neighbourhood ” say if it saw a steam-hammer weigh-
ing a quarter of a million pounds thrown on the scrap-heap
of the Bethlehem Steel Company because it was too light?

“ It takes me ten years to sell ten tons of steel,” said a Phila-
delphia dealer in 1750. If that worthy Quaker is still aware
of terrestrial events he will know that the steel men of the
United States are now selling ten tons of steel every twenty
seconds.

Soon after the close of the Civil War, a Trenton firm made
a circular saw over seven feet in diameter. “ Enormous!”
cried the steel-makers of the world when they saw it at the
Paris Exposition. What adjective would they find suitable
if they could see the piece of steel ribbon that was made last
year by Henry Disston & Sons, Philadelphia—fifteen inches
wide and sixty-seven yards long?

An English workman made a dozen pins and called it a
day’s work, at the time when Adam Smith was writing his
“ Wealth of Nations.” To-day a census of pins in the United
States alone will show that about twelve billion new pins are
made and sold every year. A pocket rule at that time was

THE ROMANCE OF STEEL

made by a twenty-dollar plant and cost a dollar. Now it is made by a hundred-thousand-dollar plant and costs ten cents.

"Thirty years ago I found only one man in San Francisco who could shoe my horse, and now the San Franciscans are building steam-frigates," said General Sherman in a speech delivered to a company of steel men in 1890.

The United States had its eighth President before it had its first steel plough; yet the American farmer of to-day is buying steel waggons and steel bath-tubs. And during President Grant's last year of office, an order for twelve tons of Bessemer steel was considered so large that editorials were written on it, yet last year the United States Steel Corporation quietly accepted a single order for a million tons.

Two centuries ago, roughly speaking, Dr. Higley was making steel by the ounce in an apparatus that he could have carried in a valise. One century ago Jonathan Leonard was making a hundred tons of steel a year. To-day we are making a hundred tons every three minutes. The price of manufactured steel has fallen from forty thousand dollars a ton to twenty-eight. Instead of making five pounds at a time, we make thirty thousand pounds, and instead of a ten days' process, it is now a ten minutes' process, or less.

CARNEGIE'S FIGHT FOR SPEED

What Carnegie and his young partners accomplished in the matter of speed was equally wonderful. As we have seen, they created the "big second" and set a breakneck pace which their competitors were obliged to follow. Horace Greeley relates that while on a tour through the south of France, he saw a farmer cutting grass with a small hand-sickle.

"Why don't you get a scythe?" he asked. "Then you could cut twice as much."

The Frenchman deliberated for a few moments upon this new idea. Then he said:

WORKMEN-PARTNERS OF CARNEGIE

"I don't see how that could be possible, because I haven't got twice as much grass to cut."

The idea of saving time or energy, or of doing more than a certain definite amount of work, was too revolutionary for his simple mind to comprehend. But in the American iron and steel trade, from the earliest days, there was a persistent aim to do the greatest possible amount of work with the least possible amount of labour. This "American plan" began with our first great iron-maker—Joseph Jenks, of Lynn. In 1648 he took out the first patent of which we have any record. His invention was a water-power device for saving time and labour—"for speedy dispatch of much worke with few hands," he said, striking the keynote of the iron and steel trade of the future.

To-day the fight for speed is practically won. "The faster the better" has become almost an international motto. But at first the American steel-makers had to tunnel through a mountain of European prejudice.

"Too fast! You can't make good steel in ten minutes," said a foreign engineer to Charles S. Price, superintendent of the Cambria works.

"I told him," said Price, "that I would sooner make steel in six minutes than ten."

Last year an American salesman was trying to sell a new style of lathe to a German manufacturer.

"It will do so and so in seven minutes," he said.

"Nonsense!" retorted the German. "Why, that takes my men an hour."

Finally, however, the German was persuaded to buy one of the lathes. Several months afterward he wrote to the maker of the lathes and said:

"What your man claimed was true. The lathe will do that work in *five* minutes."

THE ROMANCE OF STEEL

QUICK WORK OF STEEL MAGICIANS

The swift Schwab built two fifty-ton open-hearth furnaces at Homestead in sixty days. Mayor Tom Johnson, when he was a steel-maker, built a ten-mile street railway in the same length of time; and completed his great Lorain steel plant in forty-two weeks after the cutting down of the first tree—an unparalleled feat. Still more recently, a Pittsburgh company put up an immense steel building six hundred feet by a hundred and twenty-five, at Monessen, in fifty-seven days.

The magical quickness with which ore is handled is the wonder of foreign steel men. The ore which is lying in the wilds of Minnesota on Monday morning is dug up, transported a thousand miles, and made into steel rails by Saturday night. One Duluth engineer has actually proposed a loop-the-loop system of unloading ore-cars—turning them upside-down at the ore-docks, so that they might travel in a continuous belt line between the docks and the mines. This is regarded as a joke to-day; but it may be a fact to-morrow.

All this speed—all this machinery—all this magnitude of operations, meant the destruction of the small steel-makers and the consolidation of the large ones. It meant the survival of the fittest, and the Carnegie company, with its sagacious leader and its devoted band of sub-partners, was by far the fittest corporation that the nineteenth century had produced. Its semi-automatic mills, its arrangements for the cheap assembling of its raw materials, and the zeal of its officers, made it one of the wonders of the industrial world.

From 1875 onward the Carnegie company was the pace-maker of the steel trade. The story of its profits will always remain one of the wonders of American finance and manufacturing. Carnegie became a King Midas. He touched tons of steel and transformed it into gold.

In 1890, which was the first of these King Midas years, the



TOM L. JOHNSON



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

WORKMEN-PARTNERS OF CARNEGIE

net profit was five and a half million dollars. The cost of steel rails at that time, according to an official investigation made by Carroll D. Wright, was eleven dollars and twenty-seven cents per ton; and the average selling price during the year was thirty-one dollars and seventy-eight cents. For the following five years the profits fell off, being only four million dollars during the year of the Homestead strike, and three millions in 1893. In 1898, although the price of rails averaged seventeen dollars and sixty-two cents, the lowest figure on record, the Carnegie company cleared eleven and a half millions. Such a gain as this—nearly a million a month—was unprecedented. Carnegie clapped his hands and said:

“We shall beat that next year!”

FORTY MILLION DOLLARS A YEAR

In 1899 the Carnegie bookkeepers could scarcely believe their eyes. When the last column of figures had been added they saw before them a total of twenty-five and a half million dollars. This was more than the capital stock of the company had been up to the previous year. All were satisfied except Carnegie. As usual, this victory made him eager for a greater one. He was sixty-four years old, and anxious to retire from business; but he wanted the last year to be the best.

“Personally, I’m glad to have this year (1900) to ourselves,” he wrote to George Lauder, “to show what we can do.”

His company was making a million every two weeks, but this was not enough. The superintendents were spurred up in all departments. “More! More!” were the orders. The whole mechanism was speeded up, and fortune favoured the brave by raising the price of rails to thirty-two dollars and twenty-nine cents. When the year closed, there was forty million dollars to divide—the greatest amount ever earned by any industrial corporation in legitimate, competitive busi-

THE ROMANCE OF STEEL

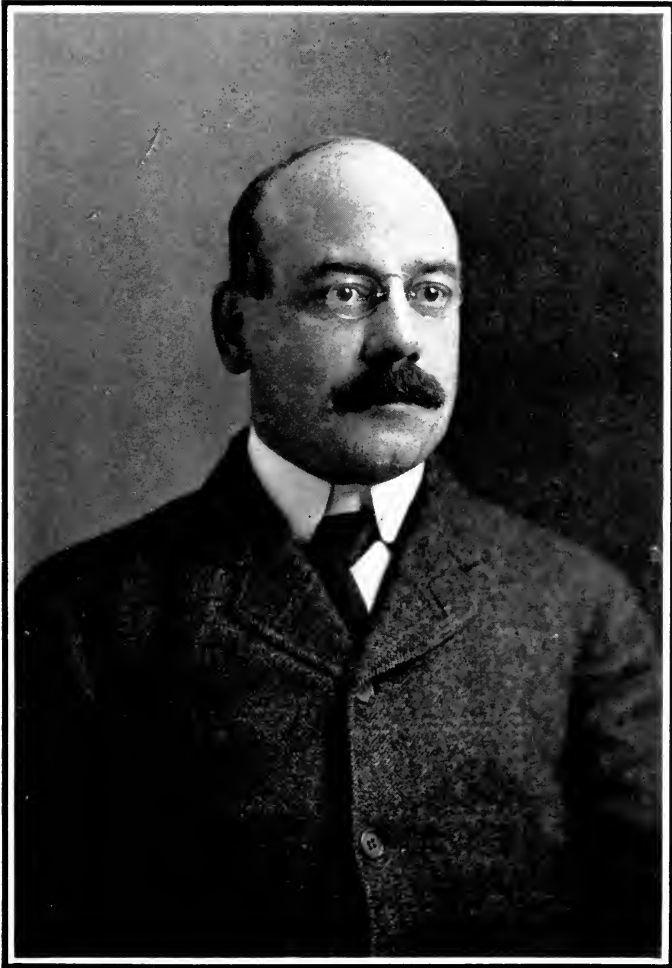
ness. Carnegie got twenty-five millions; Phipps, five and a half millions; Frick, twenty-six hundred thousand; Lauder, a million and three quarters; Schwab, thirteen hundred thousand. As for the young partners, they were well content with sums ranging from fifty thousand to eight hundred and fifty thousand. The least of them received a Presidential salary for his year's work. The Carnegie company profits, from 1875 to 1900, were one hundred and thirty-three million dollars.

GOOD MANAGEMENT THE SECRET

"There's a lot of profit in a steel mill," admitted Mr. Frick. But no other steel-mills, either in America or Europe, have made such a continuous series of big dividends as these. Profits are not an inevitable result of a high tariff and a steel-mill. For instance, in a year when Carnegie made over four millions, his chief competitor, the Illinois Steel Company, lost more than a million. The following year Carnegie cleared more than five millions, while the Illinois Steel reported only three hundred and sixty thousand dollars. The fact seems to be that a steel-mill is a gold mine when efficiently managed, and a sink-hole for capital when otherwise. It is generally agreed among steel-makers that no new improvement should be installed unless there is a prospect of getting back its cost in three years.

According to the admissions of Charles M. Schwab at this time, there was no longer any need to protect the Carnegie company against foreign competition.

"You know we can make rails for less than twelve dollars a ton," he wrote in a letter to Mr. Frick in 1899. "I know positively that England cannot produce pig iron at actual cost for less than eleven dollars and fifty cents per ton, even allowing no profit on raw materials, and cannot put the pig iron into



FRANK B. SMITH



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

WORKMEN-PARTNERS OF CARNEGIE

a rail for less than seven dollars and fifty cents. This would make rails at net cost to them of nineteen dollars. We can sell at this price and ship abroad so as to net us sixteen dollars at works for foreign business, nearly as good as home business has been. What is true of rails is equally true of other steel products. As a result of this, we are going to control the steel business of the world."

CARNEGIE AND ARMOUR-PLATE

Since 1892 profits from armour-plate had greatly augmented the Carnegie income. When he was first asked to make armour-plate, in 1890, Carnegie flatly refused. Soon afterward he received a letter from President Harrison, urging that it was his duty to provide his country with its means of defence.

"That settles it," replied Carnegie. "We'll go ahead and make armour-plate." In a few years he had become the rival of Krupp and Armstrong. A single contract, shared by the Carnegie and Bethlehem companies, amounted to eight million dollars.

It is undeniable that Carnegie's profits were enormous. But it is also true that he gave more value than he received. He did more than any other individual to replace dear iron with cheap steel. The fact that we can buy as much steel for ten cents as our fathers bought for a dollar is mainly due to him and his partners. Carnegie did for the steel world what street-cars have done for transportation; what the ten-cent magazine has done for magazinedom; what the penny paper has done for the newspaper business. Carnegie did not overcharge his generation. This would be a story of billions, not millions, if it dealt with the amount saved by the buyers and users of steel.

THE ROMANCE OF STEEL

A MEDLEY OF OPPOSITES

Like all men of comprehensive natures, he was a medley of opposites, or seemed so to ordinary men. He made strong friends and some enemies. What has been written of him has been invariably biassed either by devotion or by dislike. Probably many incidents in his career can best be explained by the fact that he was sometimes the master of circumstances, and sometimes mastered by them.

Absurd charges of blundering have been made against him, as if a man could for a third of a century persistently blunder on into fame and fortune. For thirty-six years he remained unshaken in the control of his corporation, in the midst of plot and counterplot. For twenty-five years he remained the world's foremost steel-maker. Had he chosen to stay in business, and to carry on war against his competitors, he might to-day have been an industrial dictator.

"As an impelling force, and as a great leader in the iron trade in this country, Mr. Carnegie has been without a peer," said the editor of the *Iron Age*.

"His greatest power was his sublime faith in the future of steel," admitted one of his personal enemies.

"He had a never-failing confidence in the importance of the steel industry, and the keenest comprehension of trade conditions," said one of the highest officials of the United States Steel Corporation.

From the moment that he decided to make steel, he never wavered. No promise of honour or profit could separate him from steel. The position of United States Minister to Great Britain was offered him, and he refused it. Neither would he allow the use of his name in connection with any outside business enterprise, no matter what inducements were shown him. Years ago, for example, when William H. Vanderbilt died, a committee from a great trust company waited on Carnegie

WORKMEN-PARTNERS OF CARNEGIE

and announced that they had decided to elect him a director of the company in place of Vanderbilt. At that time Carnegie was comparatively young, and was not known outside of Pittsburgh; but, to the amazement of the committee, he declined the honour instead of being overcome with gratitude.

"What?" said they. "Don't you know that our directors' list is the most exclusive in the United States? Your name will have an Astor above it and a Vanderbilt below it. How can you question the soundness of such a company?"

"I don't doubt or question anything," replied Carnegie; "but you cannot use my name. It is not as big a name as the others, but it is my name, and I intend to take care of it. All my time must be given to my own business. You are welcome to my money, but you cannot have my name."

ANDREW CARNEGIE, THE AMERICAN

Like all normal men, Andrew Carnegie has been fond of approbation; but he has been quick to give praise to others. "Better than columns of flattery,"—he wrote at the end of an editorial which described his abilities in a discriminating way. "I have got credit for ten times more than I ever did," he said when the Bessemer medal was presented to him in 1904. On another occasion he suggested that an appropriate epitaph for himself would be: "Here lies one who knew how to get around him men who were cleverer than himself." Such an epitaph would be far from the truth; but there are in active service to-day many Carnegie-trained steel-makers who have no superiors in their various lines—such men as Frick, Corey, Schwab, Gayley, Scott, Hunt, Dinkey, Williams, and Morrison.

When the conditions of the steel trade in 1875 and in 1900 are compared, it will be seen that Carnegie did as much for steel as steel did for Carnegie. He was no maker of schemes

THE ROMANCE OF STEEL

and Wall Street bubbles. He built upon solid foundations. The men whom he trained will train others, and the steel-mills he built will stand for generations. To-day there is not a city in the United States, nor a street, nor a single home, which does not contain some of the fruits of this one man's life work.

Carnegie, such as he is in brain and pocket, is a finished product of the United States. Many bright Scottish boys have lived and died in Dunfermline; but there have been no other Carnegies. Such a career, whether we regard it with complacency or as a social menace, was possible only in this country and in the last generation. He was the ripe fruit of the tree.

When he was elected president of the British Iron and Steel Institute, in 1902, being the only American who has ever received the honour, the tears came to his eyes as he took the chair, and remembered that fifty-four years before he had left Great Britain as the child of a sad-hearted emigrant, who was driven by the hunger-wolf from his native land. He had very good reason, from his point of view, to laud the glories of "Triumphant Democracy."

In the multiplication of his capital Carnegie had done ten times better than his friend, Sir Henry Bessemer, whose large profits were the wonder of European steel-makers. In the first fourteen years of his steel-making in Sheffield, Bessemer and his partners had made eighty-one times their invested capital—a hundred per cent. every two months. But Carnegie, with three hundred thousand dollars invested in 1873, had in twenty-eight years cleared more than eight hundred times his capital. This was an average of three thousand per cent. a year, or a hundred per cent. every thirteen days. By 1894 he had become the richest man in Pittsburgh, displacing Charles Lockhart, a pillar of the Standard Oil Company, who had begun life there as a little Scottish laddie, earning fifteen cents a day in a grocery store. And in 1901 Carnegie was not only

WORKMEN-PARTNERS OF CARNEGIE

the possessor of unimaginable wealth, but also the world's most munificent philanthropist and a publicist of international reputation.

As for Henry Phipps, his climb from nothing to fifty millions is well illustrated in a story told by Frick. There was an old New England Yankee who lived in the village of West Overton, and who owned the biggest chicken farm in the county. One day Frick asked him how he came to lauch out in the chicken business.

"Well," said the old man, "it happened this way. When I was a young fellow, I was out of work for a while. So I went over to a neighbour's and borrowed a hen and a dozen fresh eggs. I set the hen on the eggs, and every one of them hatched. Then I waited till the hen had laid a dozen eggs. By this plan I was able to pay back what I had borrowed and have a dozen little chickens left for myself. I didn't invest a cent. All that my neighbour lost was the temporary use of a hatful of eggs that he never missed; and this big chicken farm is the result."

THE METHODS OF HENRY PHIPPS

Phipps, unlike Carnegie, had entered the iron business without the investment of a dollar of his own money. The eight hundred dollars which admitted him as a partner into the Kloman firm had been borrowed from Thomas N. Miller. When he was a youth of seventeen, Harry Phipps had spent twenty-five cents in advertising for a better job. An answer came from a firm of iron-dealers, and decided his career. But even this twenty-five cents had been borrowed from his brother, so that it may literally be said that he entered the path to fifty millions without the payment of a penny as an entrance fee.

Physically, Henry Phipps is even smaller than Andrew.

THE ROMANCE OF STEEL

Carnegie. He has almost as many millions as inches. Apparently, Carnegie had a preference for small men. In manner Phipps is soft-voiced, nervous, and as alert as a chamois. In mind he is cautious, shrewd, plodding, and acquisitive. Broken down by overwork, he had been forced into uncongenial idleness in 1888, but never allowed his grasp on the company to relax. In 1901 he was found to own eleven per cent. of the stock of the Carnegie company—nearly one-fifth as much as Carnegie, and nearly twice as much as Frick.

Mr. Phipps married Miss Annie Childs Shoffer, of Pittsburgh. They have now three sons and two daughters. On his retirement, in 1888, he showed no desire to escape the smoke and grime of Pittsburgh, but built a palatial home in Allegheny, which contained many original features. In the dining-room, for instance, were five large stained-glass windows, gorgeously coloured and each with a painted likeness of one of his children. When the children grew older and developed social ambitions, Mr. Phipps reluctantly left the scene of his childhood and his labours, and has since divided his time between New York and the Scottish Highlands, where he rents Beaufort Castle from Lord Lovat. Recently his daughters have been married—Miss Helen Phipps to Bradley Martin, Jr., and Miss Amy Phipps to the Hon. Frederick Guest, second son of Lord Wimborne. And so the long steel ladders built in Pittsburgh reach in one generation from Barefoot Square, Slabtown, to Beaufort and Skibo Castle—from the cottages of American workingmen to some of the greatest ancestral palaces of Europe.

CHAPTER VI

THE HARVEST OF GOLD

The Quarrel Between Carnegie and Frick—The Negotiations which Led to Carnegie's Declaration of War against His Competitors and the Deal by which He and His Partners Were Bought Out and the United States Steel Corporation Was Organised—What the Carnegie Partners Did with Their Millions in the First Flush of Fortune.

IN 1899 came the great quarrel of the Carnegie Steel Company. Carnegie collided with Frick—the irresistible against the immovable. The tragedy of the quarrel was the separation of Carnegie and Phipps, who had been the closest friends for over fifty years. And its importance to the general public lay in the fact that in the struggle the lid was knocked off the treasury, allowing the outside world to discover for the first time the immense profits of the steel business.

The immediate cause of the quarrel matters little, as it became inevitable. Carnegie and Frick were incompatible, both in mind and temperament. The wonder is that they agreed for thirteen years. Carnegie represented one school of steel-makers; Frick represented another. Carnegie stood for the patriarchal system of industry—for one-man power and the promotion of those only who proved loyal and obedient. Frick stood for the corporation system of industry—for the rule of the directors—for the building up of an industrial system which should be interdependent and not competitive—for the socialisation of commerce.

For a time mighty steel kings called each other names like

THE ROMANCE OF STEEL

a couple of schoolboys. "You did." "I didn't." "You got mad first." "You pushed me in the hole." "Well, it was you that dug the hole." And so the quarrel went on, to the delight and enlightenment of the world at large. The newspapers were turning their searchlights upon golden Pittsburgh. The Carnegie Building was besieged by reporters. While this publicity eventually proved worth a hundred millions to Carnegie, he saw nothing but danger and annoyance in it at the time, and a secret peace conference was arranged at Atlantic City. James B. Dill, a famous corporation lawyer, was called in and a decision was reached which brought the quarrel to an end.

The company was reorganised and capitalised at three hundred and twenty million dollars, half stock and half bonds. Frick was still a shareholder, though not a director, and held thirty-one million dollars' worth of stock and bonds. For arranging this settlement, Mr. Dill received a fee of a million dollars—the largest ever paid for legal services.

Henry Clay Frick became at once one of the central figures of the iron and steel world. He was no longer "Carnegie's man Frick." He was a new and powerful factor in commercial affairs. He was not an expert on steel, or coal, or any other one thing. His power lay in the possession of a co-ordinating mind of wonderful efficiency. Under his personal management the Carnegie company had been developed into the most automatic and most profitable corporation ever organised, and he was now only fifty years of age. For him to enjoy his thirty-one millions in idleness was out of the question. Business was his recreation—his game—his life. "To pour work on Mr. Frick is like pouring water on a duck's back," said S. L. Schoonmaker, one of his most intimate friends. Henceforth he would emerge from the smoke of Pittsburgh and carry on his work in the national arena.

Mr. Frick has been well called "the perfected type of the



S. L. SCHOONMAKER



THE HARVEST OF GOLD

modern business man." But he is much more. He is the fore-runner of a much better business system than the present. He has the commercial virtues that make a man wealthy to-day. He is a shrewd bargainer. When he sells, he looks at the property through the small end of the telescope; when he buys, through the big end. He is firm, alert, able, progressive. But he is also one of the most distinguished members of the new school of capitalists who believe in a "community of interests." He is one who advocates "team play," not individual prestige. He is a business architect upon a larger plan than that followed by the earlier steel-makers. He is not a disintegrator of business. His effort, both in the coke and steel industries, has been not to ruin competitors, but to eliminate the wastefulness of competition and to make terms upon which all could do a secure and profitable trade.

Mr. Frick looks far ahead. He knows the significance of his work, although his own generation may not. "Gradually the whole fabric of American industry," he says, "has grown into a solid structure of intersupporting relationships. One blunder by one man cannot to-day block the wheels of progress or bring ruin to thousands. It is a movement from feebleness to strength. We are creating a large, orderly system of industry and finance, which will give courage and security to our business men, and better conditions to workmen. There will be less waste and warfare. Brains, energy, and character will be more likely to find their true level. No important business will be left to stand alone. Instead of looking upon this industrial evolution with alarm, we should rather welcome it as sound and helpful to the whole human race."

THE MOLTKE OF AMERICAN FINANCE

It is the general belief that Frick could not have begun at the foot of the steel ladder, as Carnegie did. Neither could he

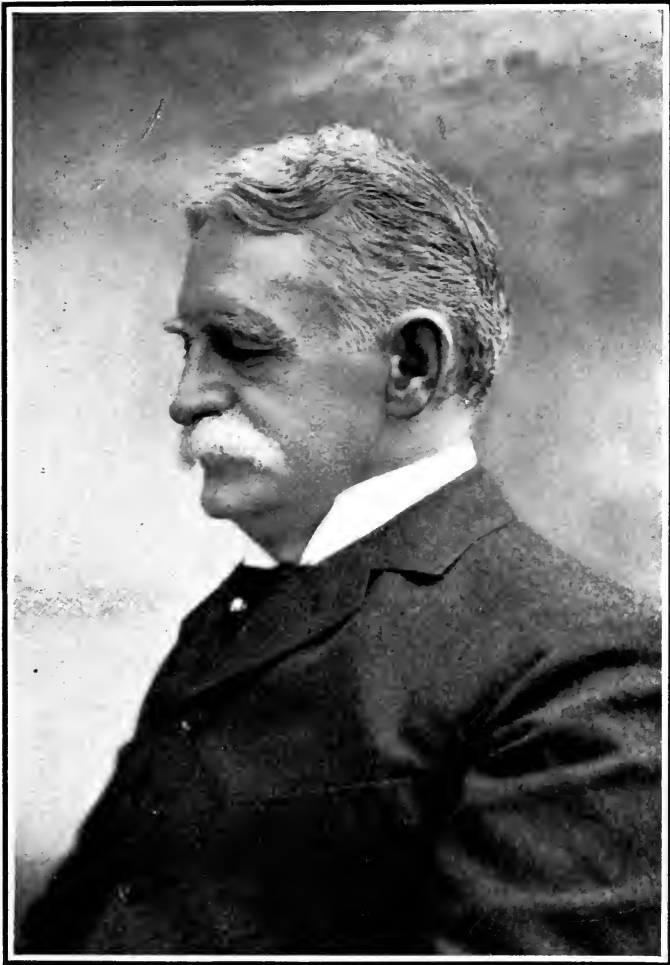
THE ROMANCE OF STEEL

have chosen men as wisely and attached them to himself with the fine leadership of the Scot. But, on the other hand, Frick was far superior to all his fellow steel kings in grasping the newer idea of consolidation and corporate interdependence. Carnegie played checkers; Frick played chess. Carnegie was absolutely a man of one corporation; Frick has innumerable interests. Carnegie built up an industrial feudalism, in which all power sloped from the chief downward to every member of his tribe. Frick believes in the socialisation of capital for the benefit of the private capitalists.

“Carnegie was a Napoleon; Frick is a Von Moltke,” said a Pittsburgher who has known both men for more than twenty years. Like Napoleon, Carnegie won his victories through an army that was quick, loyal, and enthusiastic. Like Von Moltke, Frick won by following out vast plans that cut off all possibility of mishap or accident. Carnegie fully trusted only those whom he had promoted from the rank and file. Frick, on the contrary, prefers to co-operate with his equals. In Pittsburgh, Frick’s best comrade in finance is A. W. Mellon, the most astute and independent capitalist in western Pennsylvania. Frick is a director in eight Pittsburgh corporations; his secretary, William A. Carr, is a director in eight others; and the Mellons sit at the board of eighty-two. In New York, Frick is the close associate of H. H. Rogers, the master-mind of the active Standard Oil group of financiers. Taking him all in all, it would be hard to find a more central or pivotal figure than Henry Clay Frick in the whole field of American finance.

THE PERSONALITY OF H. C. FRICK

Keen, self-possessed, approachable, courteous, Mr. Frick might more appropriately be called the perfected type of the self-made American. He is no uncut diamond, as many steel-makers are. He has the greater and the lesser virtues. When,



HENRY H. ROGERS



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE HARVEST OF GOLD

during the Homestead strike, a Russian anarchist broke into his office and inflicted serious wounds upon him with pistol and dagger, his first words were, "Don't kill him," as he rose bleeding from the floor.

Yet to the possession of this rare physical courage he adds the tenderest sentiment. His devotion to flowers, to music, to paintings, and, above all, to his two children, Childs and Helen, is well known in Pittsburgh. Childs, a slim young man of twenty-four, is crown prince of the Frick dynasty, and Helen, a young lady of eighteen, will be the wealthiest heiress born in the Smoky City. Mr. Frick has had a special check-book made, which he uses for all charitable purposes; and upon every check is a picture of his daughter's face. His private art gallery is one of the finest in the United States. In it are master-works by Corot, Romney, Murillo, Lawrence, Millet, Gainsborough, Turner, and Rousseau. It was Mr. Frick who paid one hundred thousand dollars for Dagnan-Bouveret's "Christ at Emmaus." Even in his inner business office at Pittsburgh a magnificent oil painting of tigers hunting their prey hangs on the wall.

Because Mr. Frick's "Yes" is "Yes," and his "No" is "No," he has been popularly characterised as a capitalistic Bismarck—a man who is steel by trade and steel by nature. During the five months of the Homestead strike, all the forces of the labour and Republican worlds surged and broke around him like waves upon a rock. "If the President of the United States, and his entire Cabinet, and the Republican National Committee, and Andrew Carnegie in person, should all come to me and sue for peace, I would not yield one inch," he said as he lay wounded upon his couch. "I shall fight it out if it takes all summer and all winter and every dollar I have in the world." Yet it was the same Frick, afterward, who took pity upon two of the leaders of the Homestead strikers, and paid for the education of their three children. This was not

THE ROMANCE OF STEEL

'done ostentatiously, but so quietly that most Pittsburghers will learn of it here for the first time.

FRICK'S ATTITUDE TOWARD CARNEGIE

In speaking of Carnegie, who has been his best friend and his worst enemy, he displays no feeling. "I have no prejudice against Mr. Carnegie," he answered quietly, when he was asked about the Scottish steel-master; "but I do not approve of his methods of doing business." His reply to Carnegie's attack upon him, so say Pittsburghers, was made not with words, but with the erection of the Frick Building. This masterpiece among skyscrapers, built wholly of steel and white marble, and with a thousand rooms, half encircles the Carnegie Building and towers a hundred feet above it.

Another instance of the poise and balance of Mr. Frick's mind is shown in his support of Kingsley House—a university settlement in Pittsburgh. Although he is usually regarded as a matter-of-fact financier, without social ideals or visions of a co-operative commonwealth, he is a warm personal friend and backer of Dean Hodges, the Christian socialist, who founded Kingsley House.

Being the most self-contained man in Pittsburgh, Mr. Frick has commonly been alluded to as a human machine—a money-making sphinx. But his intimate friends say otherwise. He dislikes society functions and publicity, not because he is in any degree misanthropic, but because of an instinctive hatred of all veneer and make-believe. He feels at home only among realities. Whatever his ambitions may be, his unusual talents will inevitably make him the arbitrator and harmoniser of American business and finance. No one is better suited than he to become the umpire of the whole game. His mind is judicial in the highest degree.

"Frick is naturally an arbiter," says his friend Lovejoy.

THE HARVEST OF GOLD

"I've often heard him say, after he had decided a dispute, 'I wish I could have decided that the other way, but I couldn't do it.'" In the Senatorial contest of two years ago, in Pittsburgh, it was Frick who was called in to make the decision and who seated P. C. Knox in the United States Senate. In the more recent controversies over the management of the great New York insurance companies, it was Frick who came to the front as an impartial investigator, and who demanded the reform of the abuses which he helped to bring to light. He may perhaps be called the unofficial head of the United States Steel Corporation, and every year adds to the scope of his influence. For the pomp and pageantry of power he cares absolutely nothing; but for the power itself and its heaviest responsibilities, no man is more willing or better prepared than Henry Clay Frick.

But, to move on into the main current of the story, at the time of the Frick-Carnegie suit the whole swing of industrial evolution was toward consolidation. Ore pools, pig-iron pools, and steel-rail pools had shown the financial benefits of co-operation. When the Lackawanna works broke up the rail pool in 1897, the price of rails dropped in a moment from twenty-seven to seventeen dollars, and compelled the rail-makers to come together again in a hurry. "McKinley prosperity" was at its height. Capital was plentiful. There was a general demand for stock in industrial corporations, and to meet the demand New Jersey was manufacturing "trusts" by the score. Little concerns were huddling together for protection. It was a time of big ideas and big undertakings.

Ever since 1889 it had been known that Carnegie was willing to sell, as at that time he had unsuccessfully tried to persuade a syndicate of English investors to buy him out. In 1899, just before the Frick-Carnegie suit, Judge William H. Moore, one of Chicago's most daring and adventuresome

THE ROMANCE OF STEEL

knights errant of finance, had crashed into the story of steel by trying to do what Mr. Morgan accomplished two years later. For years Judge Moore and his brother had been able corporation lawyers, with stock-market inclinations. They had recently come to the front as company promoters on a gigantic scale. With cheerful indifference they had made and lost millions. Having promoted the Diamond Match Company, they went down with it when it foundered, losing four millions or more. In a single year, by floating the National Biscuit Company and the American Tin Plate Company, they paid their debts and had millions left.

Had they been the owners of Aladdin's lamp, they could not have transformed defeat into victory more magically. With ten millions of American Tin Plate common stock in their possession—their first steel money—they set out to make more steel conquests. In a year they had organised the American Steel Hoop and the National Steel companies, getting five millions apiece for the work. Then, elated with success, they rushed to Carnegie and offered him a million for a ninety days' option on his share of the Carnegie company.

"Get my partners, Phipps and Frick, to join you in this proposition, and I will consent," said Carnegie. The price was fixed at \$157,950,000, more than one-third of which was to be paid in cash. Phipps and Frick were willing, so Carnegie increased the price of the option to \$1,170,000, and received a check for this amount.

When the agreement was signed, there was every reason to believe that the steel king had abdicated his throne. Frick, Phipps, and the Moores constituted a powerful combination. The problem was to get sixty millions or so in cash, and the work was done. But at that time few New York or Chicago financiers knew the value of Pittsburgh. The J. P. Morgan interests refused to go into the scheme on any terms. Then,

THE HARVEST OF GOLD

like a thunderbolt from a blue sky, came the announcement of the death of Roswell P. Flower, one of the "bull" leaders of the New York Stock Exchange. Stocks tumbled and money was suddenly pulled up out of reach. The panic was over in a few days, but the business situation was changed. Frick and Phipps dashed over to Skibo Castle and pleaded for more time. "Not a day longer," replied Carnegie. He retained not only the million dollars given him by the Moore brothers, but also the one hundred and seventy thousand dollars advanced by his two partners. It was the easiest million that he had ever made.

ROCKEFELLER THINKS OF BUYING

The next would-be buyer was John D. Rockefeller. He had captured ore lands and an ore railway in Minnesota, built a fleet of ore vessels, and invested money in the Federal Steel Company. Now he asked Carnegie to make his price for the Carnegie Steel and Frick Coke companies. "Two hundred and fifty millions, half in cash and half in five per cent. gold bonds," replied Carnegie. Mr. Rockefeller shook his head. He had expected to pay a large part of the price in stock. It was not so easy, he found, to bargain with Carnegie as it had been with Lon Merritt and his brothers, six years before.

No man ever recognised a business opportunity with more electrical swiftness than Andrew Carnegie. Here was "Standard Oil" coming to him with hundreds of millions in its hands. Suddenly he realised that, so far as the iron and steel business was concerned, these men were in his power. He was the steel king, and Messrs. Rockefeller, Morgan, and the rest had become lesser chieftains of the steel empire, regarding him with apprehension and alarm. This was a pleasant thought, and a profitable one. One week after

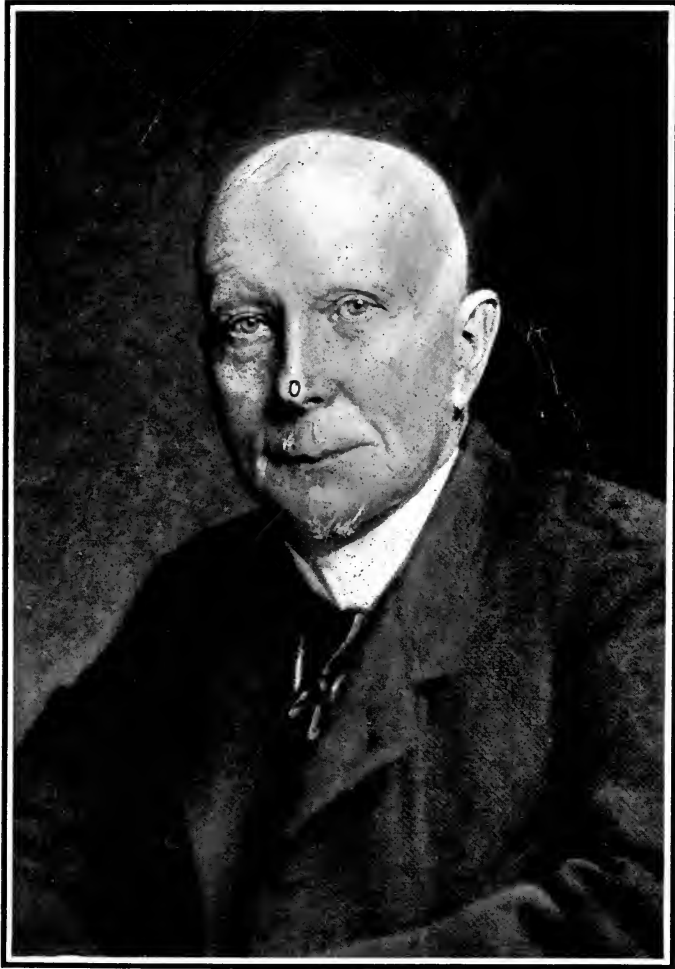
THE ROMANCE OF STEEL

it had occurred to him, he had jumped his price up to three hundred millions.

The suggestion had been made that the four senior partners should sell out to the younger men, and seven days after the Rockefeller offer Carnegie proposed that the younger partners should pay three hundred millions for the entire property, half in gold bonds and half in stock. This offer was discussed but not accepted. The young partners missed the greatest opportunity of their lives. If they had possessed the business ability of their chief, they might have cleared over a hundred and fifty millions in the next two years. Dame Fortune hammered loudly on their door, but they thought that her name was Risk, and so they sat and debated until she went away.

Every day Mr. Carnegie's vision of millions grew more radiant. His brain whirled with the details of a selling campaign, the like of which had never been known before. In Wall Street language, he became a Carnegie Steel Company "bull"—a furious, rampant, untamable "bull." Million was piled on million. The twenty-five millions for which the company had been capitalised seven years before seemed to him now a mere handful of nickels. The more he figured, the more he blended in the future with the present. Soon the three hundred millions became four hundred. "I favour holding on for two or three years," he wrote to his partners. "There is no question but we can sell our property for four hundred million dollars."

In 1889 Carnegie had retired from active business, saying that "no consideration in the world would induce me to return to it." But now he flung aside his books and fishing-tackle, came down from his Scottish hills, and began to "bull the market" in earnest. He set on foot a series of operations which, if concluded, would have driven his competitors out of business and made him the absolute dictator of the steel



JOHN D. ROCKEFELLER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE HARVEST OF GOLD

world. It was "war to the knife and the knife to the hilt." Never before had a multimillionaire run amuck with such force and fury. "Henceforth I will have only one profit from the ore to the finished product," he said.

To fight Rockefeller, he ordered seven eight-thousand-ton ore-carrying steamships. To fight the Pennsylvania Railroad, he set a corps of surveyors at work mapping out a railway from Pittsburgh to the ocean. To fight the National Tube Company, he announced that five thousand acres of land had been bought at Conneaut, and that he had decided to build a twelve-million-dollar tube works. To fight the American Steel and Wire Company, a new rod-mill was to be erected near Pittsburgh. And to fight all other steel companies, he proclaimed that ten million dollars were to be spent at once in improvements which would put his mills beyond the reach of competition.

These were not mere threats. He had the men and the money and the mills. His personal profits in 1900 amounted to nearly twenty-five millions. He was making one-quarter of all the Bessemer steel in the United States. He was producing three million tons of pig iron a year. He was mining twenty-eight per cent. of the ore in America, and producing half of the structural steel and armour-plate. His freight bill was ten millions—his pay-roll was fifteen. He was making open-hearth steel for sixty per cent. less than his competitors, and rails for four dollars a ton less than they cost in Chicago. He was selling his steel in England for ten shillings per ton less than English prices. No other plant in Europe or America was so well equipped or so well managed as his. And he was only sixty-five—twenty years younger than his friend Gladstone had been when presiding over the destinies of the British Empire.

"GREAT STEEL WAR," shrieked the newspapers. If Carnegie would actually go so far as to give open battle to the

THE ROMANCE OF STEEL

Pennsylvania Railroad, where would he stop? All Pittsburgh, all Pennsylvania, blustered and cowered before this mighty corporation. No one had ever dared to throw down the gauntlet to Cassatt—the monarch of an eleven-thousand-mile empire. “If Carnegie begins to make tubes,” said hundreds of frightened manufacturers, “he may decide later to make axes, ploughs, machinery. He may wipe us all out with this new policy.”

To a large extent his declaration of war was a measure of self-defence. The Moore and Morgan and Rockefeller steel interests were combining in such a way as to cut off trade from the Carnegie company. They were encroaching upon his territory. “A nation should never make war except to repel invaders,” he had said on a public occasion. But here was an invasion of his market by the most formidable group of financiers in the country. His supremacy was in danger, and with “Scots wha hae” pluck he at once charged headlong upon the enemy.

The threat of competition had always been one of his favourite weapons. When the prices of the Frick Coke Company were not low enough to suit him he threatened to buy twenty thousand acres of coal land and build coke ovens of his own. When the Dilworth-Porter Spike Company withdrew its trade, he brought it back by threatening to build a spike-mill. The pressed-steel car people were kept in line by a similar warning; and a number of other customers were influenced by fear as well as favour. And now, finding himself facing the largest hostile force that he had ever encountered, he rallied his clansmen and, with the valour and the spirit of his fighting ancestors, prepared to give battle all along the line. It was one of the most critical moments in American industrial history.

THE HARVEST OF GOLD

CARNEGIE'S EFFECTIVE GENERALSHIP

When Carnegie struck, the blow fell with such swiftness and force that the enemy was thrown into confusion. There was a panic among millionaires. They found themselves attacked, not only in front, but on all sides. From every quarter they could hear the wild screeching of the bagpipes. Rumours, which spring from fear as often as from hope, added to the general consternation. It was said that Carnegie had made a fighting alliance with the Alabama iron and steel companies. A mysterious cablegram from Europe was flung like a bomb, announcing that a vast international steel combination was about to be formed. Francis H. Clergue, with his French eloquence, was foretelling a glorious future for his prospective twenty-million-dollar steel plant at the Canadian Sault Ste. Marie. And a body of British investors was stimulating curiosity by making a tour of inquiry among American iron and steel works.

The immense profits in steel were now well known even to the general public. What with lawsuits and Congressional committees and political "Tin Plate" campaigns, it was the common opinion that every steel works inevitably produced an output of millionaires. Before the eyes of the steel men lay the Promised Land of Profits, but defended at every point by the warlike Carnegie and his veteran army of Philistines. Carnegie was a hardened warrior of thirty-five years' experience. He knew every foot of the ground, while most of his competitors were strangers. In the first clash they recognised at once his skill and generalship. They were playing his game, not theirs, and his swift moves transformed them into a rabble.

"We must get rid of Carnegie. At all costs, we must buy him out. Otherwise, he will wreck himself and us. We can make no alliance with this 'rule or ruin' autocrat. We must

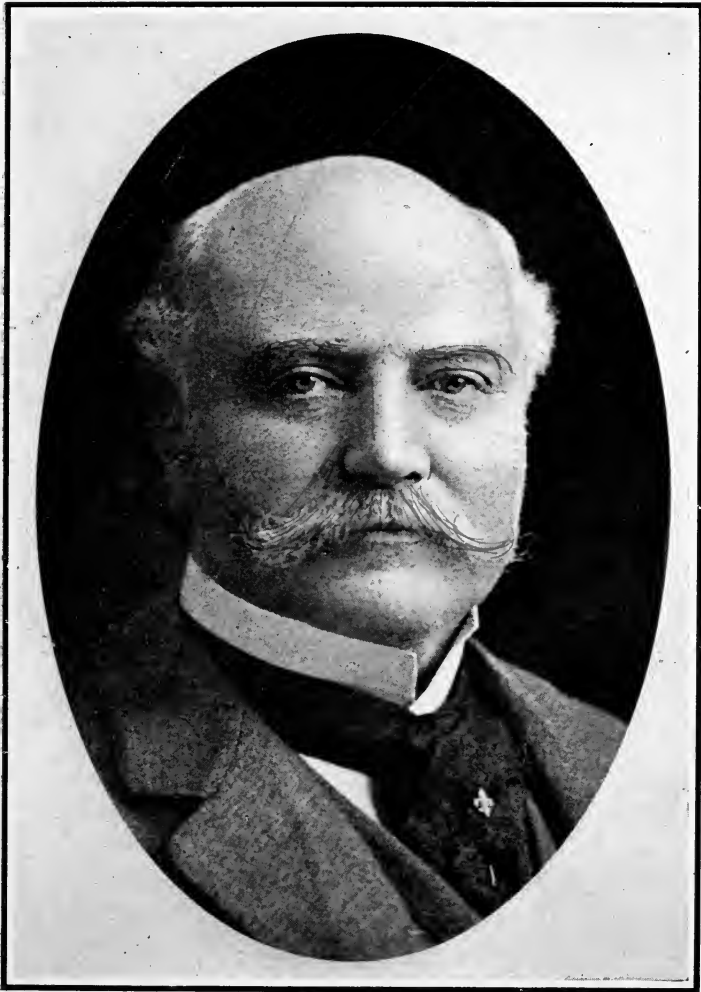
THE ROMANCE OF STEEL

push him out into philanthropy and book-publishing. Where is Morgan? No one but Morgan can get us out of this fix?" And the frantic financiers rushed to Morgan as frightened children run to their mother, clamouring in their alarm for help, for guidance, for protection. Such were the birth-throes of the world's greatest corporation.

Carnegie, Phipps, and Lauder had always been opposed, in theory at least, to the formation of a steel "trust." In 1884 Carnegie had said: "We are creatures of the tariff, and if ever the steel manufacturers here attempt to control, or to have any general understanding among them, the tariff would not exist one session of Congress. There never has been and never will be such an understanding." Five years later Phipps wrote to Carnegie: "I am gratified that we are not to go out of business, and especially to make room for a trust, which is by no means a creditable thing. As you say, the tariff would be repealed on rails, and rightly so." Lauder described the situation to me with perfect frankness, saying: "We certainly had our trade agreements, pools, and so forth in those days; but they were always made more or less secretly. Public opinion was then strongly in favour of competition, and we could not form combinations openly, as we do to-day."

SCHWAB'S PERSUASIVE ADVOCACY

Frick was at all times in favour of combination; and as for Schwab, he was first on one side and then on the other. "A big business enterprise," he said, "is invariably built up around one man." Soon afterward, however, he became convinced that Carnegie was about to plunge the country into a disastrous war of corporations, and from that moment he was the most persuasive advocate of consolidation. At a banquet given in his honour, at the University Club, New York, he painted so eloquent a word picture of the benefits of



LORD A. J. F. LEITH



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE HARVEST OF GOLD

industrial peace as plainly to impress Mr. Morgan and the other financiers who were present.

A few days afterwards, John W. Gates and Schwab, who had been talking of a steel consolidation, off and on, for three years, went to see Morgan. They arrived at his house at nine o'clock at night, and they discussed the situation until five o'clock the next morning. It was an eight-hour talk, but it was worth while. Morgan was shown the big possibilities of the steel business, and persuaded to act. Dawn and decision arrived together, and he finally told Schwab to go to Carnegie and ask "How much?"

Schwab went to Carnegie and the two figured out a price which was far beyond their most optimistic dreams. All past estimates were wiped out. The one towering fact which they kept before them was that their company had cleared forty millions during the last year. They were not selling so much steel, and brick, and machinery. They were selling a money-making mechanism, which had taken thirty-six years to construct. And so, in the letter which Schwab carried back to Morgan, were the following figures:

Five-per-cent. gold bonds.....	\$304,000,000
Preferred stock	98,277,120
Common stock	90,279,040

Taking the preferred stock at par and the common at fifty, this meant a cash price of \$447,416,640. Add to this the forty millions of profit for the year, and the total was \$487,416,640—*nearly half a billion.*

HOW THE GREAT SALE WAS PUT THROUGH

To ask such a price seemed the climax of audacity. It was almost a two-hundredth part of the national wealth. It was the value of all the wheat, barley, and cheese produced in the United States in 1900—more than the combined dividends of

THE ROMANCE OF STEEL

all American railroads for the previous four years. It would pay the President's salary for nine thousand years. It was more than a year's product of gold, silver, and coal. In Germany it would build ten enormous steel-plants like Krupp's—the pride of Europe. And for this huge sum Carnegie offered, not an empire, not a State, but a single corporation with forty-five thousand employees. It was like capitalising every man in his employ at ten thousand dollars apiece.

Mr. Morgan first called in Judge Gary, with whom he had been previously connected in steel corporations. Gary was in favour of a merger, and the bigger the better. Then came Frick, and after him a small-sized mob of financiers. Schwab set forth the strong points of the Carnegie company in the rosiest hues, piled fact on fact and figure on figure, glossed over sundry debts and disadvantages, and in a remarkably short time persuaded his customers to pay his price. By this achievement he became the champion salesman of the world.

Fortunately for him, he was dealing with Morgan, who is, according to one of the directors of the Steel Trust, "careless and a poor bargainer." To one who dealt in nothing but millions, what were a few dozen more or less? Also, fortunately for him, the cry of the other steel-makers was ringing in Morgan's ears—"At any cost, buy out Carnegie." Gangs of men were already at work clearing the ground for the proposed twelve-million-dollar tube works at Conneaut, with which Carnegie would bankrupt all competitors. The money had already been subscribed for the Carnegie railroad from Pittsburgh to the sea. Everything had certainly been done to create a "selling atmosphere." The men whom Carnegie was threatening saw that it was a case of being merged or submerged, and practically allowed Schwab to dictate the terms of industrial peace. They bought out Carnegie at his own price.

THE HARVEST OF GOLD

THE CAMPAIGN OF THE BUYERS

This account of the Steel Trust's birth is, of course, from the standpoint of the Carnegie company. Another account, from the side of the venturesome financiers who did the buying, ought to be given at this point. We have traced the progress of the selling campaign, which resulted successfully. And now, in the next few paragraphs, we shall see how the buying campaign began.

A couple of years before this time, some of the directors of the Illinois Steel Company had caught the spirit of consolidation. The first suggestion of anything practical came from A. J. Forbes Leith, who owned an interest in an ore-carrying railroad near Chicago. He proposed that the Illinois Steel Company should buy this railroad. Then some one else proposed that the Minnesota Iron Company, which was rich in ore and ore-ships, should be taken into the family. A committee was formed to arrange a plan of consolidation. Its members were Elbert H. Gary, Senator Spooner, Robert Bacon, and the late ex-Governor Flower, of New York. The longer they talked over the scheme, the better it seemed. The final result was the organising of the Federal Steel Company, Gary and Bacon having done most of the work, and H. H. Rogers having fixed the basis of consolidation.

So far as steel-mills were concerned, the Federal Steel Company could not compare with the Carnegie company. But so far as its ore, its ships, its railroads, and its backers were concerned, it was one of the most powerful corporations in the world. Among its directors were J. Pierpont Morgan, H. H. Rogers, D. O. Mills, Marshall Field, Norman B. Ream, Nathaniel Thayer, ex-Governor Flower, and H. H. Porter. Its president was Elbert H. Gary, who is now at the head of the Steel Trust.

On April 1, 1899, Frick came to Gary with a scheme to

THE ROMANCE OF STEEL

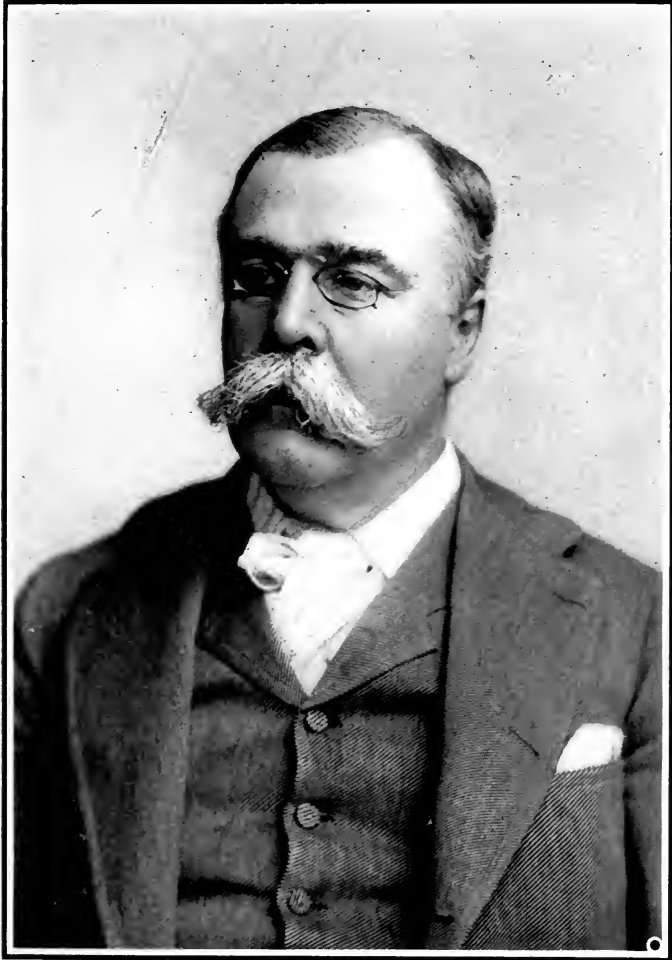
consolidate seven or eight big steel companies, whose total capital was nearly four hundred millions. Gary approved it, but the Federal Steel Company did not. "Too big," said H. H. Rogers. "Too big," said Morgan. "Too big," echoed the others. Then, a few days later, Schwab came in with a rush and swept back the doubters.

"My arguments," said Schwab, "were mainly four—the economies that would result from consolidation, the improvement of the general business situation, the benefit to labour, and the steadying of the steel trade." One by one the big financiers were convinced. Morgan called in Robert Bacon, Marshall Field, Elbert H. Gary, Norman B. Ream, H. H. Porter, D. O. Mills, and H. H. Rogers. After two or three hours' earnest talk they said "Yes." And so the greatest of all industrial organisations was set on foot with less fuss and palaver than might be required to make a horse trade between two farmers.

CAPITAL MEETS THE ISSUE

Gary was set to work opening up negotiations. D. G. Reid was brought in, and he, in turn, persuaded Judge Moore to join the group. Moore had lost a million a short time before, trying to do this very thing; but he was game enough to try again. Francis Lynde Stetson was called in, to give legal advice. Frick was sent to bag John D. Rockefeller, and succeeded. The John W. Gates group and the Moores made the most trouble, by holding out for a high price; but they were finally satisfied. To George W. Perkins was assigned the task of putting on the finishing touches, and the immense corporation was ready to be launched.

In the next chapter we shall describe the details and the scope of this greatest of all business transactions. Here the important facts are the passing of Carnegie from the field



H. H. PORTER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE HARVEST OF GOLD

and the sudden enrichment of him and his partners. The Carnegie company had burst into the Golden Age, with a suddenness which amazed and dumbfounded its fortunate shareholders. The young Scotsman who had entered the iron business with sixty-five hundred dollars came out of it a grizzled veteran—the richest private citizen of leisure in the world.

He was a lonely little figure among his heaps of gold bonds. Almost all his early friends and partners were dead. He was the only surviving member of his family. Even his brother, the easy-going Tom, had died fifteen years before. Against Frick and Phipps his heart was as hard as his own armour-plate. His fellow steel-makers had come to regard him as a “disturber of the peace.” He was an individualist—a survivor of the titanic period, when great steel barons, like Scottish chiefs, rallied their men and waged war upon one another. It was impossible for him to get the new “community of interest,” idea, which was dominating the iron and steel world. He was the “last of the barons,” and the most influential of them all.

THE SHOWER OF GOLD

As for Carnegie's forty young partners, many of them were for a time money-mad. A few have never recovered. Their good fortune came to them as suddenly as a flash of beneficent lightning. They did not climb to the golden heights. They were hurled there. Gasping with amazement, they were flung into the possession of boundless wealth. Just how it happened several of them have never yet been able to understand. All they know is that by some mysterious stroke of Carnegian magic two hundred million dollars came legally into their possession.

A few days afterward, one of these young partners, slightly intoxicated, was seen in one of the parlours of the Duquesne

THE ROMANCE OF STEEL

Club, earnestly making calculations upon a sheet of paper, "What are you trying to do, Mr. Blank?" asked one of the club members. "Why," replied the newly made Cræsus, "I'm trying to see whether I'm worth seven millions or ten millions, and how in the deuce I got it." This incident shows exactly the predicament of at least thirty-five out of the forty, after the selling of the Carnegie company.

Seven of the partners immediately set sail, with their wives and families, for Europe. They were Carnegie, Frick, Lander, Morrison, Phipps, Oliver, and Singer. Another, who had spent his whole life in a steel-mill, started upon a tour of the world, got as far as New York, became homesick, and returned to Pittsburgh.

THE PROFITS OF HENRY W. OLIVER

Henry W. Oliver, who had, like Carnegie, begun a business life as a messenger boy, said to a friend: "I cleared up thirteen million dollars in that whole Carnegie deal." For forty years his estate will draw four hundred thousand dollars a year from the United States Steel Corporation, as payment for the Oliver ore mines. Having succeeded as a money-maker, Oliver, who was wholly unfitted for a life of leisure, developed two new ambitions—first, to become the Astor of Pittsburgh, and, second, to succeed Quay as United States Senator from Pennsylvania. At the time of his death, in 1904, he owned twelve million dollars' worth of land and buildings in the down-town section of Pittsburgh. He was also the possessor of four of the city's daily papers, and a powerful factor in State politics. And so the man who had been called "flighty" and "unsafe" brought his ship safe into the golden harbour in the end, after passing through a few shipwrecks and many an exciting adventure. He took a grim pleasure, in the last few years of his life, in the changing opinion entertained of him by the "solid men" of Pittsburgh.

THE HARVEST OF GOLD

"I used to have to run after those big guns," he said to a friend; "but now they're all coming after me."

Alexander R. Peacock was one of those who were swept off their feet by the sudden flood of gold. Henceforth, for him nothing was too costly. He hunted up his poor friends and paid their debts. Naturally open-handed, he now spent money with the abandon of an emperor, and became one of the most picturesque figures in Pittsburgh. On one occasion he was in San Francisco and was suddenly wired to come East. Hiring a "Peacock Special," he dashed from the Pacific Coast to Chicago in fifty-seven hours and fifty-six minutes—a record that was not broken until last year, when Walter Scott's "Death Valley Special" is said to have run the twenty-three hundred miles in forty-three hours.

Mr. Peacock built a dazzling, showy mansion on Highland Avenue, Pittsburgh. Encircling the spacious grounds of Rowanlea is a nine-foot iron fence, entered through massive gates that roll inward on wheels. An iron lion stands threateningly upon each gate-post. White marble columns, alternately round and square, and palm trees growing in immense urns, stand about the doorway. Within, the rooms resemble a series of magnificent halls, decorated with oriental lavishness. It is the dream of a poor young linen clerk come true. Mrs. Peacock is constantly putting Rowanlea to hospitable uses, often for charitable purposes. One Schumann-Heink matinée, given for the benefit of a hospital, gleaned no less than six thousand dollars from Pittsburgh's affluent "Four Hundred."

MEN WHO TOOK FORTUNE CALMLY

Next to Rowanlea, at the entrance to Highland Park, stands the red sandstone palace of Thomas Morrison, who had begun his swift career as a swarthy workman at Homestead. Morrison is one who took his good fortune quietly, and allowed it to interfere very little with his industrious and simple

THE ROMANCE OF STEEL

habits. He is a typical Pittsburgh multimillionaire, who loves the work as much as the profit. Mr. Lovejoy, on the contrary, after building a million-dollar home and the finest garage in Pennsylvania, suddenly left Pittsburgh and settled in Denver, investing a large fraction of his wealth in gold mining—"the cleanest business in the world," as he tells his friends. His first business venture, after receiving his share of the steel millions, was the erection of the largest apartment house in western Pennsylvania. It was built in too costly a fashion to be a financial success, as Pittsburghers have not yet acquired the New York habit of living by hundreds under one roof. Mr. Lovejoy is still as simple and unaffected as in the days when he drifted up and down the oil regions, a moneyless wage-worker.

Other Carnegie partners who are seldom seen in the city where their money was made are H. C. Frick, Charles M. Schwab, James Gayley, Henry Phipps, W. E. Corey, J. G. A. Leishman, and S. L. Schoonmaker. Mrs. Thomas M. Carnegie, who drew \$6,198,500 out of the grab-bag, has practically deserted the Steel City, and divides the year between her estate at Raquette Lake, in the Adirondacks, and an island home off the Florida coast. The Carnegie Building, in Pittsburgh, belongs to her, but is leased to the Carnegie Steel Company for a hundred years, at a rental of five per cent. of its cost. Leishman, who forfeited millions by becoming a consul-general, at seven thousand five hundred dollars a year, had to be content with a pittance of about four hundred and fifty thousand dollars. A Pittsburgher who visited the Leishman residence in Berne, told when he returned of the liveried servant behind each plate, and the general tone of affluent elegance in the home of the ex-steel-maker, who began life as a barefooted orphan boy in the murky city of self-help. Miss Leishman, it is well known, became several years ago the Comtesse de Gontaut-Biron.



FRANCIS LYNDE STETSON



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE HARVEST OF GOLD

HOW THE MONEY WAS INVESTED

Several of the Carnegie men, with less confidence in the future of steel than their chief, promptly sold their stock and bought real estate, or invested it in banks and trust companies. The steel stock, on the other hand, was greedily taken by Pittsburghers, who seized their first opportunity to become sharers of the Carnegie profits. Generally speaking, the buyers were not iron and steel men, as it was the current belief among them that Morgan had paid an absurdly large price for the plants. And so there was a sudden readjustment of capital, which brought happy days to the Pittsburgh stock-brokers. The local stock-exchange was transformed from a quiet, jog-trot little institution into a strenuous nerve-centre of finance. A mob of applicants clamoured at its doors for membership, until thirty were admitted, each one with a ten-thousand-dollar check in his hand as an entrance fee.

Real estate agents also shared in the profits of the golden jubilee. The Carnegie men bought so much real estate that they are to-day in control of the down-town business section of Pittsburgh. Frick led the way by a series of big purchases, amounting to over thirteen million dollars. When we add to this the value of the manufacturing sites owned by him along the Monongahela River, his three million-dollar hotels in New York, his costly new hotel and office building which are now being built in Pittsburgh, we find that Frick is not only the real estate king of Pittsburgh, but one of the leading landlords of the world. Next to Frick, in Pittsburgh, came Henry W. Oliver with a dozen millions in land and buildings, and Henry Phipps with five millions. W. W. Blackburn and James Scott invested half a million apiece. The others were content to buy residences only.

THE ROMANCE OF STEEL

PITTSBURGH'S REAL ESTATE BOOM

This sensational investment of thirty-five millions or more in real estate sent prices and rents up with a jump. Nowhere, outside of New York, are such exorbitant sums asked and given. Real estate is fully three times higher than it was before the forming of the United States Steel Corporation. On Fifth Avenue fifteen thousand dollars a front foot has been offered and refused. And the original landowners of Pittsburgh—the Shanleys and the Dennys—are being replaced by men who get the acres, not by the favour of a king, but by the production of iron and steel.

“When a small man gets rich fast, he is twice as bad as a grand duke,” say the Russian peasants. Generally speaking, this saying does not apply to the men who became millionaires when Carnegie waved his magic rod. At least two-thirds of them continued to smoke “tobies” and wear the harness of business. But a few who were intoxicated by their sudden riches indulged in such unique freaks of extravagance that the whole group found themselves at once in a blaze of publicity.

Pittsburgh became a Klondike for artists, book agents, curio dealers, and merchants who had expensive gewgaws for sale. One New York firm discovered that it was selling goods to more than three hundred Pittsburgh customers. To retain this profitable business it rented a magnificent new building in Pittsburgh for ninety thousand dollars a year, and established a branch store. Paintings were sold by the dozen and books by the hundred. Professional decorators reaped a golden harvest. Prices were raised at the theatres. To hear Bernhardt, even from the second balcony, cost five dollars. Families paid as much for one quart of champagne as they had formerly paid for a hundred and twenty-five quarts of milk. For a pound of Hamburg grapes men gave more than

THE HARVEST OF GOLD

their fathers had earned in a week. For a couple of French apples they paid the price of a pair of shoes. And for one American Beauty rose they gave as much as a week's board had cost them when they began to work for Carnegie.

THE CITY OF MAGICAL GOOD FORTUNE

The fame of Pittsburgh's miraculous millions reached Europe, and attracted scores of steel men and engineers across the ocean. One man who heard the golden news, a highly educated Frenchman, at once went to Pittsburgh and entered a steel-mill as a labourer, having heard that this was the proper way to begin. He had no fortune and no friends, and for a time was lost in the mob of workmen. Then, by accident, he was discovered to be a man of culture and given a position as tutor. Being the possessor of rare social qualities, the number of his friends increased until he reached the higher levels of society. Pittsburgh proved, in his case, at least, to be the city of magical good fortune which he had expected it to be.

One of the forty young partners developed the habit of entertaining his guests by giving them an inventory of his household goods. "See that painting!" he would say. "Cost me twenty-two thousand dollars; but I could get twenty-eight thousand dollars for it. Have a cigar. Fine brand. Seventy-five cents apiece wholesale. Notice that chair you're on? Dealer wanted three hundred dollars for it, but I beat him down to two hundred and fifty. What do you think of my wife's necklace? Had to give up a quarter of a million to get it." This same exuberant Cræsus, writing a note of introduction for a friend, said: "I'll back this man for millions." Money became his passion—his theme by day and his dream by night.

THE ROMANCE OF STEEL

THE FADS OF THE STEEL MILLIONAIRES

One of the other partners developed a taste for an expensive library, which made him the easy prey of book agents. Another, to whom politics is a pastime, lent his hundred-thousand-dollar residence for a polling-place. A third ordered a special brand of half-dollar cigars made in Cuba, each with his name and coat of arms on the wrapper. A fourth had his wife's portrait painted by every obtainable foreign and American artist. A fifth spent a fortune in making "the finest mushroom cellar in America." A sixth gladdened his friends by gifts of automobiles. A seventh had eight bathrooms put in his new house, so that he would have three more than his neighbour. An eighth, when he received a twenty-five-dollar fee for his attendance at a government investigation, tossed the money airily to the stenographer and said: "Keep it or give it to your church. I don't want it." And several paid two thousand dollars apiece for admission to a history of "Famous Americans."

All this was natural, harmless, and "good for business." The Carnegie partners were all liberal spenders. There was not a miser in the group—not one who valued money for money's sake. The one partner who came the nearest to being penurious had alternating moods of extravagance and economy. One day he presented the city with a hundred-thousand-dollar conservatory, and the next day he decided that he could not afford a fifteen-thousand-dollar painting, because, as he told a friend, "the interest on fifteen thousand dollars would be two dollars a day, and it is not worth two dollars a day to look at a picture."

Some of the partners would have been wealthy had there been no Carnegie. Such men as Phipps, Frick, Schwab, Corey, and Gayley inevitably forge to the front in any set of circumstances. But most of the "Carnegie veterans," as they



WILLIAM E. COREY



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE HARVEST OF GOLD

call themselves, knew well that they owed their millions to the business leadership and generosity of their chief. Under most employers, they would have begun and ended as employees—nothing more. Many times they had been goaded almost to the point of resigning by their insatiable master. But they had persevered and been rewarded. One of the partners in the sales department had an unusually narrow escape from comparative poverty. He had made a serious blunder in drawing up a contract, several years before the company was sold. He discovered his mistake too late to have it rectified, and at once sat down and wrote his resignation. Taking it to a prominent Pittsburgh merchant, who was his closest friend, he said:

“I want you to read this over. I’ve made a bad break and I don’t want to be kicked out of the company. I find I can pull out with seven hundred thousand dollars, and that’s a deuced sight more than I ever expected to be worth.”

The merchant read the resignation and then deliberately tore it into small pieces.

“Blank, you’re a fool. Go back to your office and hang to your desk with both hands.”

Blank took his friend’s advice, and, by some accidental oversight, entirely escaped punishment for his carelessness. To-day his house alone is worth seven hundred thousand dollars; and when Mr. Carnegie reads these lines he will hear for the first time how nearly he came to losing one of his “young geniuses.”

And so, as the twentieth century dawned, the sun of the Carnegie company set in a blaze of golden glory. When it arose, about twenty-eight years before, Great Britain was making three times as much steel as the United States; when its busy day was ended, the United States was making twice as much steel as Great Britain. Remembering that Great Britain’s product had increased eight-fold, it becomes evi-

THE ROMANCE OF STEEL

dent that industrial history can show nothing comparable to this.

The partners have organised a most remarkable society—the “Carnegie Veterans.” Once a year they meet at the home of the “little boss.” Stories are told; mistakes are rubbed in and laughed at; and the whole wonderful epic of their adventures is celebrated in a reminiscent festival. They were lucky, and they know it, to have won both fortune and friendship in the making of steel; and they stand pledged to meet once a year until the last man dies.

THE PHIPPS AND FRICK FAMILIES

Of the ex-Carnegians who continue to draw millions from steel, Phipps spends his ten thousand dollars a day in traveling in Europe and Mexico. Having married one of his daughters to a rich American and the other to the younger son of an English peer, he has turned his attention somewhat to the problems of the working classes. One of his millions is to be spent in New York, building “model tenements,” and it is expected that other millions are to follow. Iron and steel workers have wondered why these tenements are not to be built in Homestead and Braddock, or to replace the wooden shacks of the ore miners in the Lake Superior region.

Frick, unlike Phipps, is still busy. He will never be anything else, unless he undergoes a chemical transformation. He is the real estate king of Pittsburgh. He is the chief adviser of the United States Steel Corporation. He is the umpire-in-chief in many a political and financial dispute. In his own business affairs, he has half a dozen ways of becoming too rich. From steel, coke, real estate, apartment hotels, speculation in railway stocks, and from trust companies, he could have to-day a yearly pension of three millions if he chose to retire and become a looker-on. He and his

THE HARVEST OF GOLD

family have joined the Pittsburgh colony in New York. Their present home is the George W. Vanderbilt house on Fifth Avenue, which Frick has leased for ten years. It is one of the famous "twin Vanderbilt mansions" built a generation ago. And so Henry Clay Frick, who was living in half of a coal miner's cottage thirty-three years ago, finds himself to-day the welcome occupant of a Vanderbilt palace.

Few of the self-made steel kings are allowing their children to be as hardy as themselves. Judge Moore is trying to induce his son to climb the railroad ladder by making him a freight clerk in a small town. The boy gets fifty dollars a month and no allowance. Up to this time of writing he has tightened up his hunger-belt and persevered; but he gets even with his parents by sending every day the menu of his boarding-house. Another steel millionaire put his son in Morgan's office at a salary of ten dollars a week. But as the boy goes to his work every day in a twenty-two-thousand-dollar automobile, he is not probably vividly conscious of being a proletarian.

CARNEGIE'S MAGNIFICENT PENSION

As for Andrew Carnegie, the grand old pensioner of steel, he has as least the second largest fortune, and perhaps the most secure one in the United States. His pension, including the amount that goes to his charities, is about thirteen million seven hundred and fifty thousand dollars a year—a daily allowance of more than forty-four thousand dollars—ninety-two dollars every time the clock ticks off a minute, allowing that he is paid on the basis of an eight-hour day. "Hurrah! I am out of business," he said in 1901. Yet he is still the greatest profit-taker of them all. Out of every dozen dollars of gain in the American steel trade, one goes to the laird of Skibo. The golden pay-car of the Steel Trust shovels out as much to this one man as to *fourteen thousand* of its Pittsburgh work-

THE ROMANCE OF STEEL

men. His pension would support a city as large as Lynn or Bridgeport. In fact, when we consider the enormous wealth of Carnegie, he ceases to be an individual. He becomes one of the financial institutions of the United States.

"I don't say that Carnegie has made money commoner," said one of the oldest and most reflective of the forty partners. "But he has put more commonness into the idea of money than any man that ever lived." This remark may be taken as representing the final opinion of Pittsburgh.

Such a feat as Carnegie had accomplished was unknown, both among the facts and the fairy tales of history. He and his two-score partners had started out upon the road of business as a group of barefooted urchins; and before their average age was more than forty they were richer than the hereditary rulers of the Old World. Compared with the Carnegie millions, the wealth of the French court, under the "ancient régime," was a bagatelle. In his most wasteful year, Louis IX. spent less than eight hundred thousand dollars. The luxurious Francis I. could have maintained himself and his whole court for more than a thousand years on the amount of money which fell to Carnegie alone as his personal share. Louis XIV.—the most successful of all the royal plunderers of those earlier days—had less than four millions a year to squander on himself and his entire retinue.

NEW STANDARDS OF WEALTH

Pittsburgh, in the Carnegian era, established new standards of wealth. It made the mere millionaire a back number. It drowned all records of affluence in a sudden deluge of scores of millions. It yielded to the masterful few—men without rank or learning or privilege—a sum total which had never been equalled in the long history of the human race. It piled up for them a store of riches so vast as to be proof against all

THE HARVEST OF GOLD

spending—so practically infinite as to defy the unparalleled benevolence of Carnegie and the wildest extravagance of his young partners.

What Andrew Carnegie has done is marvellous. But more wonderful still is the fact that he has done it all so easily and incidentally. "I never found my business anything more than mere play," he said. "Golf is the only serious business of life." His conversation sparkles with contemptuous references to wealth. "It's worth ten thousand dollars to make a drive like that"—"Making one hundred thousand dollars is nothing to the sport of landing a monster pickerel"—"If I had my life to live over again, I would prefer to be a librarian"—"I would give all the millions I own and all I could get credit for, if I could only be a boy again."

He has never allowed the great things of life to put him out of touch with the small things—one of the rarest of qualities. He has been almost everywhere and seen almost everything, and yet he is the least blasé man in the world. He has lived for twenty-six thousand days, and yet every hour is as fresh and vivid as it was in his boyhood. "Millionaires who laugh are rare," he said on one occasion; but he is as care-free and buoyant as a child, and always has been. No one could have less of the menacing dignity which is usually supposed to be a characteristic of great men.

CARNEGIE'S DEMOCRATIC HABITS

Last summer, while visiting his sister-in-law in the South, he was bossed most unmercifully by his caddie—a little darky with about eleven years to his credit.

"Now, Mr. Cahngy," his young tyrant would say, "don't you go to do dat. You's all wrong! Don't you see you got a brassie? It's a mashie dat you want to make dat dar hit. Hol' on till I gib you de right stick."

THE ROMANCE OF STEEL

And Mr. Carnegie would meekly reply, "All right, Joe, I suppose you know best," and exchange his brassie for a mashie.

Two amazing things Carnegie accomplished: he acquired a quarter of a billion dollars in a lifetime, and—he retained possession of himself. He carries the wealth of a city easier than many a man can carry the price of a suit of clothes. Whatever faults he has, they are not those of his class. He owns millions—hundreds of them—and pays no penalty. He is still as simple, as democratic, as congenial, as when he was struggling with his debts in the early Pittsburgh days. He smokes never—drinks seldom—detests fashionable society—abhors starched clothes—abominates gambling and all games of chance. He travels, but in no private car. He attends grand opera, but has no box. Of all the money kings, not one spends so much on others and so little on himself. He forced his way over obstacles with the obstinacy of a steel wedge—not on the smooth pathway of consolidation and "community of interest," but in the jungle of competition; yet he remained from first to last a man of the widest interests. Commerce could never make him one of its automata. To a degree which has never been surpassed, he has always been "the captain of his soul."

His English friend, W. T. Stead, who is a connoisseur of celebrities, has sketched him as a sort of cheerful, shrewd Marcus Aurelius, living far above the cares and prejudices of other men. Our only authentic description of Mrs. Carnegie is given to us by Stead. "Mrs. Carnegie is a homemaker," he writes. "She is skilful in that larger housekeeping which makes a harmonious household."

"All that you can say of me," said Mrs. Carnegie to Stead, "is that I am the unknown wife of a very well-known man." "But you must add," said Carnegie, "that she is, nevertheless, the power behind the throne." Mr. Carnegie met his wife,

THE HARVEST OF GOLD

who was then Miss Louise Whitfield, of New York, on a coaching tour. It was love at first sight, but they postponed their marriage until 1887. Their one daughter, Margaret, will be the richest heiress in the world.

ADMIRATION OF GREATNESS IN OTHERS

One evidence of true greatness in Carnegie is his admiration of greatness in others. He has always been a man of heroes. Herbert Spencer as a philosopher, John Morley as a literary man, B. F. Jones as a steel-maker, and Abram S. Hewitt as a citizen, are his ideals. "To discover the exceptional man"—this, he said, should be the object of the Carnegie Institution, to which he gave ten millions. He believes that the finished product of a college should be the man of power rather than the man of polish. On one occasion he replied eloquently to Sir Edwin Arnold, who had declared that a knowledge of Greek and Latin was indispensable to a writer's education.

"What?" exclaimed Carnegie. "Did not Burns and Shakespeare write well enough without Latin and Greek? The writers of the modern world must deal with facts, with realities, not with neat phrases." At another time, when conversing with Lord Reay, he said: "A man with a university education is a man lost to commerce. He had better begin business at eighteen than spend three or four years in a university, studying old ruffians who lived two thousand years ago. Studying skirmishes among savages in the classics is no preparation for a man going into the steel or coal trade. He might as well learn Choctaw."

THE IDEA LARGER THAN THE DOLLAR

To Andrew Carnegie the Idea has always been larger than the Dollar. "I do not believe that any very rich man ever

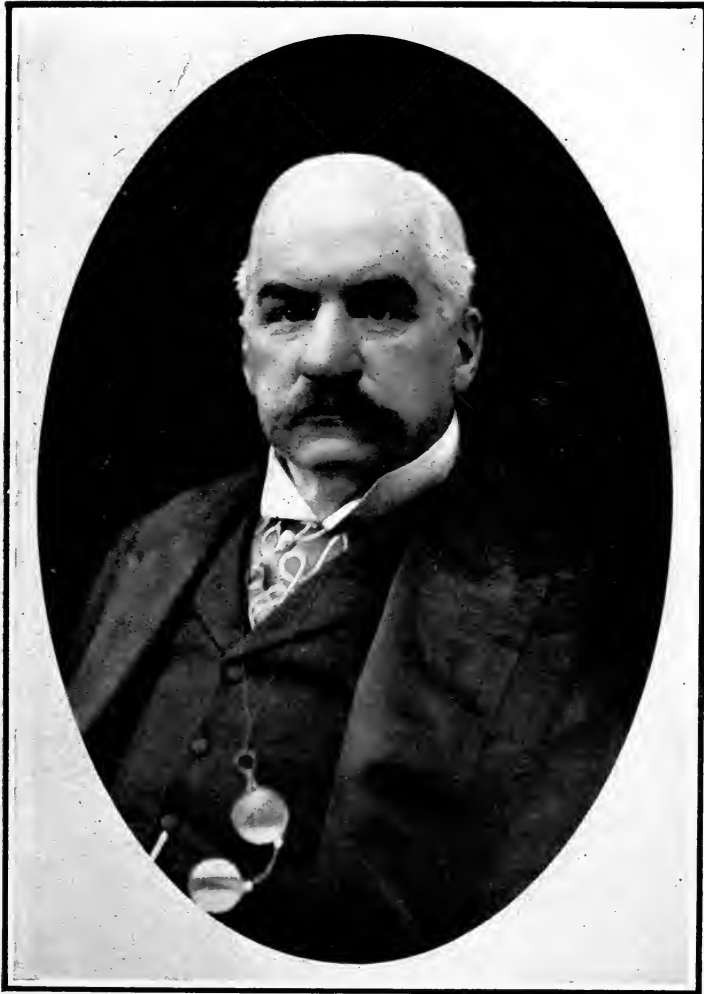
THE ROMANCE OF STEEL

lived before him with so much and such genuine enthusiasm for literature as Andrew Carnegie," writes Moncure D. Conway. While securing information from Mr. Carnegie for this story of steel, I discovered in the first quarter of an hour that he is prouder of his authorship than his ownership—more pleased that his "Empire of Business" has been translated into Greek and Japanese than that his pension amounts to forty-four thousand dollars a day.

The story of his charities is in itself a book. Hastily summed up, they may be classed as follows:

Fourteen hundred libraries	\$42,000,000.00
Fifty-one colleges	10,000,000.00
Carnegie Institution	10,000,000.00
Carnegie Foundation (pensions for re- tired professors)	10,000,000.00
Carnegie Relief Fund	4,000,000.00
Carnegie Hero Fund	5,000,000.00
Scotch Universities	10,000,000.00
Pittsburgh Technical Schools	10,000,000.00
The Hague Temple of Peace	1,500,000.00
New York Engineers' Club.....	1,000,000.00
Pittsburgh Museum of Art	2,000,000.00
Donations promised (according to Sec- retary's book)	17,000,000.00
Grand Total	<hr/> \$122,500,000.00

And every dollar of it made from steel.



Copyright, 1902, by Pach Bros., New York.

J. PIERPONT MORGAN



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

CHAPTER VII

J. PIERPONT MORGAN AND THE UNITED STATES STEEL CORPORATION

The Great Era of Consolidation—How Two-Thirds of the Most Profitable American Industry Was Organised, Under Morgan's Leadership, into the Biggest of the World's Corporations—The Dramatic Career of John W. Gates, and the Personalities of Perkins, Gary, and other New Powers in the World of Steel.

IN the early spring of 1901 J. Pierpont Morgan strode among the steel kings like a beneficent giant. Two years before, he had refused to become the overlord of the iron world; but several things had happened since that time. He was now to a large extent a steel king himself. He had successfully organised the Federal Steel Company. He was a heavy stockholder in the National Tube and the American Bridge Companies. Moreover, his intimacy with Frick had given him a better knowledge and a more favourable impression of the steel men.

Besides, at the present crisis, his own life-work was in danger. For more than thirty years Morgan had been a builder and a peacemaker. He was the most implacable foe of hostility among capitalists. He was the champion of "team play" and "community of interest."

From his point of view, therefore, the exit of Carnegie was a business necessity. Carnegie was preparing to parallel the Pennsylvania Railroad and to compete with the National Tube Company, both of which were in Morgan's "sphere of influence." To permit such a man to control the steel market was unthinkable.

THE ROMANCE OF STEEL

From a business standpoint, Carnegie was invulnerable. He had his own ore, coal, railroads, steamships, and steel-mills. In his commercial and personal interests, he stood entirely outside all associations of capitalists. He enjoyed to the full what his Scottish poet called "the glorious privilege of being independent." It was an amazing feat to win a place absolutely alone in an age of interdependence—when even the nations were clinging one to another for support; but as a factor in the business situation his position was not to be tolerated. The stability and peace of mind of the American financial world demanded that Andrew Carnegie should abdicate his throne.

THE PERSONALITY OF J. P. MORGAN

John Pierpont Morgan was at this time a veteran of sixty-four, the scarred victor of a hundred battles. Through his father—a famous banker, a partner of the great George Peabody—he was descended from Captain Miles Morgan, the gallant soldier who defended Springfield against the Indians in 1675; through his mother he inherited the blood of John Pierpont, the poet, whose name he bears, and of James Pierpont, the New England clergyman who helped to found Yale, and whose daughter married Jonathan Edwards. Born in Hartford, and schooled in Boston and at the German university of Göttingen, his training as a banker began before he was twenty-one, and every step of his career had been from smaller to greater things. In 1901 the house of Morgan was commonly said to represent eleven hundred million dollars—perhaps more. Its head was justly regarded as a financial Colossus. In fact, he had become almost more than a man—he was a British-American institution. Many a time he had come to the rescue of Wall Street, pulled it out of a slough of panic, and replaced it upon the main road of speculation. More

MORGAN AND U. S. STEEL CORPORATION

than once he had given good-natured assistance to the United States Government, and saved it from the fear of penury by purchasing its bonds.

He was a man to whom transactions of ordinary size seemed petty. For any sum of less than seven figures he had little respect. In the previous fifteen years he had reorganised eight railroads, floated an American bond issue of two hundred million dollars and a British war loan of ten million pounds, harmonised the warring coal operators, and converted the Mexican national debt. No man aroused more fear or higher respect in Wall Street. No one was so terribly masterful as he. Like Luther, when he spoke "his words were half battles." To anger him was to brave the rage of an incarnate Bessemer converter. In whatever group he sat, he dominated those around him as if he were the ruler of a constellation of worlds instead of a mere inhabitant of a single planet.

BUILDING THE GREAT CORPORATION

Morgan rushed at his work like a Titan who had at last found a task worthy of his strength. At first his plan was to combine only four companies—the Carnegie, the Federal Steel, the National Tube, and the American Steel and Wire. But a quick survey of the field showed him that four other companies would be easy to persuade into the confederation—the National Steel, the American Tin Plate, the American Steel Hoop, and the American Sheet Steel; while if these concerns were left out, they might offer an inconveniently active competition.

Frick hurried to Pittsburgh and offered about thirty million dollars for the big Jones & Laughlin plant, but was refused. On his return he found that Morgan had been trying to make terms with John D. Rockefeller, Jr., for the purchase

THE ROMANCE OF STEEL

of the Rockefeller ore mines. The negotiations had come to a standstill. For several days it appeared as if the powerful Standard Oil group would be left outside of the steel combination.

To break the deadlock, Henry H. Rogers suggested that Frick, who is a better buyer than Morgan, be sent to Rockefeller. This expedient was tried and succeeded completely.

"I gave Rockefeller forty million dollars in preferred stock," said Frick, "and forty millions in common, for his ore. For his ore-carrying fleet I paid him eight and a half millions in cash. We needed the Rockefeller property, for without those rich ore tracts we should have been in a vulnerable position."

In this way the United States Steel Corporation obtained about two-fifths of its ore and nearly one-half of its ore fleet.

The speed with which the great structure was built is almost incredible. Schwab had secured Carnegie's selling price in January, 1901, and by February 25 the corporation had taken definite shape. According to its New Jersey charter, its purpose was practically to manage the business of the human race—to own and operate the whole world, with the sole exception of the railroads and canals of New Jersey. Its actual capital was declared to be three thousand dollars, which it had power to increase. Its three nominal incorporators were men who were comparatively unknown. Its life was to be "forever." All this, however, was only the formal and legal way of making a beginning.

On the following day the fog of rumour was dispelled by an official announcement from Mr. Morgan's banking-house. Next came his advertisement for the stock of the smaller shareholders in the companies that were to be absorbed. It was signed by about forty well-known names. Each one represented millions. Some could speak not for themselves alone, but for whole cities. Among them were:

MORGAN AND U. S. STEEL CORPORATION

J. Pierpont Morgan and his partners, Charles Steele and Robert Bacon.

H. H. Rogers and Daniel O'Day, of the Standard Oil.

Marshall Field, John W. Gates, H. H. Porter, John A. Drake, E. H. Gary, William H. Moore, J. H. Moore, and Norman B. Ream, of Chicago.

P. A. B. Widener and Thomas Dolan, of Philadelphia.

Samuel Mather, of Cleveland.

Nathaniel Thayer, of Boston.

D. O. Mills, Samuel Spencer, William Nelson Cromwell, and A. R. Flower, of New York, with more than a dozen others.

Morgan peremptorily announced that all stock of the companies going into the trust must be in his hands in eighteen days. But the minds of the small stockholders did not work with Morganic swiftness, and he was obliged to give them twelve days longer. By April 2, however, Morgan's greatest task was accomplished. The corporation which is his financial masterpiece—by which his reputation will stand or fall—was complete. Its capital was fixed at a little more than a billion dollars, besides three hundred and sixty-six millions of bonded and mortgage debt. The stock, half seven-per-cent. preferred and half common, was being sold to a greedy public.

Seventy per cent. of the American iron and steel industry had been organised. More than that, it had become Morganised; it had been put together on "community of interest" lines. Instead of being cut apart from other branches of business and dominated by one man, it was now linked to a dozen banks, a score of railroads, and an unknown number of other corporations.

THE MEN IN CHIEF COMMAND

Its officials and directors were not steel-makers. Less than a third of them understood the language of steel. Schwab,

THE ROMANCE OF STEEL

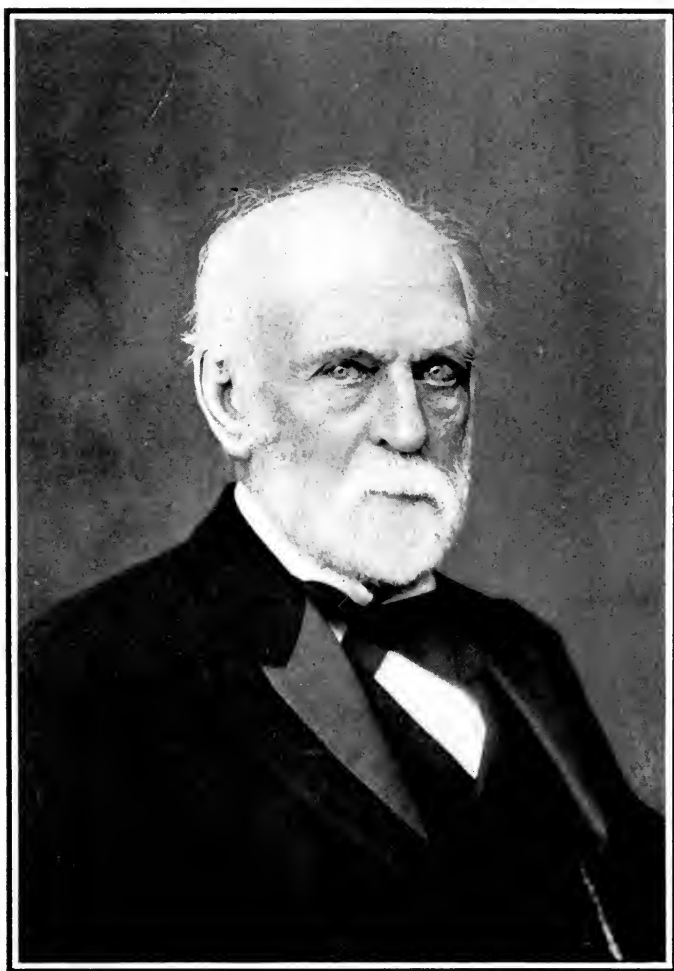
a practical steel man, had been made president at the request of Carnegie; but in the management of the corporation the president ranked, not first, but third. Judge Elbert H. Gary was first, as head of the executive committee; and Robert Bacon—who was succeeded, a little later, by George W. Perkins—was second, as head of the finance committee. Strictly speaking, the president was merely the head of the manufacturing department. Gary was a lawyer, Bacon a banker, Perkins an insurance man.

The United States Steel Corporation was a financial even more than a manufacturing organisation. It was first for money and second for steel. This was a new and important development in the evolution of the steel business. On its board of directors was only one steel-maker of the old-fashioned sort, Abram S. Hewitt, and he entered unwillingly. To his mind a billion-dollar corporation was a dangerous innovation. The modern steel-maker was typified in H. C. Frick; the others were men who had evolved into financiers from all sorts of beginnings.

[More than half of the officials and directors were self-made men. The three who stood foremost—Gary, Perkins, and Schwab—had climbed from the ladder's lowest rung.] They were young men. The average age of the officials was forty-eight, the oldest being fifty-five and the youngest, Charles M. Schwab, thirty-nine. For their services in managing the immense corporation, Schwab and Gary drew salaries of a hundred thousand dollars apiece. Perkins received nothing.

"Mr. Morgan would not permit him to get a salary," said Judge Gary.

It has often been stated that Morgan himself received a huge fee for his successful work in effecting the consolidation. As a matter of fact, he received no direct payment whatever. He held a one-fifth interest in a syndicate that floated two hundred millions of the company's securities, and his total profits



ABRAM S. HEWITT



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

MORGAN AND U. S. STEEL CORPORATION

were less than three millions. "High pay for a few months' work," the outsider may say; but he should remember the magnitude of the achievement and the vast responsibilities that Morgan had to bear—and still bears, to a great extent, so closely does the public identify him with the fortunes of his greatest financial creation.

"Morgan was big and fair and square," says Schwab.

"No man, no number of men, outside of Mr. Morgan, could have formed the United States Steel Corporation at that time," declared Judge Gary.

Another New York financier, in an outburst of enthusiasm, exclaimed:

"I believe that in the next twenty years a statue of J. Pierpont Morgan will be placed in some public square, to mark the general appreciation of his wonderful organising ability."

In the consolidation of businesses it has been found that the services of a company-promoter are indispensable. A business man naturally dislikes to sell to his competitor. He prefers to deal with an outsider.

"Every manufacturer imagines that his plant is better located and better managed than his neighbour's," says W. H. Moore, who is, next to Morgan, the most successful consolidator in the steel industry. Whether Morgan's reward was fair or exorbitant can best be told by making a closer examination of the work which he performed.

AN IMPRESSIVE NAVAL REVIEW

To escape from its bewildering statistics, let us imagine that the United States Steel Corporation is a combination of the navies of the world. Let us suppose that we are standing upon some lofty promontory where we can see the mighty fleet pass in review before us. It consists of two hundred and thirteen squadrons, some with few vessels and some with many.

THE ROMANCE OF STEEL

After years of warfare, these squadrons were organised into eight powerful navies; and now, finding that it is better to combine than to compete, they have decided to come together under one admiral and one flag.

Leading the way come the Carnegie war-ships, the most formidable steel navy in the world. Admiral Schwab stands on the deck of his flag-ship Homestead, and on either side steam the battle-scarred leviathans Duquesne and Edgar Thomson. It was this Edgar Thomson which, twenty years ago, defeated the proud champions of Great Britain and established American supremacy. One of these towering vessels is forty-three years old; but every one of them is in first-class fighting trim. There are no hulks, no slow or unseaworthy craft, and there are forty-five thousand men behind the guns. The pay-roll of this one fleet is fifteen million dollars a year. It is practically thirty fleets under one control. On the deck of the Edgar Thomson is a tiny figure which can scarcely be distinguished with a strong field-glass. That little man, you are told, is Andrew Carnegie, the owner of the fleet.

Next comes the Federal Steel navy, commanded by Admiral Elbert H. Gary. The first vessel of this fleet was launched in 1857, at Detroit, by Captain Ward. In its day it had no superior, and in 1901 it is still one of the largest afloat. Its equipment is not strictly first-class, but it carries a vast amount of ammunition. Its older vessels have weathered many a storm and passed through many a battle. Since Captain Ward, no one individual has been masterful enough to bring it under his personal control, and there have been many wrangles among its owners. More than a few have been made to walk the plank; but it is a strong aggregation of five large fleets, manned by twenty thousand men, and with a pay-roll of six million dollars a year.

And now in striking contrast to the rusty, time-worn war-ships of the Federal Steel navy, come the American Steel and

MORGAN AND U. S. STEEL CORPORATION

Wire vessels, a hundred and twenty-six in all. Here and there among them is a veteran. The Schoenberger, of Pittsburgh, for instance, has been outliving the winds and the waves for seventy-seven years. But most of the ships are gay with fresh paint. Flags are flying, bands are playing, and all is spick and span. In a steam-yacht ahead rides Admiral John Warne Gates—too reckless a sailor, some say, but certainly a dashing and dangerous adversary. Two years ago he gathered his ships together from all parts of the ocean, hoisted the Gates banner, and set out for gain and glory.

Another two-year-old fleet follows—the American Tin Plate. Its ships are noticeably smaller, but more numerous. It is an aggregation of thirty-eight squadrons, with two hundred and seventy-eight vessels in all. Its admiral, Daniel G. Reid, like most of the others, began as a cabin-boy and worked his way up. Only a few of these ships are more than eight years old; yet they have already met and defeated the Welsh tin-plate navy, which had been regarded as invincible.

Next the National Tube, a thirty-vessel fleet, with Admiral William B. Schiller in command, steams past. Most of the ships are old, but they have recently been painted, and make a good showing. It was upon this fleet that Carnegie was about to make such a fierce onslaught when Morgan, the peace-maker, interfered.

The sixth fleet flies the well-known Rockefeller flag. It was picked up, here a vessel and there a vessel, by its dreaded commander. It cost him little, but he is selling it for something like fifty million dollars.

In the rear come two smaller fleets—the National Steel and the Steel Hoop. Both have been hastily built, and are newly painted to cover their defects. Two years later they will be disbanded and merged with the big Carnegie navy.

As if this immense aggregation were not enough, four other large squadrons are soon to be added—the American Bridge,

THE ROMANCE OF STEEL

in which was Carnegie's old warship, the Keystone, the Clairton Steel, the Union Steel, and the Shelby Steel Tube.

It is now Morgan's herculean task to federate these proud and jealous fleets, so that there shall be no mutiny, no breaking away, no survival of old-time prejudices. He will be the centre of a clamouring mob of owners and captains. He must know the record and present condition of every fleet. He must winnow his facts from a mass of exaggerations and misstatements. He must choose officers who will command the obedience of these newly reconciled antagonists. He must give the vast combination a new name and a new flag, for which its two hundred thousand officers and men will be willing to fight as loyally and successfully as they have fought on their own account. Such was the work which lay before Morgan in the first year of the new century.

STEEL CORPORATION STATISTICS

And now, for the practical people who love facts and figures, here is a feast of statistics. In the long history of commerce, where has there been a corporation with possessions like these?

✓ The United States Steel Corporation owns as much land as is contained in the three States of Massachusetts, Vermont, and Rhode Island.

✓ It employs one hundred and eighty thousand workmen—more than the combined armies of Meade and Lee at Gettysburg.

More than a million of the American people—as many as the population of Nebraska or Connecticut—depend upon it for a livelihood.

Last year it paid out in wages one hundred and twenty-eight million dollars—more than the United States pays for its army or for its navy. "Our workmen have a first mortgage on United States Steel," said Charles M. Schwab.

MORGAN AND U. S. STEEL CORPORATION

It owns and operates a railroad trackage that would reach from New York to Galveston, or from Paris to Constantinople. It possesses thirty thousand cars and seven hundred locomotives.

It has nineteen ports and owns a fleet of one hundred large ore-ships. This is the most numerous of all American fleets under a single ownership. It is the sixth largest commercial fleet in the world, and from the point of view of industrial efficiency, it is perhaps unequalled in any country.

It has ninety-three blast furnaces, nearly all of them running day and night, and it makes forty-four per cent. of the pig iron of the United States.

From its fifty great mines it produces one-sixth of all the iron ore in the world. In one year it heaps up a mountain of more than sixteen million tons of red ore.

It makes three-fifths of our Bessemer and open-hearth steel, two-thirds of the steel rails, two-thirds of the wire rods, three-fifths of the steel beams, ten-elevenths of the wire, and nearly all of the wire nails, wire fencing, steel tubing, tin plate, and steel bridges produced in the United States.

It makes more steel than either Great Britain or Germany, and one-quarter of the total amount made in all the countries of the world.

To feed its ceaseless fires, it burns in a single year ten million tons of coal, eleven million tons of coke, and fifteen billion cubic feet of natural gas. Its supply of fuel will last for sixty years.

It can make anything in steel from a carpet-tack to steel rails, from a tin can to armor-plate, from a wire nail to an Eiffel Tower.

Its iron-works and steel-works are mainly in Pittsburgh and twenty-five smaller "steel cities" within a hundred miles' distance; but it also owns large plants in Chicago, Joliet, Milwaukee, St. Louis, Muncie, Elmira, Philadelphia, Troy, Hart-

THE ROMANCE OF STEEL

ford, Worcester, and elsewhere. It is about to create a new industrial centre at the southern end of Lake Michigan. Its ore is mainly in Minnesota. Its headquarters are in New York, though as a New Jersey corporation it maintains a nominal "general office" in Hoboken.

If it had been organised in Pennsylvania, its fee would have been fourteen hundred thousand dollars, and its yearly tax more than five millions; but being organised in New Jersey, its charter fee was a mere two hundred and twenty thousand dollars. Even this comparative trifle was more than the fortune spent by Baron Peter Hasenclever in founding New Jersey's iron business. Its annual tax to the State—another trifle of sixty odd thousand dollars—is more than three times the cost of the famous Lynn iron-works, built in 1645.

Its total responsibilities, as expressed in stocks and bonds, were as follows, at the date of its first annual report:

Bonds (mainly five per cent. bonds held by the Carnegies)	\$366,097,697
Preferred stock	510,281,100
Common stock	508,302,500
	<hr/>
Total	\$1,384,681,297

And not even this stupendous total expresses the full power of this industrial empire. Behind it stood Morgan, Rockefeller, and Carnegie, representing about two billion dollars of well-handled and aggressive capital.

Such an immense capitalisation was not unknown in principle. The plan of issuing stock based on expected profits rather than actual assets, was not new to company-promoters. Several hundred-million-dollar companies had been successfully launched; but they were regarded, by old-fashioned financiers, as dangerous experiments. Consequently, when Morgan coolly announced that his new company would pay

MORGAN AND U. S. STEEL CORPORATION

interest or dividends upon nearly fourteen hundred millions, the whole international world of finance was speechless with surprise.

FOURTEEN HUNDRED MILLIONS

Fourteen hundred millions!

Supposing that this amount represented real capital, it would be equal to the following:

One-sixty-seventh of our national wealth in 1900.

One-fifth of our national wealth in 1850.

One-thirtieth of the world's manufactures.

One-tenth of American manufactures.

One-fifteenth of all the gold and silver mined in the world since the discovery of America.

More than the combined product of all the manufacturing industries, farms, fisheries, and mines of the United States in 1850.

More than the gross receipts of all American railroads in 1899.

One-fifth of the resources of our 3,871 banks in 1900.

Seven-twelfths of the deposits in our savings banks in 1900.

All of the savings banks deposits in 1890.

The value of all the animals on American farms in 1880.

Combined value of all our corn, wheat, rye, oats, barley, buckwheat, and potatoes in 1900.

Three times the value of all our cotton and wool in 1900.

More than all our national exports in 1900.

The value of all the banks, manufactories, canals and street railways in Canada.

The value of all Canadian farms—both land and implements.

One-eighth of the national wealth of Italy or Spain.

The profits of Monte Carlo for two hundred years.

THE ROMANCE OF STEEL

The expense of the whole consular and diplomatic service of the United States for seven hundred years.

The interest on our public debt for fifty years.

Twelve times the capital of all the banks in the city of New York.

More than the total amount of stock issued by the eighty-six largest corporations that had been organised from 1887 to 1898.

The cost of ten Panama canals.

The cost of thirty-five steel plants, each as large as Krupp's.

All the pension claims of the United States for the next eleven years.

Every life-insurance policy falling due for seven years.

The salary of seven thousand Presidents during twenty-eight thousand years.

All the exports of London for three years.

One-quarter of all the gold coin in the world and one-half of all the silver.

Twice the total receipts of our national government.

Two and a half times the amount of gold and silver produced in 1899.

Two-thirds of all the money in circulation in America in 1900.

All the money in circulation in 1889.

Three times the gold in the U. S. treasury in 1900.

The cost of all the American public schools for six years.

A little fortune of \$9,000 for every man and boy in its employ.

Ninety dollars for every family in the United States.

One dollar for every human being in the world.

A \$3,000 home for every family in Iowa, Kentucky, or Georgia.

More than 78,000 \$2-a-day workmen could earn in their lifetime.

MORGAN AND U. S. STEEL CORPORATION

A pile of silver dollars 2,200 miles high.

Two hundred and sixty-four car-loads of silver, with twenty tons in a car.

Enough silver dollars to pave a boulevard, 72 feet wide, from Ann Arbor to Detroit.

As many one-dollar bills as would make a green sash six times around the world, with 6,700 miles left for a double bow-knot and streamers.

As much as twenty clerks could count in eight years, with each counting a dollar a second and working eight hours a day.

Enough gold to fill a train of forty-four fifty-ton cars.

Enough gold, if beaten out, to cover 304,000 acres—over three-eighths of the State of Rhode Island.

THE GOLD OF ANCIENT DAYS

In the days of Froissart, it was the custom for a few of the inhabitants of a conquered city to march out of the gates laden with treasure for their conquerors. But what would be the thoughts of the good old chronicler could he have seen a great army of 58,300 men, each staggering under the weight of a hundred pounds of pure yellow gold? Marching four abreast, the long procession would be eleven miles from the first rank to the last.

The story of Montezuma's gold, captured by Cortes, set Europe in a blaze of cupidity. Great as it was, it was but a bagatelle compared with Morgan's paper millions. If the United States Steel millions were in gold, they would weigh 230 times as much as the plunder of a Cortes.

"I will fill this room with gold—high, yes, high as my arms can reach, if you will give me my freedom," said Atahualpa, the Peruvian Inca, to the Spaniard Pizarro. "Shouts of incredulous laughter" greeted this offer of the captive Inca,

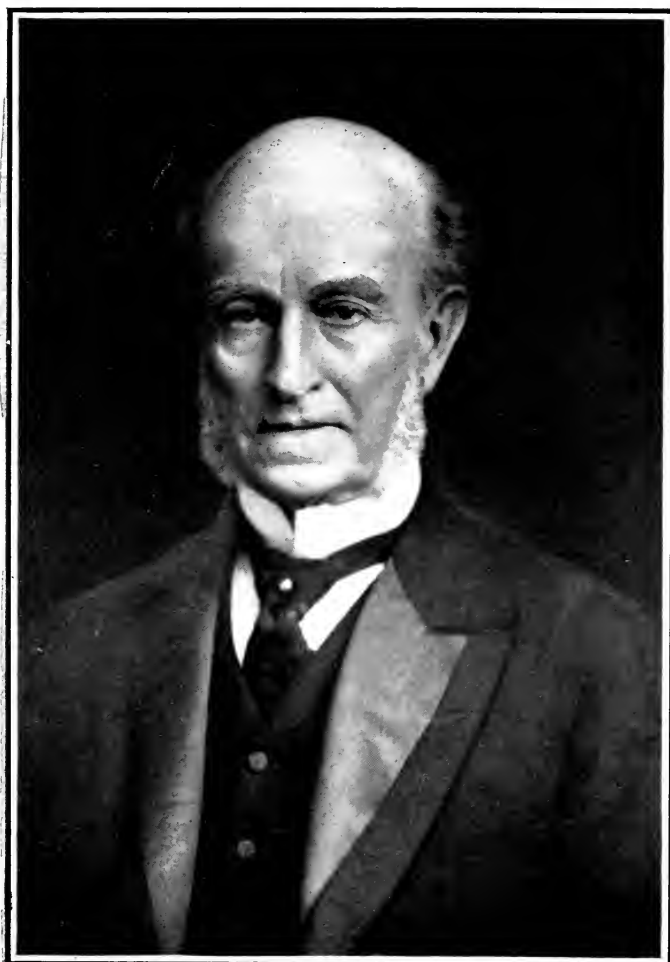
THE ROMANCE OF STEEL

wrote the historians. But the Inca made good his promise. He heaped the room with gold. Before the eyes of the amazed Spaniards he piled 70,550 pounds of it. Hundreds of mules carried the yellow treasure to the Spanish ships. It was thrown under the decks like ballast—thirty-five tons of the metal that was more precious than life. Up to that time, (1532) there was no record of any wealth which could compare with this, yet it was less than two per cent. of the Morgan millions.

In fact, you will look in vain through the histories of ancient days for any wealth that can be compared with the stupendous paper value placed by Morgan upon these federated steel companies. The writer who describes the wealth of the United States Steel Corporation is confronted by this startling truth,—that he cannot avail himself of the language of myth or poetry. The riches of a Cræsus—the gold of the Spanish galleons—the diamonds of Golconda—"the wealth of Ormus and of Ind!" What are these in comparison with the totals in an annual report of this company?

One simile, and one only, remains. When St. John, in the wonderful vision with which the New Testament concludes, sees the "New Jerusalem" of the far future, in which perfected Humanity shall dwell, he pictures it as a "city of pure gold." But this was Heaven, not earth. Nothing terrestrial, whether past or present, fact or imagination, equals the wealth of this single American corporation.

Public approval would have been too shallow to float the United States Steel Corporation, had it been launched four years earlier. It would have been regarded as a Utopian scheme, no less unworkable than the federating of the European monarchies into a continent of republics. But in 1896 and 1897 there began an unprecedented era of industrial speculation. From 1896 to 1904 twelve thousand new companies were registered in New Jersey alone. One hundred



Copyright, 1905, by Pach Bros., New York.

D. O. MILLS



MORGAN AND U. S. STEEL CORPORATION.

and forty-nine of these, formed within three years, had a total capitalisation of nearly four billions. In 1901 it was estimated that one-seventh of the manufacturing industries of the United States had been organised as stock companies, and that about four billion dollars worth of their stock had been bought by the public. On January 7, of that year, two million shares were sold on the New York stock exchange, for the first time in the history of the institution. The price of a seat jumped from thirty-five thousand dollars in the summer of 1900 to seventy-one thousand in May of the following year. Later it rose still higher, and a leading cause of the advance was the buying and selling of Steel stock. It is fair to say that the United States Steel Corporation added at least twenty-five thousand dollars to the value of each of the eleven hundred seats on the exchange.

Since 1899, when a train-load of New York financiers went to Pittsburgh, on the invitation of Frick, to see the armour-plate vaults of the Union Trust Company, the wealth of the Smoky City had been better appreciated by Eastern investors. Financial editors pointed out that the value of our iron and steel exports alone in 1900 was almost a hundred and thirty million dollars. Some prophesied that the common stock of the new company would pay twelve per cent. "This United States Steel Corporation can't possibly fail," said the Wall Street men. "It means unity, co-operation, assured profit."

WALL STREET AND STEEL STOCK

Nevertheless, when the stock came to the stern test of the market, the price it brought proved that somewhat less optimistic views prevailed. That enterprising body of outdoor speculators, the "curb," turned its attention to the great new corporation as soon as its formation was definitely announced, quite undeterred by so trifling an obstacle as the fact that its

THE ROMANCE OF STEEL

securities were not yet in existence. The first sales, on February 26, were at 39 for the common and 84 for the preferred. On March 28, when the stocks were listed on the exchange itself, the ruling prices were higher, closing at 44 $\frac{5}{8}$ and 94. The trading was on an enormous scale, the number of shares that changed hands being as follows:

	March 28	March 29
Common	128,700	147,200
Preferred	112,200	117,900

But this was only a beginning. In the following week the sales reached much larger figures:

	April 1	April 2
Common	275,600	212,300
Preferred	146,000	107,200

Prices, too, continued to rise, closing on April 2 at 49 for the common and 96 $\frac{7}{8}$ for the preferred. Nor was this the limit. The sight of a great "bull" movement thus fairly under way drew the eager public into the market, and the swelling tide of speculation surged higher and higher. On April 29, six hundred thousand shares of Steel stock were bought and sold; and even this enormous trading was outdone on the 30th, when all stock-exchange records were broken, the total sales for the five hours of business being more than three million shares, almost a quarter of them being United States Steel securities. At the close of that delirious day "Steel common" stood at 53 $\frac{7}{8}$, "Steel preferred" at 101.

But the speculative high-water mark had been reached. Nine days later there came a slump that was still more striking and sensational than the boom. The warfare of two rival groups of capitalists culminated in the most remarkable



CHARLES STEELE



MORGAN AND U. S. STEEL CORPORATION

“corner” in the history of Wall Street. The bone of contention was the control of Northern Pacific. The stock of that railroad had never sold at par until three weeks before; but on May 9 the bidding for it was so frantic that it leaped up to fabulous figures, one lot selling at a thousand dollars a share. The result was panic—sudden, swift, and disastrous. It was whispered that no mercy would be shown to the victims of the “corner.” Those who were “short” of Northern Pacific saw bankruptcy yawning before them. Brokers began to throw over their other holdings to save themselves from ruin. As the alarm spread, and as prices went tumbling, no man knew where he stood. United States Steel dropped to 24 and 69, almost cutting the value of the shares in half, and “wiping out” a countless host of speculators.

A STEP TOWARD PUBLIC OWNERSHIP

When the panic had run its brief course, Steel stock rose easily to 42 and 89½ at the close of the day's business, and on May 10 it recovered still further, to 45 and 93¾. Although it was only six weeks old, the young giant had weathered the storm. Indeed, it stood on much too solid a basis to be overthrown by a Wall Street incident. Two-thirds of the American iron and steel trade had been welded together. A destructive industrial war had been prevented. A bloodless revolution had taken place. The most profitable business in the United States had been withdrawn from the few and given to the many. The Steel stock was now held by some forty thousand people—a number which afterward increased to eighty thousand. A little more, and Morgan would have pushed the steel business forward into public ownership.

“It was the longest step ever taken in the direction of socialism,” said the president of one of the constituent companies to the writer.

THE ROMANCE OF STEEL

“I’ll give you a name for your ‘Romance of Steel,’” said George W. Perkins, on the first occasion when I asked him for information. “You ought to call it ‘How the People of the United States Bought the Steel Business.’ What is the essential difference,” continued Mr. Perkins, “between the United States Steel Corporation, as it was organised by Mr. Morgan, and a Department of Steel, as it might have been organised by the government? Suppose Lyman J. Gage, instead of Mr. Morgan, had consolidated the steel business. Wouldn’t he have had to buy out the owners? To do this wouldn’t he have had to issue bonds? And wouldn’t a limited number of investors have bought the bonds? Is it not also true that the United States Steel Corporation has abolished the secrecy which covers the ordinary private company? Does it not issue public reports of its progress, of its gains or its losses, just as if it were a department of the government? Mr. Morgan unified the American steel business, but he distributed the power of ownership. He stepped in and averted the threatened danger of one-man power. He transferred the authority from a few hundreds to tens of thousands.”

Others at the time declared that the great corporation was in itself a government.

“What is it but a federal government?” said Sir Gilbert Parker. “It has its laws, its consuls in foreign countries, its departments, and so forth.”

On the whole, the new company was received with approval by the American public. It could point, in self-justification, to the telling fact that the steel prices of 1901 were lower than those of 1900. From its standpoint, the advantages of the new plan were summed up as follows by President Schwab:

- (1) One New York office instead of ten or more.
- (2) Better handling of ore-ships.
- (3) A better arrangement of work, so that each plant could make what best suited it.

MORGAN AND U. S. STEEL CORPORATION

(4) Friendly rivalry between different plants, through the constant comparison of their work.

(5) Fewer, better-paid, and better-skilled specialists.

(6) The establishing of a clearing house for trade information.

(7) Saving of freight charges, as Pittsburgh could now make steel for the East, Chicago for the West, Lorain for the lake cities, and Youngstown for the Middle States.

In every department the best men were kept and the superfluous ones were let go. The American Steel and Wire Company, for instance, kept only eighteen out of three hundred travelling salesmen. The foreign business was handled from one London office, under Carnegie's man, Millard Hunsiker. Everything on a large scale, by high-speed specialists and the best machinery—this was the plan originated by Carnegie and carried further by Morgan. This was how the millionaires were made.

THE QUESTION OF OVER-CAPITALISATION

Before the United States Steel Corporation was organised, it had been announced that "there will be no issuing of new securities—only a consolidation of existing securities for the sake of harmonious action." But when Morgan came to make his bargains with the steel men, their demands soared so high that he was compelled to pile million upon million. He paid exorbitant prices for the plants. Everybody knew it. Morgan himself knew it. But he knew that the stock would shake down to its level, and that the job had to be done, whether it cost much or little. The corporation's officials admit that the capitalisation was excessive; but they maintain that the plant is steadily increasing in value, and that it is able to pay dividends upon the entire amount.

All Pittsburgh believed that Morgan paid too much to

THE ROMANCE OF STEEL

Carnegie. Wall Street, which considers profits rather than plants, had a different opinion. It approved of paying a sum equal to twenty-five millions a year for a concern which was making forty. As for the other constituent companies, they were over-capitalised from every point of view. Half of their stock was water, and Morgan was obliged to add seventy-four millions to their inflation.

When one of the smaller steel corporations was being formed, it is said that a party of convivial steel men were on their way to Chicago one night, after a buying tour.

"There's a small steel-mill at the next station," said one. "Let's get out and buy it."

The wine had been passing freely, and it was midnight; but they agreed. In an hour or so they were pounding on the door of the owner of the steel-works.

"Come out and sell us your plant," they shouted.

"My property is worth two hundred thousand," he said; "but it is not for sale."

"Never mind about the price," said the hilarious promoters. "We'll give you three hundred thousand—five hundred thousand!"

The owner surrendered. It was the first time that half a million had come hammering on his door at midnight. He sold his plant. The buyers transferred it to their corporation at twice what it had cost them, taking their pay in watered stock; and—so the picturesque narrative concludes—the corporation raised its price and sold it to Morgan. This story may be exaggerated, but it illustrates the way in which corporations become top-heavy with fiat capital.

No one knew what the United States Steel Corporation was actually worth. There were so many factors to consider that it would have been a colossal task for a board of experts to fix an amount. From six different standpoints, its value might be roughly stated as follows:



Copyright, 1936, by Alman & Co., New York.

GEORGE W. PERKINS



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

MORGAN AND U. S. STEEL CORPORATION

(1) Net earnings in 1901, capitalised at six per cent.	\$1,800,000,000.00
(2) Net earnings in 1901, capitalised at ten per cent.	1,080,000,000.00
(3) Book estimates	1,229,000,000.00
(4) Expert opinion in 1901	673,000,000.00
(5) Wall Street value in 1901, tak- ing common stock at 50 and per- ferred at par	764,000,000.00
(6) Estimate by the Industrial Com- mission	559,000,000.00

The average of these six estimates would work out at \$1,017,000,000.

If the entire plant of the corporation could have been replaced, which is now impossible so far as ore, coke, and mill-sites are concerned, the cost of duplicating it would have been about one-half of its capitalisation. But taking it as a going concern, with all its advantages of ore, coke, location, and management, there seemed fairly good reason to believe that its securities were worth their full nominal price.

The corporation began its career handicapped by a lack of ready money in the treasury, by the heavy cost of organisation, and by a burden of fifty-four millions of fixed charges. At several points it was not wisely officered. There were two or three smouldering feuds among the steel men which had to be repressed. The corporation needed, therefore, four or five years of experience to remedy its defects and to grow together. When Morgan was constructing it, he had his eye focussed upon the middle of the twentieth century rather than upon its beginning.

THE STEEL KINGS FROM CHICAGO

We have already seen what effect this Morgansisation of the steel business had upon the fortunes of Carnegie and his brood of forty young millionaires. They represented Pittsburgh's

THE ROMANCE OF STEEL

share of gain and glory. The Chicago money-getters belonged mainly to the Moore and Gates groups, two distinguished exceptions being Norman B. Ream, a veteran speculator, and the late Marshall Field, who stood ready to invest a few of his many millions in any promising enterprise. Both of these Western groups were of the speculative and financiering species. Not one of their members was a practical steel-maker. In this respect they contrasted vividly with the Carnegians, who knew every foot of a steel-mill, but who were the most innocent and lamb-like novices in Wall Street affairs.

The most conspicuous Chicagoan was John Warne Gates. It was he, in fact, who first suggested a billion-dollar steel corporation, two years before Morgan became the steel king of the world. No career had been more strenuous than his. Life was to him a give-and-take battle for high stakes. He was a financier who carried into business all the sporting instincts of the betting-ring. He was a new type among the steel men, not at all like Carnegie, who had never bought a share of stock through Wall Street. And he was still less like the old "fathers" of Pittsburgh, who believed that every steel-maker should live under the smoke of his own mill.

JOHN W. GATES, THE WIRE KING

As a boy, Gates grew up on an Illinois farm. He was energetic and precocious. Two years before he became a voter he had fallen in love with an Illinois girl, and married her. At that time he was "Johnny" Gates, the manager of a little hardware store in a farming village.

Now there was in De Kalb, Illinois, a man named Isaac Ellwood, who was trying to sell a new commodity called barbed wire. At his wife's suggestion, Ellwood had bought the right to make this wire from a Missouri blacksmith. His trouble, he found, was not in making barbed wire, but in

MORGAN AND U. S. STEEL CORPORATION

selling it. It was a novelty, and cattlemen considered it too flimsy to be of any use. At this juncture Ellwood met Gates, was struck with the young man's geniality and readiness of speech, and sent him out to sell barbed wire in Texas on a salary of twenty-five dollars a week.

This Texas trip made Gates. It also made barbed wire. The Texas cattlemen had never seen barbed wire before, and they ridiculed it.

"That stuff wouldn't hold a Texas steer a holy minute," said they.

Gates was put on his mettle. "I'll show you whether it will or not," said he.

This was in the picturesque town of San Antonio, which is dotted liberally with small open spaces, or plazas. Gates hired the nearest plaza, and got together a drove of twenty-five of the wildest Texas steers that could be found. Then he fenced his plaza with barbed wire, put the steers inside, and gave the cattlemen a free show. The steers charged the wire, and were pricked by the barbs. They shook their heads and charged again, with the same result. After two or three of these defeats they huddled together on the inside and tried to think it over. Gates sold hundreds of miles of his wire that day at eighteen cents a pound.

In a few years he had a barbed wire factory of his own. One day his factory burned down. Fifteen minutes after his foreman had reported that it was totally wrecked, he had entered into partnership with William Edenborn, and was filling orders as usual. Six years later he made his first large sum of money, a hundred thousand dollars, by a big sale of English steel. Every dollar that he could lay his hands on went into wire. No one at that time saw as clearly as he that wire was henceforth to be the nerve of civilisation, as steam and electricity were to be its muscle and steel its bone.

In 1892 he merged several large wire companies and be-

THE ROMANCE OF STEEL

came the wire king of America; and since then millions have been his units. Three years afterward he was the president of the Illinois Steel Company, which in 1898 was enlarged into the two-hundred-million-dollar Federal Steel Company. No one except Carnegie stood above him in the steel trade. During the previous year he was said to have cleared twelve million dollars in Wall Street, in connection with his American Steel and Wire Company; and from that time the lure of the ticker has drawn him into many speculations.

Gates is an extreme type of the American "hustler." Like most steel men, he is short in stature, and as energetic as a cyclone. He is a staunch friend and a first-class enemy. He believes in American business as a Saint Gaudens believes in art—as an Edison believes in electricity. He is an organiser, a promoter, a boomer—a "bull," as Wall Street would say.

Gates is a good maker and a good spender of money. It is a fact, not generally known, that he has an unusually fine picture gallery in his New York apartments. This gallery contains two specially notable groups. One is a fine collection of those quiet landscapes in which Corot, Rousseau, Daubigny, and their colleagues embodied the soul of the Barbizon woods and fields; the other is a group of the stately English ladies of a century ago who were immortalised by Reynolds, Romney, Gainsborough, Hoppner, and Lawrence. Beyond these, his taste seems to range widely, from Rembrandt and Rubens to such moderns as the German Grützner, the Italian Asti, and the American Van Boskerck.

Unlike several other steel barons, who rose to power on the backs of their friends, Gates, as he battled and buffeted his way to the front, always made a path wide enough for his chums as well as for himself. The Gates coterie includes John A. Drake, William Edenborn, John Lambert, Alfred Clifford, and Isaac L. Ellwood. No association of capitalists plays the game of finance with more dash and enthusiasm.

MORGAN AND U. S. STEEL CORPORATION

They are free lances, ready for a tilt with the biggest man in the field. Their capital is scattered in all manner of enterprises. It was the Gates group, for instance, that gave New York its Luna Park and its Hippodrome.

THE NAPOLEONS OF TIN PLATE

There were four in the Moore or Rock Island group—all dashing knights of the dollar—whose adventures would read like the voyages of Sindbad the Sailor. They were D. G. Reid, W. B. Leeds, and the Moore brothers. The latter have been mentioned before. As for Reid and Leeds, they have been Damon and Pythias since childhood. Both were born about forty-eight years ago in Richmond, Indiana, which was then a farming town of five or six thousand inhabitants. Dan Reid lived on a farm, Billy Leeds in the town. Dan began his business career by sweeping out a bank, working up, after a while, to be its president. Billy began as a rodman on the Pennsylvania Railroad, and climbed to the position of branch superintendent. As soon as the thirty-dollar-a-ton duty was placed on tin plate, in 1891, the two young men swooped down upon the feeble little tin-making plants that had been fighting bankruptcy for twenty years, and swept them all together into a Tin Plate Trust before they had time to find out what was happening.

Tin plate is one of the youngest branches of the steel trade. There was a small plant at Leechburg as far back as 1872; but it was impossible to compete with Wales and make a fair profit. No tariff was levied on tin, because its importers were influential in politics, and because it was generally supposed that the making of it was a Welsh secret. Reid and Leeds resolved to make the experiment on a large scale. The day after the McKinley tariff bill was signed, they ordered tin-making machinery—a quarter of a million dollars' worth—

THE ROMANCE OF STEEL

from Wales. A body of Welshmen came with the machinery; but they failed to make the new plant a success. Reid and Leeds were not millionaires, and it was a cruel setback.

Then came the Presidential campaign of 1892. Tin plate was a national issue. Workmen paraded in Pittsburgh, wearing tin caps. Democrats claimed that campaign money was being used to start tin-plate works. The whole industry was thrown into the political caldron. But the two young Indians never weakened. They adapted their machinery to American raw material; they set inventors to work; and in the end they remade the industry on American lines.

Within six years they had combined two hundred and seventy-eight mills into a fifty-million-dollar corporation. The machinery was improved to such an extent that to-day the Welsh tin-maker can go to school in Monessen, Newcastle, and Vandergrift. Reid and Leeds, like Morgan, paid enormous prices for independent plants; but they took long views of the tin-plate business, and came out worth probably forty millions apiece. They and the Moores received from Morgan one hundred and forty million dollars in Steel stock when the big corporation was formed. They at once bought control of the Rock Island Railroad, and have since been known as the Rock Island group.

THE NEW TRIUMVIRATE OF STEEL

As to the three men whom Morgan placed in control of the United States Steel Corporation—Judge E. H. Gary, George W. Perkins, and Charles M. Schwab—all were representative of larger interests. Gary had been born and bred in an Illinois farming town, which contained half as many people as the skyscraper where he now has his office. He was first clerk of the little local court, then mayor, then a lawyer whose business grew until it came to the notice of

MORGAN AND U. S. STEEL CORPORATION

the Chicago steel kings. In a short time he was in demand through his skill in managing big deals. In appearance and manner Gary resembles a Methodist bishop—benign, suave, cordial, and earnest. He is a man of sense, not genius—of diplomacy, not bluntness.

While Gary represented the Morgan interests from the Chicago side, George W. Perkins represented the Morgan interests from the New York side. Perkins, too, was a man who owed little to any one but himself. He began with a broom in a Chicago office; then he budded into business life as an insurance agent. From an agent he became an organiser of agents. His remarkable success in this work carried him to one of the highest rungs of the insurance ladder, from which he stepped across into a partnership with Morgan.

In many respects there is a marked contrast between Perkins and his formidable partner. His forte is in dealing with men, rather than money. He is almost too companionable, to fluent, too many-sided, for a financier. His adaptability and his rapid-fire brain give him the equipment of a journalist or a statesman. When he took his place at the head of the Finance Committee of the steel combine, it was his first appearance as a steel magnate. To his vision there loomed up an immense opportunity for making a gigantic organisation of men who would work together for a common interest in the greatest of all industrial enterprises. Neither he nor Gary knew steel as a metal. To them it was a stock—a purely financial entity.

Such were the prize-winners in the strenuous competition of steel kings. They deserve most of the credit for consolidating the American iron industry, but not all. No one individual, no one event, no one tendency, created the immense industrial empire which we know by the name of the United States Steel Corporation. It stands as the finished product of a hundred years of invention, enterprise, and prog-

THE ROMANCE OF STEEL

ress. In its strength and in its weakness, in what is stable and what is speculative, it is typical of the civilisation from which it sprang.

It was even more than a national production; it was an assembling of men and ideas from all the civilised countries of the world. There went to its making the mechanical skill of the English, the dexterity of the Welsh, the tenacity of the Scots, and the learning of the Germans, welded together by the enterprise and organising genius of Americans.

As the main roots of a towering tree are nourished by thousands of tiny feeders—as the largest tributaries of a broad river are sustained by innumerable trickling streams, so there stand behind this vast industrial structure the tiny efforts of countless men and women. That which we see and know is only the final result; it is only the crest of a huge coral reef whose base lies deep beneath oblivion's sea. And so, while the profit and glory of this long evolutionary process may go to a few individuals, endowing them with the power and prestige of kings, those who have followed this story of steel from its romantic beginning to the present will understand that our steel business is, as truly as our literature or our ethics, the product of the human race.

CHAPTER VIII

SIX YEARS OF THE STEEL TRUST

An Impartial Summary of the United States Steel Corporation's Record, of Its Present Situation, and of Its Prospects—What the Greatest of Industrial Organisations Has Done for the Iron and Steel Trade, and What Is Said of It by Its Friends and by Its Critics.

THE first annual report of the United States Steel Corporation was the most remarkable financial document that had ever been known in the long history of commerce.

It looked more like a magazine than an annual report, with its sixty-four pages and sixty-three illustrations of furnaces and steel-mills. And it was sent to nearly sixty thousand stockholders—a larger circulation than many a magazine possesses. Its figures were those of an empire, rather than of a private company of American business men. Its revenue of five hundred and sixty millions was equal to that of the ten kingdoms of Spain, Portugal, Holland, Roumania, Sweden, Norway, Greece, Denmark, Siam, and Turkey. The receipts of the United States itself, for 1902, exclusive of the postal business, amounted to only two millions more than those of the United States Steel Corporation.

This wonderful corporation was not a bank, yet it had more than fifty millions in its vaults—a greater sum than the deposits in any of the New York savings banks except five, or any of the national or State banks except seven.

It was not a railroad, yet it operated five large railway systems, with nearly five hundred locomotives and more than

THE ROMANCE OF STEEL

twenty-six thousand cars. And these were not freight roads merely, as eighty-three of the cars were for passengers.

It was not a marine corporation, yet it possessed a fleet of more than a hundred vessels, many of them the best of their kind, whose earnings for the year furnished a nine-million-dollar item to the report.

Without counting its sixteen docks, its seventeen thousand coke-ovens, its two hundred square miles of gas land, its hundred thousand acres of coal land, and its sixty ore mines in the Lake Superior region, this corporation reported itself as being the owner of nearly sixteen hundred manufacturing plants.

The grand total of assets—no human mind can transform this line of figures into an idea—was \$1,546,544,234.65.

Roughly speaking, labour got one hundred and twenty million dollars for the year's work; the stockholders, fifty-six millions; the machinery for improvements and depreciation, forty-five millions; and Andrew Carnegie, the grand old pensioner, got eighteen millions, including the three millions set apart as a sinking fund for the payment of his bonds in the year 1952.

The 168,127 workmen received an average of seven hundred and seventeen dollars apiece; the stockholders averaged about a thousand dollars. So far as the profits were concerned, the little Scot, in spite of his abdication, still towered above all the newcomers.

The net profits of the corporation for the year were more than a hundred and thirty-three million dollars. Out of this twenty-five millions were taken for special improvements which were thought to be advisable though not strictly necessary. Because of the use of this generic word "improvements," it is impossible to tell the exact percentage of profits. Just how much of the forty-five millions that come under this head was spent for the actual enrichment of the property, and how much of it went for political purposes, or to cover up mistakes



ELBERT H. GARY



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

SIX YEARS OF THE STEEL TRUST

and losses, no one outside of the corporation can tell. There is no cause for suspicion in the report itself; but recent revelations concerning the methods of "high finance" have made the American public more sophisticated than it was.

THE SUDDEN "SLUMP" OF 1903

The corporation began well, as a money-maker. For twenty-seven months it moved along as steadily as a clock, ticking out fourteen millions in dividends every quarter of a year. Then, in the middle of 1903, came trouble. It was a feast-and-famine year. The market had become surfeited with the stock of over-capitalised corporations. In two years the total capitalisation of new companies had soared up to nearly eight billion dollars. There was an over-production of stock, and, when prices fell, the good suffered with the bad. The wreck of Schwab's ship-building enterprise, and the governmental veto put upon the Northern Securities merger, made matters worse. "Steel preferred" went below fifty, and the common stock plunged to ten.

On New Year's Day, 1904, the stockholders regarded the wish for a happy new year as a cynicism. They had received a message notifying them that the profits for the preceding three months had dropped to the beggarly sum of two millions dollars. Only by drawing upon the company's surplus could the quarterly dividend be paid on the preferred stock; holders of the common stock, who had had their revenue halved three months before, were now cut off altogether. Down and down went the price of the corporation's securities. "Steel common" was recommended as cheap wall-paper, and the comic papers reported that grocers were giving away a share with every purchase of a pound of tea.

There was a general outcry from those who saw their dollars cut in half. "The Steel Trust has robbed the people of five hundred millions in a single year," said a Boston

THE ROMANCE OF STEEL

broker. "With its common stock at ten, it can pay its debts at the rate of twenty-five cents on the dollar," declared a Chicago professor. Twelve thousand stockholders jumped overboard and swam ashore with heavy losses. If they had remained on board for a year longer, they would have lost nothing. But it was a time of panic, when men jumped first and thought afterward.

Capital lost thirty millions which it had been led to expect; but labour lost more. Twenty thousand workmen were discharged. Twenty thousand homes, into which twenty million dollars had flowed the previous year, were left without resources. Twenty thousand workmen stood idle in the market, offering their skill for sale, and endangering the price of labour all along the line. It was a harsh step, but necessary from the standpoint of dividends.

It was a hard-luck year, and everybody grumbled—everybody except the Wall Street brokers. They did a merry business, pulling down what they had built up three years before. In fact, the stock exchange end of the steel business has grown until it is larger than the manufacturing end. It is a point of great significance, for better or for worse, that the buying and selling of steel stocks is to-day a business of greater volume than the buying and selling of steel.

THE RETURN OF PROSPERITY

In 1905 the horn of plenty was once more emptied on the heads of the steel men. It was a year of jubilee. Before it was half over, the preferred stock had climbed above par and the common to nearly forty. The twenty thousand workmen came back, and others with them. At the annual meeting the stockholders effervesced with delight, and passed a vote of thanks to Mr. Morgan, as the meeting happened to be on his sixty-eighth birthday.

SIX YEARS OF THE STEEL TRUST.

Those who regarded the United States Steel Corporation as a finished product said, in the dark days of 1904, "Morgan has failed." The wiser ones, who regarded it as a continuous process, said "Wait." Morgan's supreme aim was to give stability to the iron and steel trade. He had against him not only natural forces, but artificial ones as well. He had to fight against a depression caused by bad crops, or a panic caused by some speculative buccaneer.

Now, if there is one thing that Morgan's strong nature hates more than another, it is something that is small, flimsy, and uncertain. He abhors makeshifts. His lasting honour will be that he has been the first American who deliberately made it his life-work to co-ordinate the various functions of industry and finance on a national scale. With a masterfulness which has never been surpassed, he linked together railroads, banks, steamship lines, industrial corporations, and two-thirds of the iron and steel trade. He had to use refractory materials. Neither his friends nor the public understood his purposes. He was compelled to work with many men who lied to him and betrayed him. His so-called partners were, comparatively speaking, no more than clerks. He stood alone, a Gulliver among the Lilliputians of Wall Street.

In 1901 many critics pointed out that the demand for dividends by a mob of stockholders would be likely to take too much money out of the business and allow the plants to depreciate. There was good reason for this warning. Hundreds of iron and steel men had wrecked their fortunes on the big-dividend rock. Even the late Russell Sage, clever financial pilot as he was, could not steer past this peril. Sage was in the iron business in 1866—as early as Carnegie. He had a large share in Captain Ward's Milwaukee rolling-mill; but he made the usual mistake of demanding enormous profits at once.

"Sage made my life miserable because we did not pay

THE ROMANCE OF STEEL

higher dividends, although we paid from fifteen to twenty per cent. for several years," said J. J. Hagerman, who was then an official of the company. Those who remained in that Milwaukee enterprise made millions; but Russell Sage lacked the farsightedness to be a steel-maker. Like hundreds of others, he had his chance and lost it.

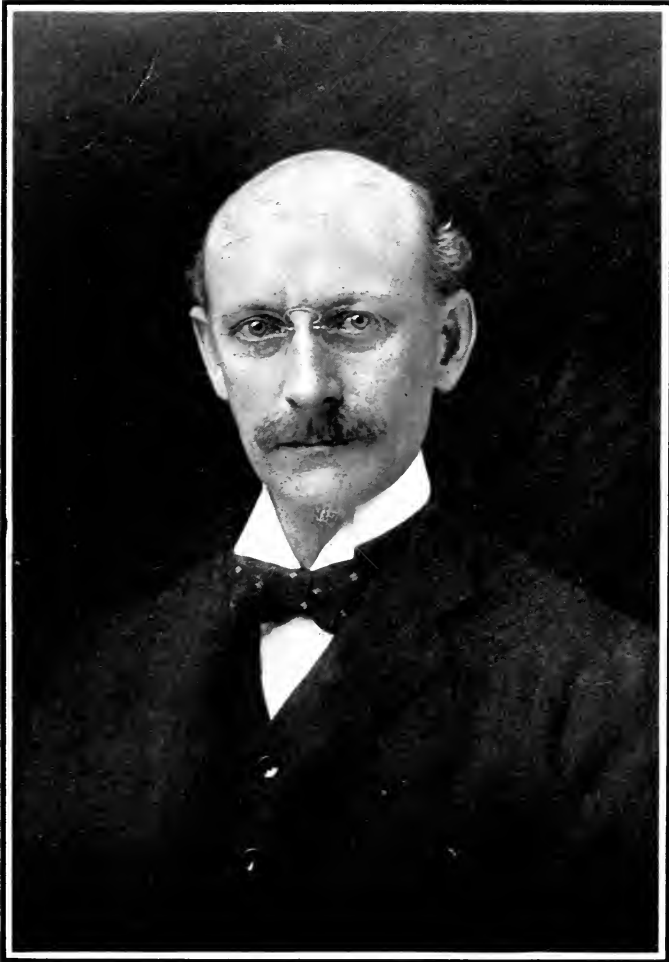
Every successful steel-maker knows that improvements must be made continually, whether any money is left for dividends or not. To look at the figures given out by the corporation was not convincing. In annual reports things are not always what they seem. Such has come to be the public opinion. When fifty millions of preferred stock were changed into bonds in 1902, it was stated that thirty millions of it went for improvements. Ten millions a year were appropriated for "special" work of this sort, and in each annual report there were several pages of "improvements and extraordinary replacements" mentioned by name.

"Improving our own plants is the key-note of the United States Steel Corporation," said its first vice-president, James Gayley.

But the only way to know whether the property of the corporation is rising in value, or falling, is to go and see it. Consequently, in gathering the information for this series of articles, I was careful to ask at every stopping-place, "Show me what improvements have been made since 1901." After nearly six thousand miles of travel, I have not found a single instance in which a property has been allowed to depreciate, or in which improvements have been made in a parsimonious way.

"Everything the United States Steel constructs is first-class," said one of Duluth's leading business men.

"I want you to build that store for all time—no make-shifts," said the vice-president of the Union Supply Company to a contractor.



JAMES GAYLEY



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

SIX YEARS OF THE STEEL TRUST

The corporation operates fifty stores under this name in its coal and coke region, and the order given by the vice-president was not a mere phrase for effect, as I overheard it accidentally.

THE PARAGON OF COAL-MINES

The Traveskyn coal-mine, near Pittsburgh, which was built entirely by the corporation, has probably no equal in the world for safety, convenience, and efficiency. It is a mine without a mule. All its hauling is done by four six-ton electric locomotives, on a double-track road, without a grade anywhere of more than eighty feet to the mile. This is a saving of twenty men as compared with the mule system, and keeps the mine much cleaner. The mine is lit with electric lights from end to end. Its walls near the pit's mouth are white-washed. A twelve-thousand-dollar ventilating apparatus blows through it a constant stream of fresh air. An independent telephone system, with eighteen instruments, connects the superintendent with every part of the mine.

The four hundred workmen live in neat cottages, scattered through a grove of trees. Each house has from three to six rooms, and rents for two dollars a room. A few of the men make a hundred and fifty dollars a month, but the average wages are half as much. The output of the mine is two thousand tons a day—five tons per man. In the past dozen years I have seen many mines, in this country and Great Britain, but never one like this.

A STEEL-TRUST COKE PLANT

At Uniontown, Pennsylvania, is a coke-making plant, made entirely by the United States Steel Corporation. Here, too, the same good management and free expenditure of capital can be seen. We shoot down the steam-hoist in a few seconds, making the three-hundred-foot trip more slowly than if we

THE ROMANCE OF STEEL

were cars of coal. The mine below is practically a little village of two square miles. As it is a gaseous mine, no electricity is used, except in the stable. This stable is one of the sights of the whole mining region, being built entirely of cement and bricks. Not a splinter of wood is to be seen, making fire impossible. It has stalls for fifty mules, yet at the time that I went through it it was as clean as a garage, the sloping cement floor making it possible to flush it thoroughly. Several chickens were picking up grain in the hay-room. The walls were white-washed. There was nothing dirty, nothing repulsive, even in the mules' part of the mine. The Steel-Trust mule is the aristocrat of his species.

The four hundred miners live in four-room or five-room houses. Thirty of them have bought their own homes. They are all Huns and Slavs. For wages, they average from two to three dollars a day. For rent, they pay seven to nine dollars a month.

"One of the miners," said E. H. Abraham, the superintendent, "went back to Hungary last month with nine thousand dollars in his pocket, the savings of twenty-three years. He worked in the mine until two hours before train-time, so as not to lose even half a dollar."

The men seemed to be both contented and independent. One of them had opened a grocery store in opposition to the store owned by the company. In the whole community there was nothing dilapidated or untidy. Even around the engine-house and the shaft's mouth little cinder-paths had been made. These were so trim as to look almost out of place to one who is familiar with coal-mines. One would as soon expect to see a bunch of baby-ribbon on a pickaxe.

Here, also, were two new inventions—a hot-air flue from the coke-ovens to the furnaces, and a machine for drawing coke out of the ovens. The hot-air flue is on a small and experimental scale, but it saves the salary of the superinten-

SIX YEARS OF THE STEEL TRUST

dent. It is the simplest possible arrangement. A brick flue runs underground from the coke-ovens to six furnaces, and carries the hot air to the boilers. The greatest distance between any oven and the furnaces is seven hundred feet. The heat obtained registers eighteen hundred degrees, and can be regulated by dampers. It costs nothing, except for bricks and labour. For three years it has been saving eight hundred bushels of coal a day, besides the wages of stokers. As the corporation has about eighteen thousand blazing coke-ovens, all wasting their heat except the few at Uniontown, this brick-flue idea may become an important saving, especially if the price of coal is increased.

The coke-drawer has not proved such a complete success, being liable to break the coke; but when it is improved and made to act more gently, it will displace thousands of Huns and Slavs. The one now in operation can do the work in one-sixth of the time formerly required. By means of a hook and an endless carrier, it both draws the coke and loads it on the cars. Sooner or later it will revolutionise the whole coke trade.

A GREAT NEW STEEL CITY

Under the head of improvements, the Steel Trust has even begun to build a whole city—a city as large as Albany, Richmond, or Atlanta. Gary, as it will be called, is near Chicago on the Indiana shore of Lake Michigan. It will be by far the largest made-to-order city in the world. There will be a square mile of furnaces and steel-mills, with eighteen thousand men making five times their own weight of open-hearth steel every day.

One year ago the city was begun. A river was pushed out of its bed; a town was moved out of the way; and another was bought to house the workmen. In four years, perhaps, it will be finished. It will be a municipal-ownership city.

THE ROMANCE OF STEEL

The workmen will have a chance to own their homes. Saloons will be forbidden; and a park will stretch along the lake shore. Fully seventy-five million dollars will be spent on the plant alone, making it without an equal in any country.

All along the line of smoke in Pennsylvania and Ohio the same story is told—"everything that the corporation builds is first-class." In the ore regions the little wooden ore-cars are being replaced by large steel cars. Last year nearly a hundred million dollars' worth of ore was taken out, and about five millions spent on improvements. In the ore fleet we find that the smaller ships are being sold, to be replaced by steel vessels of the largest and latest model. Last year four new ones were built, nine feet longer than the longest on the Lakes, and carrying ten thousand tons apiece. These steel ships are standardised to such a degree that they can be lengthened when necessary. Seven were recently pulled apart and made seventy-two feet longer. At Youngstown, where there is more room for growth than in Pittsburgh, fifteen thousand people have lately been added to the city's population by a twenty-million-dollar addition to the works of the United States Steel Corporation. And so we might continue through several pages.

Instead of the old "hit-or-miss" methods of making steel, a steel plant has now become a vast chemical laboratory. An order comes to-day with the exactness of a medical prescription. Here, for instance, is one which I was permitted to copy:

Send me 5000 tons pig—2 per cent. carbon, less than 0.1 per cent. phosphorus, 2 1-2 per cent. silicon, and no sulphur.

Making iron and steel is not only a trade. It is a profession, and may some day be an art..

From Alabama to Minnesota, and from Connecticut to Colorado, I asked this question:

SIX YEARS OF THE STEEL TRUST

"Has consolidation given more or less stability to the trade?"

"More," was the answer, without a single exception. The price of steel rails, after twenty-five years of zig-zagging between seventeen dollars and seventy-five dollars, was nailed fast at twenty-eight dollars a ton. The railroads tried to break the price to twenty-three dollars during the slump of 1903. Recently several companies offered thirty-two dollars—four dollars more than the market price—in order to have their rails immediately delivered. Both offers were refused.

"Our price is twenty-eight dollars a ton—no more, no less," said Morgan.

As a result, the railroads are being taught to order rails steadily, instead of waiting for slumps and bargain sales. Ore, too, has been steadied to about three dollars a ton, and freight rates on ore have been made uniform.

THE STEEL TRUST AND ITS WORKMEN

In regard to labour, the Morgan policy has been to secure stability by first destroying trade unions and afterward permitting the employees to become stockholders. Several months after the corporation was organised, the Amalgamated Association of Iron and Steel Workers—or what was left of it after the decisive defeat of Homestead—picked a quarrel over a small issue, and declared war on the big company. Probably not more than ten per cent. of the workmen belonged to the union, but it issued manifestoes ordering a hundred thousand to quit work.

"We must fight or give up our personal liberties," said one of the leaders. "The United States Steel Corporation thinks you were sold to them just as the mills were; but when you strike, Wall Street will tremble!"

On the contrary, Wall Street paid little or no attention to

THE ROMANCE OF STEEL

the strike. Stocks fell three per cent. and rose again. The labour leaders found that going to Morgan was a different proposition from going to John Fritz or Captain "Bill" Jones. "Schwab treated us well—Morgan did not," said one of the labour leaders as he came down the steps of the Morgan office. The probability is that Morgan knew the truth—knew that the Amalgamated Association was a lath painted to look like iron, and treated the leaders accordingly. After an ineffective strike of two months or more, all the workmen returned to work.

In three ways, at least, the strike had been a positive benefit to the corporation. It had demolished the Amalgamated Association, raised the prices of steel, and enabled Schwab to dismantle the out-of-date mills and concentrate the plants. Since then the corporation has been strictly non-union. Schwab went so far as to make anti-union speeches. There was to be none of the old mutualism between capital and labour under the new régime. The corporation was not a democracy in which the authority came from below. It was a feudalism of capital, in which power moved from Morgan downward, through a series of distinct gradations.

But it was to be a "benevolent feudalism." There was no intention of turning the wage system into a wage slavery. To keep the workmen loyal and content, a method of profit-sharing was worked out. George W. Perkins was its originator, having tried a similar plan with his life insurance agents. He proposed to offer a certain quantity of preferred stock every year to the employees. To prevent speculative purchases, no one would be allowed to buy more stock at one time than one-fifth of his yearly wages. Those who lacked the cash could pay in instalments, and special inducements were offered to those who remained in the employ of the corporation for five years. In this way the company forged another weapon against unionism and strikes.

SIX YEARS OF THE STEEL TRUST

As soon as this plan was seen to be a success—for more than twenty-seven thousand employees subscribed for stock in 1903 alone—another step was taken. The wages of the men were “equalised.” The highly paid men were cut down from ten to fifty per cent., while the labourers were raised to \$1.80 and \$2.00 a day. In some of the works the hours of labour were increased. “I used to be able to make six dollars a day, working seven hours,” said a Pittsburgh rougher. “Now I can only make three seventy a day, working twelve hours.”

THE MAN AND THE MACHINE

In the American steel-mills the machine does more work than the man, and draws higher wages. Naturally the man feels that he and his machine are one, and not two. He wants the machine's wages paid to him; and so, no matter how high his pay may be, he feels that there has been a maldistribution of profits when he thinks of what he and his machine produced.

On the whole, a larger sum is paid to iron and steel workers to-day than they ever received before. There have been several voluntary raises of wages. Last year the Frick Coal company put seven per cent. more in the pay-envelopes of its labourers. Thirty thousand men in the Pittsburgh region are drawing nine millions more this year than last. Pittsburgh remains the place of the heaviest work and the highest wages of any manufacturing region in the world.

“We have rollers and heaters at Homestead who are still making from ten to fifteen dollars a day,” said President Dinkey.

The United States Steel Corporation has made no attempt to build “model towns” for its workmen, after the fashion of the Krupps. Vandergrift, the only “model town” of steel-workers in the United States, is now a part of the corpo-

THE ROMANCE OF STEEL

ration's dominions, but it was built previous to 1901 by George G. McMurtry. This really picturesque spot lies thirty-eight miles east of Pittsburgh. It has been christened a "workingman's paradise," and overpraised by many writers; but it remains the most attractive town among the iron and steel communities. Frederick Law Olmsted, the late eminent landscape-gardener, planned it. His hand can be seen in the curving streets and decorative grass-plots.

Apparently, the corporation has solved the problem of stability so far as labour is concerned. The workmen have neither union or leader. They have not even a spokesman who is well known and respected. All their former leaders have been swallowed up by politics. Compared with the members of a well-organised trade like the bricklayers, for example, they are not highly paid for such work as they do and such risk as they run. The ten-dollar-a-day men are few and far between. Strictly speaking, they are foreman rather than ordinary wage-workers. But the majority of the steel-workers are content for two reasons—they are making more money than they could earn in the average outside occupation, and their work is steadier than it used to be. If the "era of good feeling" has not been reached among the rank and file of the corporation, there has at least come the era of loyalty and obedience.

The danger, if there be any danger, in the labour situation will not come from the discontented, but from the servile. I have found it to be the general opinion of practical steel-makers that the trade was being pulled down by the employment of such large numbers of unskilled immigrants, who can never be trained beyond a certain point. The sudden dearth of skilled steel-workers last year shows this to be a present danger, not a future one. In the great school of steel-making, the lower grades are filled entirely with pupils who can never be promoted. The Huns, Slavs, Finns, and Italians who

SIX YEARS OF THE STEEL TRUST

form the main body of the workers never rise above the position of common labourers, except in the most unusual instances.

They have hands but no heads. Among them are no embryonic Schwabs or Coreys.

“Perhaps the reason why we have so little machinery in the coke business is because we have employed the non-inventive Huns and Slavs,” admitted a high official of the corporation. Most of the improvements have been originated by men like Jones and Fritz, who began at the bottom and worked their way up, improving as they went. It has also been found that cheap men and costly machinery make a dangerous combination. It is apt to kill the men and injure the machinery.

In the “good old days” of the puddlers, the labour force was unruly, but intelligent and teachable. To-day it is obedient, but stolid. The coke-making squad is wholly Hun and Slav. The ambitious Welsh have long since been driven out. The ore-mining squad is almost wholly Finn and Italian. Of these two, there is more hope of the Finn. In my whole investigation, I found no class of labourers lower than the Italians of the Lake Superior ore region. At a Mesaba mine I found four Italian miners living in a log shanty. When I opened the door, three were in the one bed, with no clothing removed except their boots. The fourth was squatting on the floor, eating his breakfast. For a table he had the sawed-off end of a log. In one hand he held half a loaf of bread, and with the other he helped himself from a tin dish of macaroni. No knife—no fork—no spoon! It is not the work of such as these that has made the industry great and put American steel into all the markets of the world.

THE CRITICS OF THE TRUST

So far as I have found, there is very little criticism of the Steel Trust by its workmen. The skilled men are too ambi-

THE ROMANCE OF STEEL

tious, and the labourers are too stolid, to make any open protests against the prevailing conditions. From the point of view of improvements, no fault can be found. In every line the corporation has the best that millions can buy. As for the independents, they are as blithe and care-free as though the corporation had been organised for their especial benefit. Politicians, from the first, have made little or no trouble for it. Ex-Governor Douglas, of Massachusetts, made it one of the targets in his campaign against the Dingley tariff, asserting that "the Steel Trust alone reaps eighty millions a year out of protection, and sells its steel to foreign nations for less money than it charges to us." An Arkansas Congressman, at the beginning of 1905, succeeded in having a resolution passed, calling for a public investigation of the big combine. But Morgan has not overlooked the political end. The corporation has strong friends at court; and its policy of publicity has made it our least unpopular trust.

Several theorists, both radical and conservative, have objected stubbornly to the corporation as a "social menace"; but as this story of things-as-they-are has nothing to say about theories, we can pass on. In fact, the only serious criticisms that are now being made come from the steel-makers of the old-fashioned kind, who dislike the new methods.

"When I was a young man in the steel business," said one Pittsburgh veteran, "the conversation used to be about iron and steel. Now it is about stocks and bonds."

One of the corporation's highest officials corroborated this.

"Wall Street is the rotten spot in the apple," he confessed. "But," he added, "we have overcome so many obstacles in the past fifty years that it is not likely that a handful of speculators will wreck us now."

Perhaps the most common objection I heard is that the corporation is too much of a machine. Some of the superintendents complained frankly of the lack of sentiment. They

SIX YEARS OF THE STEEL TRUST

felt like cogs in a wheel, and the feeling was not a pleasant one. Above them was a vague, impersonal power. Business was no longer a man-to-man and face-to-face affair. Far off, somewhere in a New York skyscraper, was a financial Providence that guided all things according to its mysterious will.

"We used to be working for one man—a man who knew us all personally and kept in touch with us. It's different now," said one of the men who had been a Carnegie partner.

"I have worked the greater part of my life for individuals, and a few years for corporations," said John Fritz, the Grand Old Man among the practical steel-makers of America. "If I had my life to live over again, I would not work a day for a corporation. What is often said of corporations is true—they have no bodies to be kicked and no souls to be damned. A corporation will do what none of its directors individually would think of doing. It cannot manage workmen properly. It treats them as if they were machines. It weeds out the best men—those who are intelligent and free-spirited. I believe in enforcing discipline, but I know that sullen and dispirited men never did good work and never can."

WHAT THE TRUST MEN CLAIM

But what does the Steel Trust itself say? Generally speaking, since the retirement of Schwab from the presidency in 1903, it has adopted the policy of Standard Oil—"Say nothing and saw wood." But I have been fortunate in securing from the "big three" of the corporation—Gary, Perkins, and Frick—a summing-up of what has been accomplished in its six-year lifetime.

"What have we done in six years?" repeated Gary. "Well, we have been so busy that this is the first time I have tried to sum up. In an off-hand way, I might enumerate our achievements as follows:

THE ROMANCE OF STEEL

"We have acquired extensive holdings of ore and coal of the best quality.

"We have increased the productive capacity of our furnaces and mills by about thirty-three per cent.

"We have reduced the cost of manufacturing by about ten per cent. through improvements and better conditions.

"We have improved our organisation by the careful selection of men and by the interchange of ideas among the officials of the subsidiary companies. We have established a system of civil service throughout our plants, so that a competent workman can rise to his proper level.

"We have won the good will of our employees by making thirty thousand of them shareholders in the company, and by paying them an extra bonus for continued service.

"We have systematised and extended our foreign trade. We export a million tons a year to all parts of the world, resulting in increased tonnage and profit to the company.

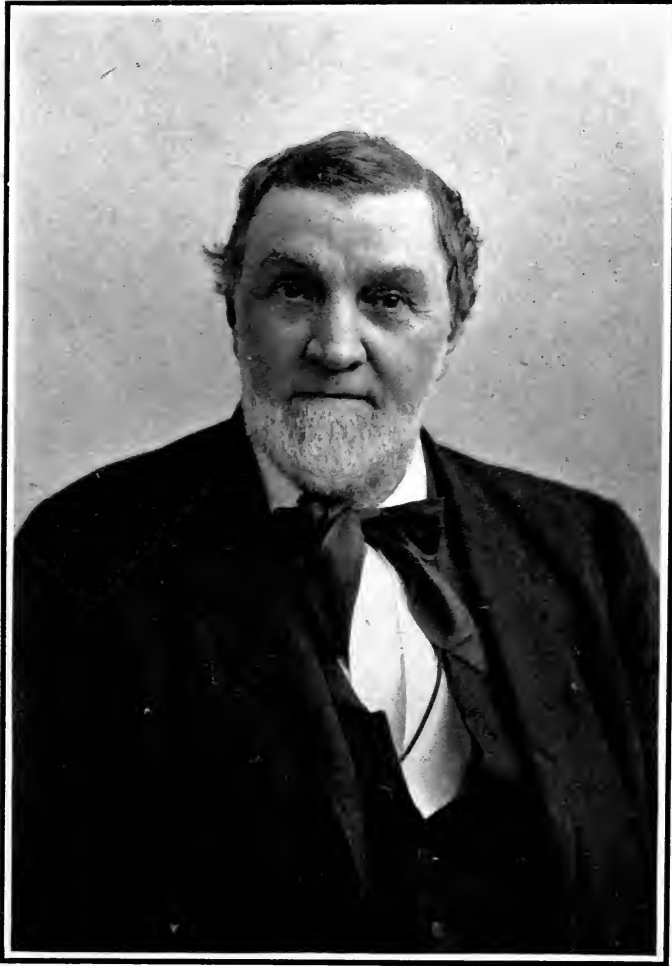
"We have established good relations with all public officials, by making public our affairs and inviting criticism.

"We are on friendly terms with all our competitors.

"We have been the most effective influence in maintaining stability—in preventing extremely low or extremely high prices.

"Last, and perhaps the greatest achievement of all, we have obtained a finance committee which has never been equalled, either for the high calibre of the men composing it or for the interest they take in its work.

"As to over-capitalisation," said Judge Gary emphatically, "I want to say this. On the basis of the actual original cost of our properties, our stock issue was excessive. But on the basis of actual present value, estimating from what the properties would cost to reproduce to-day, or from what they can earn, there is no over-capitalisation—not a dollar."



JOSHUA RHODES



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

SIX YEARS OF THE STEEL TRUST.

Mr. Frick, when asked to outline what the corporation had done in six years, was less sweeping in his claims.

"In the first place," he said, "it should be said that we have had five good years. There has been no panic—no hard year like 1896. If there had been such a year, it is a doubtful question whether or not the young corporation would have come through safely. It began business with less ready cash than it should have had. But trade was wonderfully brisk, and the company is now in good shape—much better than in 1903.

"I believe that a great mistake was made in beginning to pay dividends on the common stock from the first. Better have waited a while. But the common stock is to-day a good investment—not for small investors, but for large ones. It is only for those who can afford to wait—for those who can buy a large block of it and hold on until the big dividends come. It is a speculative stock, not a steady one for those who have small incomes.

"If the company were to be mismanaged, we have every reason to believe that the government would interfere. As long as it is well managed, as now, there will be no slump. There will be fewer ups and downs in the future than there have been in the past. To-day, if we have a bad year, we have a whole world-market for a dumping ground. A slight depression does not hurt the trade. On the contrary, in my experience, I have found that it acts as a stimulant to bring down costs."

"The two greatest achievements of the United States Steel Corporation," said George W. Perkins, "are, first, the rescue of the steel business from one-man power and from a threatened industrial war which would have had the most disastrous results upon American industry; and second, the averting of a trade depression in 1903.

THE ROMANCE OF STEEL

“Some sensational writers have said,” continued Mr. Perkins, “that the United States Steel has caused a loss of tens of millions to investors. To make such a statement is unfair. Why don’t they tell the public what it saved the country by keeping all the steel-mills and furnaces running during an unavoidable depression of trade? The depression of 1903 was the first one in the history of the world in which the average steel-worker didn’t suffer severely.

“The fall in the price of stock was temporary. Those who held on lost nothing; and as for the corporation itself, it had enough money in the treasury to pull through without borrowing a dollar. Look back over the tragic history of steel companies, and you will see that this was a wonderful accomplishment.”

In the first five years of its infancy the United States Steel Corporation has paid about a billion dollars to capital and labour—more than half to the latter. At the end of its sixth year it stands with \$70,000,000 of cash in its treasury—with more than 200,000 employees—and with a total pay-roll of \$150,000,000 a year. No other business has done so much to enrich the whole nation, or to give immense fortunes to so many individuals. Those who have followed this story from its first chapters can now understand why New York alone contains more millionaires than London, Paris, and Berlin combined. They can also realise the industrial greatness of Pittsburgh.

CHAPTER IX

PITTSBURGH

A City which Takes Rank Industrially, Not with Other Towns, but with Nations—Though Eleventh among American Cities in the Number of Its Inhabitants, This Energetic Centre Has the Largest Population of Machinery Man-Power in the World—Incidents of Phenomenal Growth—The Social and Business Life of the Pittsburghers—The Scanty Beginnings of Civic Improvement—From the Murk of the City to the Sunshine of the Suburbs—The History of the City from the Time when It Was “Shannopin’s Town” Down to the Present Day.

PITTSBURGH is more than a city. It is the acme of activity; it is an industrial cyclone. To its steel mills and furnaces there is no intermission—no rest—no sleep. The blaze of its lurid fires is as ceaseless as the roar of Niagara. That which is elsewhere called “labour” is here an untiring fury to produce. In Pittsburgh, those three half-tamed monsters, fire, steam and electricity, are shackled and goaded into a frenzy of omnipotence. It is less like industry than war—war with the stubbornest elements of nature.

What radium is among metals, Pittsburgh is among cities. Both alike seem to possess that secret of perpetual energy which science cannot explain. Mighty steel kings come and go; Hussey follows Cowan, and Jones follows Hussey, and Carnegie follows Jones, and the corporation follows Carnegie; stocks may rise and stocks may fall, but the fires of Pittsburgh blaze on, as though they were part of the earth’s central conflagration.

Like the Grand Cañon of the Colorado, there is nothing else with which we can compare it. Every word we choose has been put to smaller uses. As a manifestation of human power over the hostile forces of nature—as a region of indus-

THE ROMANCE OF STEEL

trial magic, where the push of a lever cuts through a slab of solid steel and the touch of a button strikes a two-hundred-thousand-pound blow—there is no place like Pittsburgh.

This wonderful region of sweat and gold is the arena where steel kings win their coronations. In this age of iron, it is the seat of empire, with a grandeur more substantial than that of Greece or Rome. Under the smoke its myriads of fire-demons are fashioning the raw material of civilisation. We hear little of its greatness, because its people are not gifted with speech. They are too busy to brag. They think in dollars and feet and tons, not in the flowery language of oratory. In their minds lies a lurking contempt for words. The lever, they believe, is mightier than pen or sword.

They are not below poetry, but above it. Just as the artist speaks in colours and the prima donna in song, so these grim, square-jawed Titans express themselves in world-beating records of production. It is not a triumph of labour; it is a triumph of mind. There is no other place where labour does so little and mind does so much. It is not muscle that lifts its weights and carries its burdens and shapes its massive ingots. It is mind. What is any piece of its powerful machinery but an idea that has been made tangible in steel?

Pittsburgh is a city of practical thinkers. Its supremacy among the steel cities of the world is based upon its superior brain-power, not up on its muscle or its coal. It has no use for the sort of thinking that produces nothing. Its motto is "Do!" This motto is faithfully followed by its average citizen. While the typical Pittsburgh brain is at its best in a Frick or a Julian Kennedy, there are thousands of the unknown rank and file who—though their names will never be told in any story of steel—have added to Pittsburgh's greatness by their thought and ingenuity.

The last census rates Pittsburgh as number eleven among the largest American cities. This conveys a wrong impression. This census-taker counts people only, not machinery.

PITTSBURGH

If we count the population of Greater Pittsburgh—fully eight hundred thousand—and if we add to this the manpower of its machinery—an uncounted number of millions—it could no doubt be shown that the Pittsburgh district is the most populous in the world. In no other city are the people so few in proportion to the output. The tonnage per man is absolutely unequalled.

No other American city works so hard, with both muscle and brain, to make an honest living. There are thirty-seven States, out of the forty-five, which have less to show for a year's work than the Pittsburgh region. In one short daily whirl of the earth the toiling Pittsburghers send away five hundred and seventy million pounds of useful commodities, for which they receive about one million four hundred and seventy thousand dollars. What they make in a year would fill thirty-five thousand trains of cars—every train with fifty cars and every car with fifty tons.

PITTSBURGH AND THE PYRAMIDS

The toilers of Egypt were drones compared with the strenuous Pittsburghers. To build their greatest pyramid, the Egyptian slaves—one hundred thousand of them—laboured as energetically as they knew how for more than twenty years. Volumes have been written to applaud their wonderful achievement. It has been called, by authors who have never seen Pittsburgh, "the most gigantic work in the world—one which never has been, and never will be, surpassed." But the stone the Great Pyramid contains weighs only seven million tons. Pittsburgh, in twenty years, could build two hundred and fifty Great Pyramids with the commodities which it produces. A pyramid, not of stone, but of steel and coal and glass, is merely a four weeks' job—nothing more.

The enormous traffic of the London docks is the wonder and pride of Great Britain; but Pittsburgh produces more

THE ROMANCE OF STEEL

in ten weeks than the London docks handle in a year. In fact, if the Pittsburgh district were located on an island it would require all the docks and ships of London, New York, Antwerp, Hamburg, Liverpool, and Glasgow to carry away its product.

The main word in Pittsburgh is "tonnage." The city is proud of its heavy products. Any business that deals in light materials it refers to as a "minor industry." It is not only first in iron and steel. It tops the list in glass, electrical machinery, coal, coke, fire-brick, air-brakes, cork, pickles, and astronomical lenses. The last three items are somewhat out of accord with the others; but even in the cork business there is a trade of five million pounds a year.

Industrially, Pittsburgh takes rank with nations rather than with cities. Here, for instance, is a fact which is incredible to those who have not seen the murky wonderland of western Pennsylvania. In all the populous "iron cities" of Great Britain, in the combined Sheffields and Newcastles of England, Scotland, and Wales, less iron and steel is made than in the Pittsburgh district alone. As for Russia and France, if the Pittsburgh workers secured an eight-month year they would still produce more iron and steel than both countries combined.

Germany is now straining every muscle to capture the steel-rail market; but if there were seventeen months in the German year she would still lag behind Pittsburgh. Suppose a new railway were built every year between New York and San Francisco, and double-tracked for half of the way—the men of Pittsburgh could supply every rail without working an extra day.

In the matter of coal, this tiny spot on the map of the United States owns more coal lands than Great Britain, and digs more than either France or Russia. Coal is the secret of its greatness. Underneath its neighbouring hills and

PITTSBURGH

watered valleys lie twenty-nine billion tons of the black fuel. In scores of subterranean villages the swarthy Slavs tunnel and delve to keep the insatiable furnaces fed. As long as coal remains the good genius of the human race, Pittsburgh is destined by nature to be the industrial centre of the world. It is the headquarters of the genius itself.

As if it were not enough to surround Pittsburgh with underground counties of coal, nature heaped fuel on fuel and stored the district with natural gas. Four thousand miles of pipe carry it to a thousand mills and to nearly every family. At twenty-five cents a thousand feet it pays high profits on an investment of sixty millions.

Steel men were slow to recognise the value of natural gas. As far back as 1828 an enterprising fellow named Thomas B. Campbell had secured a contract to build and care for a lighthouse at Barcelona Harbour, on Lake Erie. A mile distant was a noted "burning spring." Campbell put a fish-barrel over this spring, made a pipe of pump-logs to the lighthouse, and lighted a flame that burned for thirty years.

But Pittsburgh made no attempt to use natural gas until 1875, when Spang, Chalfant & Co., and Graff, Bennett & Co. piped it in from wells seventeen miles distant. Nine years later George Westinghouse took up the problem in his large way and made the use of natural gas common throughout the region.

In Greater Pittsburgh (Pittsburgh, Allegheny, and fifteen workshop towns) the total yearly earnings through the sale of products amounts to almost half a billion dollars. Out of this, about seventy-five million dollars is put into the pay-envelopes of the one hundred and fifty thousand workmen. The rest goes for machinery, interest, raw material, and profits. It it were the deliberate purpose of Pittsburgh to manufacture millionaires, it could probably, out of its gains, equip about a hundred and fifty every year and send them

THE ROMANCE OF STEEL

out as its finished products. Such is the affluence of this land of fire and smudge.

"What do you think? These strikers make more than I ever could in the law business," exclaimed an astonished member of the Congressional committee in 1892, during the Homestead investigation. This is not a matter of surprise in Pennsylvania, where the earnings of a worker in the steel-mills often overtop the incomes of professional men. One young roller whom I met in Pittsburgh said:

"I was a school-teacher for several years, but the pay was too small. I resigned, and went to work as a labourer in a steel-mill. In eleven months I was promoted to be a roller, and earned nine dollars a day. My rise is regarded as exceptional, but it shows what can be done."

The famous Pennsylvania pay-car of the United States Steel Corporation is one of the world's wonders. No other car distributes a million a week. Twice a month it rolls its welcome way through the shops and ore-yards. The workmen are paid while at work. The car has four pay-windows. Inside stand Paymaster W. H. Corbett and his eight assistants. Heaped around them are bags of gold, boxes of silver, bundles of fifty dollar bills.

"If a man's pay is over fifty dollars, he gets a bill to start with," said one of the pay squad. "All smaller stuff is gold and silver. It is cleaner and not so liable to cause mistakes."

The men step up quickly—nothing is done slowly in Pittsburgh, outside of its municipal activities.

"What's your name?" snaps the paymaster.

One of the clerks finds the name, calls the amount, checks it off, and the handful of money—orange-backed, yellow, and white—is handed to the workman. Four steady rivulets of money flow from the four windows. To pay out two millions in a day without the loss of a nickel is the work of an ordinary pay-day. Every workman in western Pennsylvania

PITTSBURGH

knows the car. It is easily distinguished as it moves through the mill-yards, escorted by five of the Carnegie police. To "follow the car" has become a regular profession among the cripples, beggars, and hand-organ men of the region. They have discovered that when a mill-worker has a fistful of gold and fifty-dollar bills he is likely to be generous with his silver.

There are one hundred and seventy-four banks and trust companies in this smoky Klondike. You will find thirty of them wedged together in two blocks of Fourth Avenue—the Wall Street of Pittsburgh. Into their steel vaults are crammed over three hundred million dollars of deposits, and their total resources are not far from half a billion. Highest among the banks looms the Mellon National Bank, with twenty-five million dollars of deposits; and towering among all the trust companies is the Union, with thirty-two million dollars in its keeping. Both are controlled by the powerful Mellon-Frick alliance. The Union Trust is the masterpiece of Pittsburgh finance, with nineteen million dollars of surplus and profits, and stock worth *thirty times its par value*. The Farmers' Deposit Bank, which was started in 1832 in a small back room by a few young Scotch-Irish teetotalers, now houses its twenty-two million dollars in a magnificent twenty-four-story skyscraper.

THE SPREAD OF THE SUBURBS

No map of this changeful district, to be reliable, can be more than five years old. For fifty miles up and down its rivers young towns are being created around new industries. The two latest are Monessen, the tin city, and a steel-car city on the edge of Allegheny. In the latter place, eleven thousand workmen roll out more than two hundred new steel cars every day as their contribution to the wealth of the world.

THE ROMANCE OF STEEL

An unusually swift system of electric cars keeps these smaller communities in touch with the centre, and conveys the idea to the average Pittsburgher that his city is the hub of a vast wheel of empire. He has no clear idea as to the precise boundaries of this empire. Wheeling, Youngstown, Newcastle, Uniontown, and Connellsville are reckoned to be colonies of this industrial Rome. In fact, several years ago Andrew Carnegie said to an audience of Pittsburghers, in a flight of chamber-of-commerce rhetoric: "Pittsburgh sits here, with one wing covering the East and the other the West, her beak dipping into the Great Lakes and her tail flapping in the Gulf of Mexico." Truly, a mighty bird!

Naturally, Pittsburgh feels itself to be more than local. Its customer is the whole world. From a far Northwestern wilderness, a thousand miles by land and lake, comes its ore. Its steel rails cross Siberia, connect Alexandria with the Pyramids, and link Joppa with Jerusalem. Its dynamos light up St. Peter's at Rome, the mosques of Constantinople, and the pagodas of Peking. In time of war battle-ships are protected by its armour-plate and pierced by its shells. In every city where steel is bought there is a Pittsburgh envoy—blunt, forceful, and persistent, building up its fame and adding to its revenues.

What Pittsburgh has done for American civilisation can never be measured. This was a twenty-mile-an-hour country until Pittsburgh got busy and furnished us with cheap steel for rails and bridges. Our cities were little three-story communities until it gave us skyscrapers. In fact, in the whole United States there is scarcely a street or building, or even a furnished room, in which is not some article that was made in Pittsburgh.

The great bulk of its capital remains at home, because of this extraordinary business activity. It is called for by improvements and new undertakings, and falls far short of sup-

PITTSBURGH

plying the demand. At present the Pittsburgh savings-banks are clamouring loudly for any number of millions, and the Stock Exchange is kept busy mainly by the buying and selling of local stocks.

THE SHIRT-SLEEVE MILLIONAIRES

Pittsburgh has about one hundred shirt-sleeve millionaires and a very few silk-hat ones. Without a single exception, the steel kings and coal barons of to-day were the barefooted boys of yesterday. In this respect no other city is as genuinely republican, as thoroughly American, as Pittsburgh. Its motto might be "From rags to riches"; and its name should be spelled—Pitt\$burgh. It is a region where even yet "all men are born free and equal"—where the ladder of opportunity has rungs that reach to the bottom. It is a land of money; but more, it is a land where the average man has received a squarer deal in the game of life than he would have got anywhere else—where the prizes are not bequeathed from strong fathers to feeble sons, but carried off by the "fittest" in each contest.

Pittsburghers have no pedigree. They want none. They are themselves a generation of ancestors. The few aristocratic landowning families are being bought out by the iron and steel men. No "gentlemen" emigrated to western Pennsylvania. From first to last it was settled by plain, ordinary people, who had nothing to help them except their own efforts. Among the earlier iron kings not one had a college education. Christopher Zug and Curtis G. Hussey—two stately figures—were the sons of poor farmers. Thomas M. Howe and Joshua Rhodes were grocery-boys. Aaron French and John J. Torley were child workers in iron-mills. There is not one conspicuous exception to this rule. The greater greatness of Greater Pittsburgh is in the fact that it has been created by the rank and file of the human race. It is the extraordinary achievement of ordinary men.

THE ROMANCE OF STEEL

Until twenty years ago, the bulk of the Pittsburghers were Scottish-Irish, English, and Welsh. To-day there are in Pittsburgh and Allegheny about eighty thousand Germans, forty thousand Italians, fifty-five thousand Poles, thirty-five thousand Huns and Slavs, fifteen thousand Jews, two thousand Greeks, and two thousand Assyrians, besides a number of negroes. You may hear thirty languages on the streets. Out of every nine inhabitants, four are foreign-born. So it is a community with little national prejudice. If a man is efficient, it makes little difference whether or not he speaks broken English, or uses bad grammar, or wears torn clothes and a soiled collar. Under such a smoke-cloud no one can be clean. In such a labyrinth of workshops no one can be a dandy. And among so many dialects every man sees the folly of claiming superiority for his own.

AN INCONSPICUOUS MONEY-MAKER

In Pittsburgh, all that is gold does not glitter. The thick-jawed workman who sits beside you in the street-car may be the chief of five thousand men. In business hours, at least, it is difficult to tell the average millionaire from his janitor. It is said that once upon a time one of these ordinary-looking Titans of industry entered a New York jewellery store. The clerks first ignored him, supposing him to be a rural sightseer. When he asked to see some silver plate he was turned over to a young salesman, who indifferently pointed out some of the cheapest goods.

“Show me your best,” said the rough-looking old man.

The cynical clerk placed before him several pieces of the most artistic silverware that the hand of a silversmith can fashion, and then smote him with the price, expecting it to be a finishing blow. “This is twenty-seven hundred dollars,” he said. “This is thirty-five hundred dollars, and that is five thousand dollars.”

PITTSBURGH

"I'll take them all," quietly said the ungloved, unshaven customer. "Now show me some larger pieces."

The clerk gasped, then deferentially brought to notice the finest treasures of the show-case. The old Pittsburgher added piece to piece, until his bill was sixty-five thousand dollars. Writing out a check for the full amount, he handed it, with his address, to the astonished salesman, walked out of the store, and—hailed a street-car.

"Is this check all right?" asked the clerk of the cashier.

"All right?" exclaimed the cashier. "Why, that's Lockhart, of Pittsburgh! His signature would be good in this store for fifty million dollars."

Still more recently one of Pittsburgh's inconspicuous millionaires of steel was arrested at night outside his own door by a policeman who mistook him for a burglar. In spite of his threats and protests, he was thrown into a cell with two common drunks and left unidentified until morning. Several of Pittsburgh's wealthiest men have not grown out of the frugal habits which they formed in previous days of poverty. Of one—a bank president—it is said that his usual meal at noon consists of a five-cent glass of beer and the cheese and pretzels of the free-lunch counter.

But in the last half dozen years Pittsburgh has become more than a workshop. It is now in process of growing into a real city, with homes instead of shelters, avenues instead of roads, and air instead of smoke. At present, enough of the old remains to contrast strikingly with the new. It is a city of heavens and hells, of green hills and smudgy valleys, magnificent parks and narrow alleys, resplendent palaces and grimy hovels. The business section, crammed and glutted with wealth, is still hedged in by slums where the struggle of trade is for pennies. For the student of social conditions, Pittsburgh is an impressive study in black and white.

THE ROMANCE OF STEEL

IN DEFENCE OF SMOKE

The wealthy Pittsburgher has developed to the point where he demands every possible luxury for his home, but as yet he has no wish to spend his business hours in cleanly and beautiful surroundings. He is even somewhat boastful of the smoke.

"Smoke means business," he says complacently, taking a cinder out of his eye. Narrow, badly paved streets run in front of banks that are bursting with the wealth of kings. The millionaire Pittsburgher makes no protest. He does not even think of any as he splashes through the mud-holes. If his streets were ladders he would run up and down without a murmur. He is busy. As long as he is picking up millions, what matters if he finds them in the dirt?

Industrial and financial Pittsburgh has no trees, no parks, no statues, no fountains. Its only work of art is the superb stained-glass window in the main entrance of the Frick Building. In the arid yards of the furnaces and steel mills there is no room for a blade of grass. And in the dingy labourer's cottages there are a hundred thousand bedraggled women, fighting a desperate but hopeless battle against dirt and smoke. Truly, to paraphrase Kipling, if work and murk be the price of millions, Pittsburgh has paid it in full.

The city has always its pillar of cloud by day and pillar of fire by night. A yellow haze hangs over the region, as though reflecting the gold-making that is going on below. Floating rivers of dense black smoke flow from hundreds of chimneys and flood the streets between the skyscrapers. At night the scene is one of lurid grandeur—a continuous fire festival. Looking from one of the cliffs that tower over the city, it seems as though a miniature sky, inverted, lay below, with here and there the blaze of a comet or the flash of a meteor.

Until 1898. Pittsburgh had practically no stock exchange.



HOMER J. LINDSAY



PITTSBURGH

There was an idle group of a hundred brokers, who had paid a hundred dollars apiece for their seats. They had no building, and little business. Then the launching of three local stocks—a street-railway merger, Crucible Steel, and Westinghouse Air-Brake—boomed the sale of stocks up to two million six hundred and fourteen thousand shares a year. About the same number were sold in 1899, and in 1900 the sales were nearly doubled. In the notable year of 1901 the Steel Trust excitement sent the sales up to almost five and a half millions.

The stock exchange took in thirty new members, at ten thousand dollars apiece, and used the three hundred thousand dollars in the erection of a handsome building in the heart of the banking district. Strangely enough, it stands on the exact spot where the local branch of the United States Bank once stood, before it was struck by the lightning of Andrew Jackson's anger.

It is said that "shoemakers' children are worst shod," and this proverb may well be applied to Pittsburgh in the matter of iron and steel. For years after the skyscraper age had begun in Chicago and New York there were no high buildings breaking the sky-line in any part of western Pennsylvania. The Carnegie Building was the first tall steel-frame building in Pittsburgh. It was more than a nine days' wonder. Every one regarded it with the keenest curiosity. Public opinion finally agreed that it was being erected as an advertisement of the Carnegie Steel Company—a freakish notion from the brain of the "flighty" little Scotsman. The steel for a thousand lake and ocean steamships was made in Pittsburgh; yet the boats upon its own rivers are of the old-fashioned, wooden, stern-wheel type—necessarily so, say the river men, because of the shallowness of the rivers. Pittsburgh stands ready to furnish to other cities floating docks of steel, but along its own water-front there are practically no docks at all—nothing but anchored barges of wood. In nothing but the one item of

THE ROMANCE OF STEEL

bridges is Pittsburgh more opulent in the uses of iron and steel than other cities of equal size.

PITTSBURGH AND THE RAILROADS

"The weakest link in Pittsburgh's greatness is the railroad," said Willis L. King, one of its steel millionaires. The Pennsylvania Railroad may be said to be its best friend and also its worst enemy. Pittsburgh can neither get along with it nor without it. For over fifty years—ever since the first engine that crawled across the Alleghenies was welcomed with joy—there has been a bitter war between the railroad corporation and the citizens.

When the Carnegie family travelled along, inch by inch, from New York to Pittsburgh, in 1848, it was a two weeks' journey, by way of Buffalo and Lake Erie. To-day it takes nine hours. Passengers fall asleep in the one city and awake in the other. But there has never been a time, either in the earlier or in the later days, when Pittsburgh was satisfied with its transportation facilities. It fought with the waggoners in 1820 until they cut the trip to Philadelphia from twenty-five to fifteen days. It hurrahed for the canal that was finished in 1829, and soon afterward called it "the old State robber," and waged war on the officialdom that mismanaged it. And although the railroads have been spending money like water to satisfy the city's demands, they find themselves unable to silence the call for more cars and lower rates.

There is room in the Pittsburgh railroad yards for sixty thousand cars. There is a one-hundred-mile belt line around the manufacturing region. The tracks in the yards would reach from New York to Buffalo. Of passenger-trains, there are a thousand in and out of Pittsburgh every week-day. In the last six years four railroads have paid out in Pittsburgh, for all purposes, more than a quarter of a billion dollars.



H. B. BOPE



PITTSBURGH

George Gould has lately spent twenty-five million dollars to give the district a competing line to the West, and is spending an equal amount for spurs and terminals. He is also about to give it a short line to the sea, making Baltimore its seaport. Yet the insatiable Pittsburghers cry for more. If they were makers of jewellery or watch-springs, the item of transportation would be insignificant. But as they are sellers of the heaviest and bulkiest of commodities, the question of cheap freightage is a "paramount issue."

THE PROBLEM OF WATERWAYS

At present the river traffic consists mainly of coal-barges. A single steamer has been known to guide fifty barges to New Orleans, every barge loaded with a thousand tons. For a boat of any size the Ohio River is not navigable up to Pittsburgh for more than one-fifth of the year. Consequently, two big waterway projects have recently been launched—a ship-canal north to Erie and the canalisation of the Ohio River south to Cairo. The latter project has been taken in hand by Congress, and a Congressional committee has been escorted along the thousand-mile route by enthusiastic Pittsburghers, welcomed at every stop by the screeching of whistles and the cheering of swarthy workmen.

Pittsburgh has done little for itself in the improvement of its rivers. It has lacked the civic enterprise to do for the Ohio what Glasgow did for the Clyde. Within recent years it has not spent more than one dollar on its rivers for every one thousand five hundred dollars spent there by the nation. In such matters of social self-help it is still a novice.

But the city that has mastered the problem of production in so short a time will not, in the end, be balked by the difficulty of transportation. By the time the boys who are now in its public schools become citizens, Pittsburgh hopes to be send-

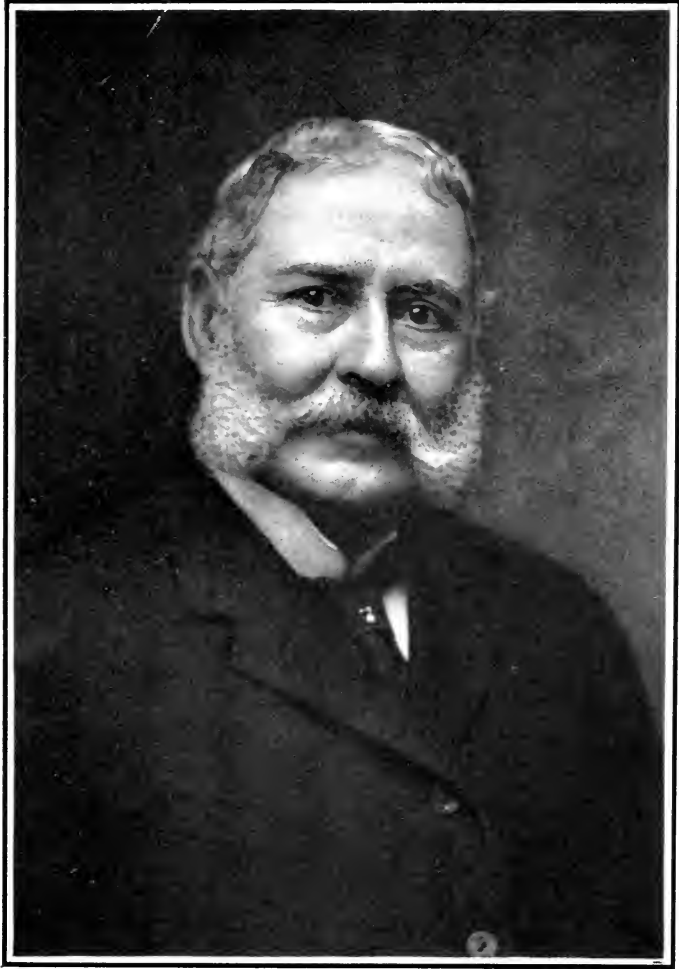
THE ROMANCE OF STEEL

ing its steel rails and beams and billets to San Francisco without unloading, by way of the Ohio River and the Panama Canal; and to the ports of Europe, by way of canal to Lake Erie. To-day almost every manufacturing site along the Ohio for a hundred miles below Pittsburgh has been secured, and it is probable that before twenty years have passed the river will be fenced with smoking workshops, with Pittsburgh at one end and Wheeling at the other. The era of steamboating will begin again, with more than the glory of ante-bellum days.

THE PALACES IN THE SUBURBS

Suburban Pittsburgh—a region little known to outsiders—is a chaos of magnificence. Its mansions are veritable museums of all that is costly and unique. The art stores of New York, Paris, London, Vienna, and Berlin have been ransacked to furnish them. Many of the masterpieces of European artists hang on their walls. Liveried servitors, silent and automatic, wait for orders. All that money can buy is in the palaces of these men who, with scarcely an exception, were born and reared in the three-roomed cottages of the poor. Mr. Carnegie's phrase, "Triumphant Democracy," has a very definite and vivid meaning to those who drive from end to end of Highland Avenue or reconnoiter the aristocratic fastnesses of Sewickley.

Best of all, these palaces are also homes, with very few exceptions. These iron and steel barons married for love. Not one married a fortune. With Mr. Carnegie as the one exception, they married in the days of their poverty—when they had nothing to offer but ambition and affection. William E. Corey, president of the United States Steel Corporation, and Julian Kennedy, Pittsburgh's most eminent engineer, both married schoolmates. H. C. Frick and Thomas M. Carnegie selected the daughters of iron-makers. Henry W. Oliver, who



W. H. SINGER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

PITTSBURGH

left over forty millions to his widow, married her in her father's house—a dingy little wooden cottage. A. R. Peacock, J. G. A. Leishman, and W. L. Abbott were clerks when they were married; Homer J. Lindsay and Henry P. Bope were stenographers; F. T. F. Lovejoy and W. C. McCausland were bookkeepers; and A. R. Hunt was a roller.

Highest of all the Pittsburgh heavens is Sewickley Heights. Twelve miles down the Ohio River lies the select village of Sewickley, in which all vulgar street-cars are forbidden; and along the high slope behind it, looking as though they were the boxes of a vast opera-house, stands an array of stately homes. All are built after the fashion of baronial castles, with imposing entrances and winding roadways from gate to house. Fortunes have been spent in landscape gardening, some of the designs being "fearfully and wonderfully made." Hills have been hollowed into valleys, and valleys have been heaped into hills. Most of the owners of this smokeless, slumless Eden are steel millionaires. It was founded by the late B. F. Jones, who built, not only a mansion for himself, but also one apiece for his three daughters. To-day, among his neighbours are Mrs. Henry W. Oliver, W. H. Singer, Mr. Scaife, and Mr. Snyder—all owners of iron and steel fortunes.

Three titled foreigners—two counts and an earl—have captured Pittsburgh heiresses and become the city's most distinguished social curios. Another ten-million-dollar heiress supplied it with a romance last year by rejecting an Italian count and marrying a fortuneless lawyer who had been her sweetheart ever since their childhood days. The young heiress had been engaged to the count, but when arrangements were begun for the marriage he destroyed its poetry by demanding that all his debts be paid, and that he receive fifty thousand dollars cash down and an income of ten thousand dollars a year. The indignant young lady, being an energetic Pittsburgher, at once turned him adrift and selected a bridegroom

THE ROMANCE OF STEEL

who loved her for herself alone. The international marriage which has probably pleased Pittsburgh most was that of Sir George Howard Darwin, eldest son of Charles Darwin, to Miss Du Puy, whose father was a steel-maker of the pre-Carnegian period.

INDUSTRY AND ART IN PITTSBURGH

In the matter of art and letters, Pittsburgh has little to offer. It is too young, too busy, too breathless. It buys books, but does not write them; pictures, but does not paint them; music, but does not compose it. Its appreciation of art and literature at present is mainly in the sense of ownership—nothing more. To expect Pittsburghers to be artistic is to expect too much. As well might we censure a locomotive because it cannot climb a tree. The Pittsburgh mind interprets everything in terms of tonnage and production. One of the steel kings, for instance, was recently talking of the weird light, like the Alpine glow, that is seen in the Pittsburgh sky at night.

"Yes, sir, it's fine," said he. "No artist can paint it. They have often tried, but they fail every time. Why, they don't even know the chemistry of it!"

Pittsburgh has had one great song-writer—Stephen C. Foster, author of "Old Folks at Home"—and one poet—Richard Realf. It has secured such eminent musicians as Victor Herbert, Emil Paur, and the late Frederic Archer. So far as education is concerned, it is the land of the public school. Its one large institution—the Western University, has barely a thousand students, and has never been supported as it deserves to be. The average Pittsburgher has been self-taught and self-trained. He owes little or nothing to the halls of learning. Mr. Carnegie has recently done his best to remedy this defect in technical training by building an immense group of schools which will cost ten millions at least, and "as much more as they need," he says, "to make them the best in the world."



ALEXANDER R. PEACOCK



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

PITTSBURGH

POLITICAL PITTSBURGH

In the management of its public affairs, Pittsburgh has been a failure. The men of steel have been merely men of clay in the hands of the bosses. From richest to poorest, there has been little or no public spirit. Every one is for himself, and no one is for the city, with a few heroic exceptions. Two of the richest citizens died within the last few years and left not a dollar to the city in which they had accumulated from forty to fifty million dollars apiece. Of the twenty-five steel bridges that cross its rivers, the city owns four, and pays toll to go over the rest. Its street-car company, capitalised at eighty-four million dollars and earning a gross income of eight million dollars, grudgingly pays a tax of twenty thousand dollars a year on its cars. The company secured a charter good for a thousand years, and might have obtained it just as easily had it been drawn for all eternity. Half a billion flows into Pittsburgh's private purses every year, yet as a city it is fourteen million dollars in debt. Its workmen fill ten thousand freight cars a day, yet it lives from hand to mouth, as though it were a settlement of South Sea Islanders.

To-day Pittsburgh is content, for two reasons: first, because political conditions are much better than formerly; and, second, because the philanthropy of a few individuals has provided some of those civic necessities which its public officials failed to supply. Mrs. Schenley has given a park; Henry Phipps has given conservatories; and Andrew Carnegie is lavishing twenty-five millions or more upon libraries, technical schools, an art gallery, and a museum. Twelve years ago there were poorer buildings, muddier streets, and blacker smoke-clouds. Forty years ago there was a boss whose custom it was to shoot, horsewhip, or blind with red pepper any minions of the law who opposed him. Therefore, the boss rule of to-day seems to the average citizen to be gentle and enlightened compared with what his father endured.

THE ROMANCE OF STEEL

But in many ways there is coming a Higher Pittsburgh, as well as a Greater. The hot-blast of good citizenship has never been as strong as it is to-day, and political life is slowly but surely being refined. The Chamber of Commerce is showing the value of team-play in civic matters. Moral standards are being raised. In short, Pittsburgh is ripe and ready for leadership along higher lines. Let the right man appear—a man of intellectual and spiritual force—and he will find a rank and file well worthy of his genius.

THE BEGINNINGS OF PITTSBURGH

Pittsburgh had a late start in the iron trade. The Lynn iron-workers were making pots, sickles, and fire-engines for a century before the Pittsburgh region was discovered. Céloron de Bienville was the first white man on the spot. In 1749 he took possession of the district in the name of the French king. To prove his claim, he nailed to a tree a sheet-iron plate bearing the royal *fleur-de-lis*.

“It is the most beautiful village I have seen,” he writes—a description which will seem incredible to Pittsburghers. Where to-day the twelfth ward of the murky city stands there was then a cluster of Indian wigwams under the trees. “Shannopin’s Town,” as it was called, was noted among the Indians for its picturesque beauty. When Bienville found it, it was ruled by a vigorous old squaw named Aliquippa.

Four years afterward, a young officer in the British service—Adjutant George Washington—was sent to make investigations around Shannopin’s Town. He was tactful enough to gain the friendship of Queen Aliquippa by presenting her with a bottle of whisky; but he had several hairbreadth escapes dodging the French and the hostile Indians. An old Scotch blacksmith, John Frazier, who had become popular among the Indians by mending their guns, took a fancy to the young adjutant and pulled him out of two or three scrapes.



WILLIAM L. ABBOTT



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

PITTSBURGH

No spot in America is richer in historic associations than the Pittsburgh region. It was here that Washington began his career. The first important action of the French and Indian War was fought at Pittsburgh, then known as Fort Duquesne. It was here, where now the blast-furnaces and rolling-mills are massed most thickly, that General Braddock was defeated in 1755. That battle first suggested to the mind of Washington the superiority of colonial troops over the wrongly drilled British regulars.

When visiting the Krupp iron and steel works in Germany—an immense plant that gives employment to forty-eight thousand men—the writer was shown a tiny wooden cabin, strangely located in the centre of one of the great machine-shops. In this little house the original Krupp lived for years and ate the black bread of poverty, until his genius as a steel-maker was recognised and rewarded. It was his wish that the little cabin should be preserved, as a perpetual reminder of his early struggles. “May this memorial prevent us from despising small things and preserve us from vanity,” he wrote above the door-post.

And Pittsburgh preserves a similar memento of its earlier days—the little blockhouse which was built as a refuge from the Indians. Overtopped by skyscrapers, girt about by street-car lines, and smudged by the smoke of a hundred furnaces and rolling-mills, the sturdy little fort remains to remind the city of its babyhood.

WHISKY FIRST BOOMED PITTSBURGH

It was not iron that first boomed Pittsburgh. It was whisky. For a generation after the British had driven out the French, Pittsburgh remained a frontier trading-post—nothing more. A little handful of Scottish and Irish settlers made a poor living by swapping liquor for furs with the

THE ROMANCE OF STEEL

Indians. There were three ironsmiths in the village—Thomas Wylie, who made edge-tools “of all kinds”; William Dunning, who turned out scythes and sickles, and George McGunnele, who proclaimed himself a maker of scalping-knives and tomahawks. It was noted for “all sorts of wickedness.” Even after it had grown large enough to have four lawyers it had no church and no preacher. “This place will never be very considerable,” said a writer of that time.

Then came the Whisky Rebellion. Thousands of settlers in western Pennsylvania refused to pay the Federal tax of seven cents a gallon on whisky, defied the local authorities, raised a seven-star flag, and threatened secession. Whisky was at that time an article of universal use. It was often employed as money, a gallon being valued at a shilling. The tax, therefore, was regarded as an intolerable oppression, and for a time the “whisky boys” carried everything before them.

President Washington foresaw the danger to the Union. He called for thirteen thousand soldiers, got them, and rushed them to Pittsburgh. At once the rioters put away their guns, the leaders fled; and law and order won a bloodless victory.

When the army was disbanded many of the soldiers remained in Pittsburgh, and so transformed the village into a town. The rebellion had called general attention to Pittsburgh, the army had beaten a road across the mountains, and from this time the community began to grow and prosper.

If we may believe the fervid description of its residents, it was still a place of beauty. “This is one of the most beautiful regions in the world,” wrote H. M. Brackenridge, one of its lawyers. “It resembles the Vale of Cashmere—the Garden of Eden—or Paradise itself. Here there is the prospect of extensive hills and dales, whence the fragrant air brings odours of a thousand flowers and plants upon its balmy wings.”

PITTSBURGH

Two crystal springs bubbled up where the Frick Building now stands and rippled down through flowery fields to the river. A bower of green shrubs was built here, and on moonlit evenings the young people gathered to sing and dance and woo. There was no smoke, no steel, no skyscraper, no billion-dollar trust.

But whatever its natural beauties may have been, Pittsburgh was by no means a paradise. It could scarcely be called a civilised community a century ago. Only the most reckless and daring men in the colonies would venture so far into the perilous western wilderness. The town resembled a mining-camp much more than an organised settlement. Although the land had been bought from the Indians for ten thousand dollars and a barrel of whisky, there were still as many Indians as white men in the muddy streets.

Law was whatever the wrath of the citizens demanded. For mild offences—laziness, cowardice, slander, and so forth—the offender was “hated out” of the town. For serious offences—theft, wife-beating, or cheating at cards—he was fined, whipped, seated in the stocks, put in the pillory, branded, or deprived of his ears. Prisoners were jailed before trial, not after, as the jail was a small one-roomed log cabin, often packed like a bait-can with negroes, Indians, and whites—men and women.

THE SPORTS OF FORMER DAYS

The favourite outdoor sport was horse-racing; the favourite indoor game was billiards. The day of the races was a general festival. All work was stopped. Dozens of booths were built around the race-track. Indians and whites, parents and children, horses and dogs, were all alike in a passion of excitement. Between the races old fiddlers rasped to groups of dancers, and sharpers played card tricks for the

THE ROMANCE OF STEEL

experience of newcomers. Dennis Loughy, the blind poet, was always to be heard hoarsely chanting his famous epic:

Come, jintlemen, jintlemen, all,
Gin'ral Sinclair shall raymimbered be;
For he lost thirteen thousand min all,
In the Western Tari-to-ree.

Such was the childhood of Pittsburgh. The first discovery of iron ore was recorded in 1780 by a surveyor named Colonel William Crawford, who was burned at the stake two years later by the Indians of Sandusky. Coal was found in 1784, on top of the high cliff opposite the blockhouse. The mine-owner, who was also the miner, tied up the coal in raw-hides, half a bushel in a package, rolled it down the cliff, and paddled it across the river in his canoe.

The first iron-makers had no machinery worthy of the name. The famous tilt-hammer, which was regarded as a wondrous labour-saving device, was so simple that the mind of a Siberian Koriak might have produced it. It was nothing more than a long-handled fifty-pound hammer balanced on a post in such a way that it teetered up and down with the movement of a water-wheel. A few enterprising ironmasters increased the weight of the hammer-head, and when at last a four-hundred-pound hammer was put in place, operated by a monster water-wheel, it was regarded as the eighth wonder of the world. If it were possible to restore to life the proud possessor of that "mighty" tilt-hammer, and to place him beside the huge hydraulic press in the Bethlehem armour-plate shop, which exerts a pressure of fourteen thousand tons, it would doubtless be impossible to convince him that he was once more upon the earth, and not upon some lordlier planet.

"Everybody drank whisky in those pioneer times," says Father A. A. Lambing, one of Pittsburgh's historians. "There was better whisky then for thirty-five cents a gallon

PITTSBURGH

than you can buy now for five dollars. Many a-time, when I was a boy, have I been sent to the grocery store to trade a hatful of eggs for a half gallon of whisky for the men in the iron-works."

The hammerman, or "shingler," was the king bee of the forge. When he was drunk, the others had to quit work, which caused endless quarrelling. Squabbles and fist-fights were all in the day's work. Almost every improvement brought on a strike. When the hot blast was first used, the puddlers rebelled, claiming that it made the iron harder to work. When "squeezers" were invented, they tried to break the machinery. They balked at every step of progress made in the rolling-mill, and mutinied constantly against the pioneer steel-makers.

Both masters and men were superstitious. For centuries the development of steel-making was blocked by the general belief that some magic fluid was necessary to the making of good steel. "The mystery lies in the liquor they quench it in," said Colonel William Byrd in 1732. Numerous quacks had pills and "salts" for sale, guaranteed to transform pig iron into the best Damascus steel. One of these "steel doctors" was loud in the recommendation of raw potatoes for the refinement of iron. Others added soot, or leather, or burned horse-hoof to the molten metal. Chemistry was unknown.

The highest wages and salaries paid in the early iron business would mean pauperism in the Pittsburgh of to-day. There is scarcely a newsboy in the Smoky City who does not make more money than the first furnacemen and forgemen of Virginia and Massachusetts. From twenty to forty cents was considered a "fair day's wage for a fair day's work" when James I. was king. For a while, in Massachusetts, employers were prohibited by law from paying more than twenty-eight cents a day and board.

THE ROMANCE OF STEEL

THE LOW WAGES OF THE PAST

The first working-man in America to get a dollar a day was John Marshall, of the iron-making town of Braintree, Massachusetts. He was probably the first wage-worker in the world to climb to such a height of earning power. In the year 1700 he stood at the head of the labouring masses of all countries. Unaided by any organisation, relying wholly upon the fact that he was the best mechanic in the country, Marshall compelled the employers of his day to compete for his services and pay him his price.

Most of the early ironmasters paid the lowest possible wages, and often grumbled bitterly because their men demanded anything more than a steady job. "I wish there were more ironworks in the country," said Colonel Spotswood, "for then the employers could consult as to how to manage their workmen, and reduce their wages to what is just and reasonable." The average iron-worker at this time received about forty cents a day, seldom paid in cash.

Richard Leader, who came from Ireland to manage the first Lynn iron-works, received five hundred dollars a year and a free house. Leader was the Schwab of the seventeenth century—a competent, forceful manager, but at that time the golden age of steel was not even a dream. Up to the year 1750, the highest wage paid by any ironmaster was eighty-four cents a day, which was the rate demanded by a highly skilled Cornish mason brought over to build a furnace. An average iron-works could be bought for about fifteen thousand dollars or less.

Baron Stiegel, the best-loved employer in Pennsylvania, paid his most expensive men two hundred dollars a year, with a free house and free firewood. To the Pittsburgh roller, who often earns two hundred dollars in three weeks, such an amount seems beggary; but at the time, it was thought to be

PITTSBURGH

ruinously large. All European ironworkers received less, so that it was cheaper to import pig iron than to make it.

When the Western States began to open up, ten years after the Revolution, wages rose. In the frontier towns there was a great demand for blacksmiths. Any labourer who knew iron from beeswax could set up a little shop of his own. One desperate ironmaster advertised that he would give twelve dollars a month, board, lodging, and whisky every day, to a furnaceman. The owner of a negro slave usually received eighty dollars a year for his labour.

In an old account-book of the Hanover furnace I find that James Down is charged with six dollars, "paid him to git married." To masters and men alike, a dollar was as big as a cart-wheel. Few talked of thousands—none of millions. Silver was hard to get, and gold was as rare as diamonds. Finance was on a copper basis, so far as the wage-workers were concerned. When copper money depreciated in 1789, thousands of labourers were kept for weeks on the verge of starvation.

High wages and fabulous profits were absolutely unknown in the iron and steel trade, in any part of the world, until the Carnegie régime. It was Pittsburgh that led the way. Even David Thomas, after he had achieved fame as an able ironmaster, accepted the position of superintendent of the Crane Iron Works, at Catasauqua, Pennsylvania, in 1839, for a salary of less than twenty dollars a week. For every new furnace that he built and operated he received a raise of five dollars a week. The fear of dying rich was an unknown terror to the pioneer iron-makers of America. The masters, for the most part, were struggling with debt, and the labourers with raggedness and hunger.

In fact, while many of the early ironmasters were men of unusual force and ability, the American iron trade remained feeble and flickering until long after the Revolutionary War.

THE ROMANCE OF STEEL

The obstacles were too great to be overcome even by such giants as Joseph Jenks, the Leonards, Governor Spotswood, John England, Baron Hasenclever, and Squire Faesch. Manufactured products made in America were not as popular as those made in England, and there was a general opinion, plainly shared by Jefferson, that America was to remain an agricultural country.

An encouragement to American manufacturers was given by President Washington in the signing of the first tariff law, but it was ineffective. The first popular demand for American goods came in 1808, when it became known that the little republic had paid one hundred and thirty-eight million dollars in one year to European merchants and manufacturers. "What will become of a nation that cannot make its own socks?" asked the editors and the orators. "Why should all the knives and forks in the country come from Sheffield?" "Why should all the cloth come from Yorkshire?"

Prizes were offered for the best set of American buckhorn-handled knives. A "great industrial parade" was held at Baltimore. Soldiers were dressed in Virginian cloth. Stock companies were formed to build factories and forges. Henry Clay eloquently moved a resolution in the Legislature that every member of it be compelled to wear clothes made in America—a suggestion that became law in Virginia, Ohio, Vermont, and North Carolina. This step was opposed by many public men, Clay being obliged to fight a duel because of his prominence in the movement.

The total capital invested in the iron business at that time was estimated at seventeen million dollars—a good beginning when we remember that the whole republic had a population barely equal to that now possessed by Pennsylvania. When Washington became President the annual output of iron was

PITTSBURGH

worth about half a million dollars only. Pennsylvania had become the leading iron-making State, with an equipment of fourteen small furnaces and thirty-four forges.

Most of the ore mines were discovered by accident. A story is told in an old history of a miner named Jack Howard, who discovered a mine in a peculiar way. He was walking home from his work, taking a shortcut through the forest, when he noticed that the needle of his pocket compass was pointing west, instead of north. He told this strange fact to his employer, an ironmaster named Stephen Jackson. Jackson took a body of labourers to the spot, dug at the place indicated by the needle, and found the famous "Swedes" iron mine. In Connecticut it was a custom to hunt for iron mines with a peach rod, and weird tales were told of rods that were twisted violently out of the iron-seeker's hands by the attraction of the ore.

The problem of transportation was everywhere a nightmare to the ironmaster. No other articles of commerce were as heavy as those which he handled; and the average cost for carrying freight a hundred years ago was ten dollars a ton per hundred miles. As much as one hundred and twenty-five dollars was often paid for the transportation of a ton of freight from Philadelphia to Pittsburgh. Bad roads and high tolls made travel an expensive hardship. The average toll-gate fee was one cent per horse per mile, thus compelling all ironmasters to find a market within one hundred and fifty miles distance from their furnaces.

Exactly a century ago the first stage ran from Pittsburgh to Philadelphia, arriving in four days. Fifteen years afterwards, two-day stages were put on the road, charging a fare of seventeen dollars per passenger. Every trip was a more or less perilous adventure. "Now, lean to the right, gentlemen! All together to the left, gentlemen!" Such were the

THE ROMANCE OF STEEL

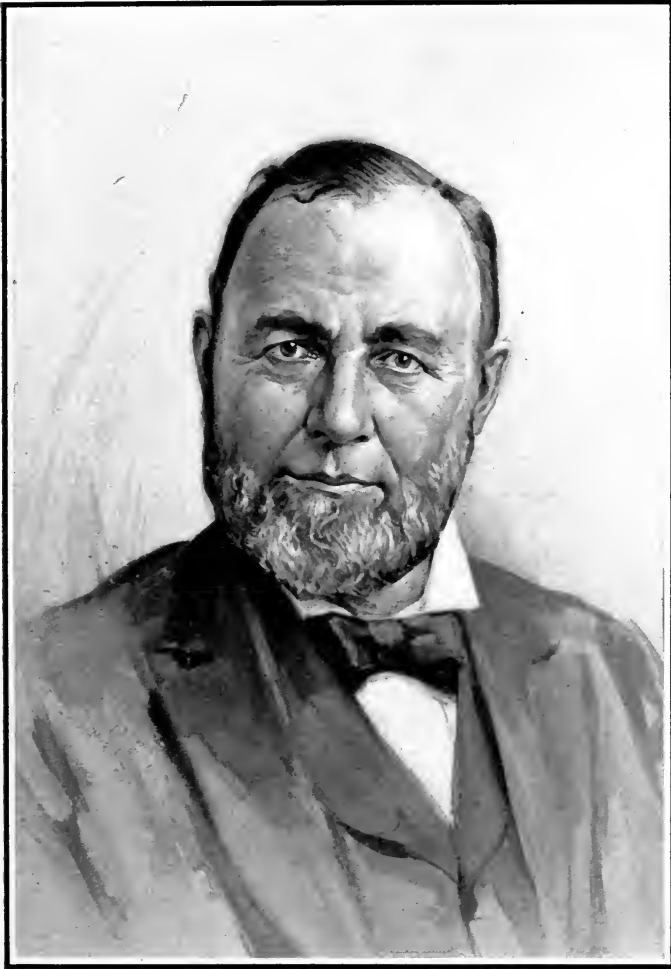
constant warnings of the driver, as the stage swayed and lurched from one deep rut to another. In all parts of the country life flowed along slowly. The scow-ferries between New York City and Brooklyn could seldom be paddled across in less than an hour. A voyage to Europe meant from forty to ninety days of discomfort and danger; and when Fulton's first steamboat, the Clermont, waddled from New York to Albany in thirty-two hours, its speed was the wonder and pride of the republic.

Iron was at first carried on pack-horses, the bars being bent into the shape of the letter U to fit the backs of the horses. These pack-horses were tied head and tail, and led in divisions of from fifteen to a hundred. Often the path was found to be washed out and horse and pack rolled down a steep slope. At other times an overhanging rock or branch would throw the pack to the ground.

When waggons were first brought into use the pack-horse drivers made a great disturbance. For years there was war between the carriers and the waggoners; and so, what with these feuds, and runaways, and upsets, and washouts, and Indians, and wild beasts, the transportation of freight across the Alleghenies was about as uncertain as it could be.

Incredible as it seems to-day, there was no railway to Pittsburgh until fifty-four years ago. Those who first proposed to build a track across the Alleghenies were regarded as insane. In 1850 a prominent government official gives the following account of an interview which he had with J. Edgar Thomson, superintendent of the Pennsylvania Railroad:

"I asked him how he expected to take the cars over the mountains. 'By locomotives,' he said. Then I saw the man was a fool. 'How long will it take from Pittsburgh to Philadelphia?' I asked. 'Fifteen hours,' he replied. Then I knew the man was a howling idiot and I left him."



J. J. VANDERGRIFT



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

PITTSBURGH

WHEN IRON-MAKING BEGAN

The iron-making of Pittsburgh began with a tragedy. A gay, fox-hunting Frenchman, named Peter Marmie, who had been the secretary of Lafayette, went into partnership with an Englishman named Turnbull and built the Alliance furnace—the first west of the Alleghenies. For five years they made iron; but Peter Marmie was not a business man. At the call of the bugle and the baying of the hounds he rushed off to the hunt and forgot his creditors. He had a short business career, and a merry one. The shock of bankruptcy deranged his mind. Before the furnace went out of blast, Marmie called his hounds around him, flung them one by one into its blazing depths, and then, with a wild halloo, sprang headlong after them.

The first furnace inside the town limits of Pittsburgh was built by a German, George Anshutz. It was a small furnace, and failed partly for lack of ore, and partly because the "Whisky Boys" burned a thousand cords of wood belonging to Anshutz. Close after him came William Porter, Joseph McClurg, and Count de Beelen, an enterprising and capable French nobleman. Of these three, McClurg did the largest business, and won the distinction of having made the first iron-trade fortune in western Pennsylvania. Joseph McClurg was the first rich Pittsburgh iron-master—the forerunner of a thousand millionaires.

By 1810 Pittsburgh was the busiest town in the Ohio Valley. It was the centre of western immigration and trade. Everything and everybody going west from Philadelphia went by way of Pittsburgh. During the seven summer months its unpaved main street was thronged with motley caravans of pioneers.

A rushing business in canoes, skiffs, bateaux, arks, barges, and keel-boats was carried on at the water-front. None of

THE ROMANCE OF STEEL

these emigrant-boats ever came back. They were broken up at the journey's end to furnish doors and windows for the little log-cabin homes of the settlers. It was in Pittsburgh that the father and mother of Ulysses S. Grant bought the clumsy barge in which they floated down the Ohio River to Mount Pleasant.

When the war of 1812 broke out Pittsburgh was the proud possessor of its first rolling-mill. It must be confessed that this mill rolled nothing but sheet iron, but it had "a most powerful seventy-horse-power engine, and a rolling-mill, tilt-hammer, and slitting-mill, all under the same roof," which made its proprietor, a Scottish-Irishman named Christopher Cowan, the foremost ironman in the county. About this time two Welshmen, the Lewis brothers, were coming across the ocean as stowaways. They made their way to Pittsburgh, and became the first rollers of bar iron in this country. A son of one of these men, who assisted his father in the rolling of the first bar, died in Pittsburgh only twenty-three years since—a striking evidence of our industrial youthfulness.

In the same year that the first bar of iron was rolled—1816—Pittsburgh was made a city. Not for nine years can the smoky city celebrate its centennial. It began with a population of seven thousand, under the leadership of Mayor Ebenezer Denny, who had begun his business career, like Andrew Carnegie, as a messenger-boy. Its manufacturing business had risen to one million eight hundred and ninety-six thousand dollars a year. In all its shops there were over a thousand workmen, who averaged from eight to nine dollars a week. There had been no bankruptcy for three years, and the iron trade was booming. One skilled steel-worker, Abner Updegraff, had actually made a penknife as good as any made in England—a feat which surprised and encouraged the young city. A few optimists went so far as to prophesy that the day

PITTSBURGH

would come when Pittsburgh would not be obliged to import iron from Great Britain and pay two hundred dollars a ton for it.

PITTSBURGH AS A PORT

Unknown to the rest of the world, Pittsburgh had even become a ship-building city. Several years afterward a Pittsburgh ship, sailing into Genoa, was held up by the officer of the port. "What's this?" said he, glaring suspiciously at the ship's papers. "You say you come from Pittsburgh? There is no such port. Five hundred miles inland? Impossible! There is some deception! There is some piracy behind these papers!" A map was produced, and with the influence of the American consul, the officer of the port was at last convinced that there was something new under the American sun.

The new business of floating coal down the river in barges brought more trade to Pittsburgh, and gave many of its future magnates a chance to begin their careers. The coal-boat men were a jolly, adventurous crew, equally ready for a wreck or a dog-fight. Their wit was shown in the inscriptions on their boats, generally at the expense of the cooks. "Three precious souls and one cook," said one. "Beauty and the Beast; Beauty missed the boat, but the cook's aboard," said another. A third bore the comparison, which delighted the onlookers at the docks: "Capacity of boat one hundred and twenty tons; capacity of cook, two quarts."

As the shops and factories increased, Pittsburgh became more and more a city of wage-workers. Its workingmen, too, became noted for their spirit of sturdy independence. Mrs. Ann Royal, who visited the city in 1828, went so far in her admiration of them as to say: "The workmen of Pittsburgh are sober, polite and gentlemanly. They are, as a body, the only gentlemen in the city. Their faces are as black as coal;

THE ROMANCE OF STEEL

but this disguise cannot conceal their noble mien and manly deportment."

In 1835 Samuel Pettigrew, the working men's candidate for mayor, was elected on the platform, "Two dollars a day and roast beef." In the same year, in a dingy, red-tiled cottage in the little Scottish village of Dunfermline, a tiny baby boy was born into the family of a poor weaver to whom "two dollars a day and roast beef" would have been a dream of affluence. But at that time the baby knew nothing about Pittsburgh and Pittsburgh knew nothing about the baby.

For sixty years Pittsburgh made iron. Then came steel. There was little or no steel made in Pittsburgh or in any other American city until 1861, when the Morrill tariff shut out the English steel and gave our steel-makers a start. The firm of Hussey, Wells & Co., of Pittsburgh, was the first to break down the prejudice that existed against American steel. Close on their heels came such men as Schoenberger, Spang, Chalfant, Singer, Nimick, Gregory, and Park. These were the "fathers" of the Pittsburgh steel business. They were men of the old school—simple, rugged, conservative; content with a progress that was slow and sure. Few of them made millions, and none grew rich quickly.

Most of these men disapproved of the new Bessemer process and of the Carnegie system of business. They were stunned by the speed—the machinery—the millions—the immense operations. Carnegie's giant furnaces and vast steel-mills overwhelmed their little old-fashioned shops. He—the reckless young Scottish plunger—was borrowing every cent he could get and staking it all on steel. And while the "fathers" stood shaking their heads and prophesying disasters the Carnegian flood rose and submerged them. In the twinkling of an eye, so it seemed, their achievements became ancient history, and in the world of steel-makers all things were new.

PITTSBURGH

Then, in 1901, came the Morgansisation of Pittsburgh. The forming of the steel trust made it the most thoroughly organised and efficient industrial centre in any country. In no other workshop of the human race is there so little of the waste and friction of competition, or so abundant and fluent a supply of capital. It is now fortified against industrial depressions. It has developed beyond the uncertainties of individual ownership. And the almost incredible story of its wealth is being carried to all quarters of the earth.

"It is the central place, and always will be," said H. C. Frick. "The steel trade will concentrate there more and more. It is my opinion that the whole organisation of the United States Steel Corporation ought to be in Pittsburgh."

After a three months' study of Pittsburgh, I have found no sign of industrial decay. There is no lagging—no looking toward the past—no decrease in energy and improvements. Back of its iron and steel business there is the irresistible push of two billions of capital. And in its offices and mills are the veterans who still hold the steel-making championship of the world.

CHAPTER X

BIRMINGHAM AND PUEBLO

The Great Iron and Steel Industries that Have Grown Up in the South and the West—Their Marvellously Rapid Development, the Natural Resources on which They Are Based, the Obstacles They Have Had to Overcome, and the Men Who Have Made Them What They Are.

BIRMINGHAM and Pueblo—the iron cities of the far South and the far West! It is here that we discover the latest and most sensational development in the world of iron.

If there be any American playwright who is planning to write the Drama of Steel, he will probably find more material in this chapter than in any of those which have hitherto been printed. While the story of Pittsburgh and the United States Steel Corporation has been one of success—of almost monotonous success—there has been in Alabama and Colorado a vivid alternation of light and shade—of marvellous victories and equally marvellous defeats; and in Colorado, at least, there has also been an element of tragedy which is not found elsewhere.

The situation in Alabama and Colorado is strikingly similar. In both States the steel-makers had first to conquer a wilderness. They had to create an industry from the ground up. Nothing was ready-made. When the first Birmingham furnace was built, there was no Birmingham; and the great Pueblo plant, now quite encircled by the city, was originally a lonely object in a desolate waste on which no living creature except the prairie-dogs had ever been able to make a home.

BIRMINGHAM AND PUEBLO

Another coincidence is that while nature has provided near Birmingham and Pueblo such an abundance of the many materials that the iron-makers need, the one item of water seems to have been overlooked. The rivers are small, except during the spring freshets; and in Pueblo the rainfall is seldom more than fourteen inches a year. The Colorado men, because of their experience in irrigation, have recently solved the problem by spending nine hundred thousand dollars on a forty-three-mile conduit; and if Birmingham carries out its present plan for a thirty-five-mile conduit neither city will need to fear thirst in the future.

These natural obstacles have been troublesome enough; but the steel kings of both States have had their enemies. They have battled with labour-unions, as Frick did in Pittsburgh, until there was nothing left to oppose them.

"There is not a union man in my employ," said both John A. Topping and the late F. J. Hearne, the two great generals of the iron and steel armies in Alabama and Colorado.

The Legislature in each State, too, was at first hostile. The steel corporations were regarded by the politicians as "big game" that could be hunted in and out of season by any one who had a fancy for the sport.

Both Topping and Hearne, so it happens, were from Wheeling. Both were high in the service of the Steel Trust, and resigned to take up pioneer work in the South and West. It is also true that several of the same capitalists have been active in both States. John W. Gates and E. J. Berwind, for example, were among the first Eastern men who invested money in the two places. And at the present time both States are linked together by E. W. Oglebay, of Cleveland, who is a director in the Colorado Fuel and Iron Company and also one of the "big four" in the Tennessee Coal and Iron Company.

THE ROMANCE OF STEEL

THE GREATNESS OF ALABAMA

The greater of the two States, in the iron and steel geography, is Alabama. In fact, there are three things in which Alabama has no equal in any part of the United States—natural resources, cheap labour, and the convenient handling of raw materials. In these, Alabama stands first. She stands second in the making of coke; third in the mining of ore; and fourth in the production of pig iron.

The men who are behind Alabama claim to have no less than forty-two billion tons of coal in her mountain ranges—enough to last the whole world for fifty years.

“We have two hundred million tons more iron ore,” they say “than the United States Steel Corporation. On an actual investment of only fifty million dollars, we have now in our possession a property worth two hundred and sixty-five millions.”

In taking these figures we must make allowance for Alabama enthusiasm, although that enthusiasm is in itself one of the State's best assets. Alabama does not need to exaggerate. The cold facts are big enough.

Until recently, Alabama stood absolutely alone. It was the stronghold of competition, the despair of the consolidators, the most ambitious and aggressive factor in the whole world of iron and steel. It was Alabama that pulled the cost of iron to its lowest notch, smashed the ore pool, upset the prices of foundry iron, and worried Pittsburgh into nervous prostration. And it is still Alabama that unsettles the future of steel and wakes up the Steel Trust from its dream of monopoly.

The Alabama iron business has no ancient history. Thirty years ago Birmingham was a corn-field. Five years later it became a village of rickety shacks. To-day it is a fairly well-built city, entered by seven railroads, and equipped with more

BIRMINGHAM AND PUEBLO

than a hundred miles of electric street-railways. It stands like a great smoky sun surrounded by a dozen little smoky moons, and all united by the interlacing of a thousand miles of mineral railroad. Its industrial army of twenty thousand, mostly negroes, made the United States richer by seventy-five millions in 1905, piling up twelve million tons of coal, sixteen hundred thousand tons of iron, and more than a hundred thousand tons of steel rails. As yet, it can scarcely be called a manufacturing centre, as the goods it produces are mainly the raw materials for manufacturers. But Alabama has arrived where Pennsylvania was twenty-five years ago, although the Southern State started seventy-five years behind. Its resources are being developed by four large corporations, composed mainly of New York capitalists. All four are independent.

There is not a dollar of Steel Trust money in Alabama, although there are persistent Wall Street rumours to the contrary. Neither is there any immediate probability that its four largest companies will consolidate. If they do, we shall then have the greater and the lesser Steel Trust—the one wholly in the North and the other mainly in the South—the one depending on white labour and the other on black—the one based on skill and the other on cheapness. Such will be the battle of the future, say some of those who take long views of the iron and steel business.

NATURE'S GIFTS TO BIRMINGHAM

Abram S. Hewitt, who had a wider range of vision than any other iron and steel man of his generation, was the first to discover the riches of Alabama. Fifty years ago he secured an option on a farm which lay where the skyscrapers of Birmingham stand to-day, and had the whole district examined by experts. Then came the Civil War, and his capital was

THE ROMANCE OF STEEL

diverted to other channels; but shortly before his death he said: "The two great centres for dominating the iron and steel of the world are to be the Lake Superior region, with its Bessemer ores, on the one side, and Alabama, with its basic ores, on the other. Alabama, with its abundant stores of iron and coal and limestone in such close proximity, bids fair within the next quarter of a century to dominate the basic steel industry of the world."

Pittsburgh boasts of her magnificent system of ore railroads and steamships. "We have no such system," replies Alabama, "for we do not need it. Our coal and ore and limestone lie not a thousand miles away, but at our furnace doors." The cost of assembling all the raw materials for making iron has been reduced, in Birmingham, to seventy-seven cents a ton. This is the lowest point ever reached in the iron business, on either side of the Atlantic.

In fact, nature has made Alabama as handy as a pantry for the men who want to make iron and steel. There is one spot especially which appeals to the imagination of all steel-makers who visit the State. Not far from Birmingham, on the top of Red Mountain, you can stand on a vein of iron ore twenty-four feet thick. On your right are the vast Warrior coal-fields. On your left are the Coosa and Cahaba coal-fields. In front of you are the level valleys, packed with enough limestone to flux all the ore in the world; and all around the railroads and mines are the greenish-yellow fields of corn and cotton, to supply the toilers with clothing and with food. What could nature do more, unless it made greenbacks and preferred stock grow on trees?

At one of the furnaces it would be quite possible for a sharp-shooter to stand on the water-tower and with a rifle send a bullet into the mines out of which the ore was dug. With a revolver he could put the men in the limestone quarries in danger; and with a pea-shooter he could annoy the

BIRMINGHAM AND PUEBLO

workers at the coke-ovens. This is, of course, an exceptionally well-located furnace; but there are few that are more than ten miles from their raw materials.

DEBARDELEBEN'S SPECTACULAR CAREER

The Christopher Columbus of this wonderful region is a man who is still alive, active, and opening up new treasure-fields—Henry F. DeBardeleben. He has been at once the most successful and the most unfortunate of Alabama pioneers. Like the blind hen which dug up worms only to have them snatched away by her lazy barn-yard companions, he has been labouring for twenty-seven years to enrich others who lacked the enterprise and hardihood. He is the millionaire-maker of the South. He earns and loses fortunes with the indifference of a stoic. If he had been as able to hold as he is to acquire he might now be the Andrew Carnegie of Alabama.

DeBardeleben was at one time owner of the greater part of Red Mountain, in which lie scores of buried millions. He was the creator of Bessemer, the Marvel City of the South. In 1892 he was probably the wealthiest man in the district, owning the pick of the ore and coal lands near Birmingham, and also furnaces, coke-ovens, and the like. The unusual sight of a pioneer in control of millions attracted the attention of a syndicate of New York capitalists. They approached DeBardeleben diplomatically, and led him on to accept two and a half million dollars for all his possessions. This was a low price, as the property was rated at three times as much a few years later; but it was a good reward for a dozen years of work, and DeBardeleben concluded to retire.

The members of the syndicate, however, had other plans for his future. Several of them brought the unsophisticated prospector to New York, and taught him the royal art of

THE ROMANCE OF STEEL

spending. He plunged into the Wall Street wilderness with his usual daring and self-confidence, but soon learned that it was unlike the Alabama wilderness in which he had found his money. In six weeks he had lost every dollar of his two and a half millions.

Finding his way back to Birmingham, he appeared, penniless, in the office of the New York corporation, asking for any kind of employment. He was taken on at a salary of twenty-five dollars a week—less than he had been able to spend in every minute of his memorable six weeks. After a short time he was discharged, and walking the streets a workless, propertyless, moneyless man, deprived by magic, as it seemed to him, of the enormous wealth he had created.

But those who imagined that his career was ended knew little of the recuperative power of DeBardeleben. Striking into the depths of the mountains once more, he took up the work of pioneering, in which he was a master, and with his usual success located new beds of ore and coal. At present he is opening up a rich district within forty miles of Birmingham.

CAPTAINS OF ALABAMA INDUSTRY

Other Alabama pioneers who enlisted in the regiment of iron and steel millionaires are the Woodwards, who came from Wheeling; James Bowron, who grew up in the iron business in England; Daniel Hillman and his son, T. T. Hillman, who made the first Birmingham iron. These men and others have become Alabamians. They are remaining in Birmingham and transforming it from a murky region of mines and furnaces into a city of comfort and beauty.

They are also accumulating local capital, so that the district shall not remain an industrial colony of New York. In the centre of the city are three banks, within a stone's throw of one another, in whose vaults more than twelve mil-



HENRY F. DE BARDELEBEN



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRMINGHAM AND PUEBLO

lion dollars has been deposited—every cent of it coal and iron money. A business of more than fifty millions was done in 1905 in mining and manufacturing, and three hundred thousand freight-cars were handled in the Birmingham district.

And who are the enterprising Northerners whose capital opened up this land of opulence? Many of them are men of national prominence, among them being August Belmont, S. L. Schoonmaker, Don H. Bacon, Cord Meyer, Benjamin F. Tracy, James T. Woodward, Alexis W. Thompson, J. Henry Smith, Henry R. Sloat, Albert B. Boardman, J. C. Maben, and G. Watson French.

These men have built up the four great companies that control the situation—the Tennessee Coal, Iron and Railroad Company, the Republic Iron and Steel, the Sloss-Sheffield, and the Alabama Consolidated. The combined capitalisation of the "Big Four" is seventy-six millions. All are successful concerns, though they are still obliged to spend an unusually large proportion of their earnings on improvements.

The Tennessee is the largest corporation in the South. Half of the coal, iron, and coke, and all of the steel made in Alabama come from this giant company. Its magnitude is the wonder and pride of Alabamians. With an output in 1905 of more than two million tons of coal, six hundred thousand tons of iron, a million tons of coke, and two hundred thousand tons of steel—with a property of seven hundred square miles and dozens of mines and furnaces—it has become one of the most effective millionaire-making machines in the country.

In the last five years it has paid out seven millions to capital and twenty-five millions to labour. It has spent seven millions to bring its mills and furnaces up to the Pittsburgh level; and it is now adding to the wealth of the United States

THE ROMANCE OF STEEL

at the rate of twelve millions a year. Every year it wrenches from Nature enough of her treasures to fill a freight-train that would reach from New York to the heart of Nebraska. While many of its mining methods are primitive, its steel-mill at Ensley is one of the most completely automatic in the world—operated for the most part by the touching of electric buttons.

Within the last two years the Ensley rolling-mills have shot to the front rank by making the first open-hearth steel rails. Prior to this, all the steel used for rails had been made by the Bessemer process. Several high authorities, including a superintendent in the employ of the Steel Trust, told me that the new Ensley rails were "the finest in the world." The heavy tonnage on many railroads has created a demand for a higher quality of rail, and the Ensley men have been the first to supply it at a low enough price.

How the Tennessee Coal and Iron was reconstructed—how one stern, strong, rugged man went down from Minnesota and began to transform it from a ramshackle concern into the giant of Southern corporations—is a story in itself, sparkling with adventure; and some day, let us hope, an Alabamian Sir Walter Scott will arise and tell it in full.

Don H. Bacon is the name of the man from Minnesota. Like ninety-five per cent. of the steel kings, he was a graduate of the School of Toil. He began in a telegraph office. When the amazing iron-mines of Minnesota were first uncovered, Bacon was one of the crowd that surged into the State. He was only one of the leg-weary rank and file when he arrived; but when he exchanged the North for the South, in 1901, he had become president of the Minnesota Iron Company.

Bacon is a man of the "Old Hickory" sort. He would sooner work than play; and he got his fill in Alabama. He found that the Tennessee Coal and Iron was an immense, loose-jointed concern. Its ore and coal lands were vast, but

BIRMINGHAM AND PUEBLO

its equipment was a medley of makeshifts. In New York it was looked upon as a Wall Street football. Its stock went up and down with every breeze of rumour. Its finances were a puzzle. The whole company had been slung together in a very slipshod way.

Bacon was not allowed to have a free hand in his work of reconstruction. The company had passed into the control of J. T. Woodward, an able New York banker, who knew much about finance but nothing about iron. In spite of this handicap, Bacon began his house-cleaning with a vim that startled the whole State out of its easy-going ways. He fought a two-year battle with the coal miners' union, and won. He imported Huns, Slavs, Greeks, Servians, Italians, and Finns to replace, in part, the unreliable negroes. And, although he was a miner rather than a steel-maker, he worked out a new duplex process of making steel—a combination of the Bessemer and open-hearth methods—which promises to reduce costs.

For five strenuous years Bacon worked like a Hercules. Then the control of the company fell into other hands, and he was displaced. At present he is enjoying his first long vacation by making a tour of the world.

The new owners of the Tennessee Coal and Iron are a syndicate of Northern capitalists, with four men in control—John W. Gates; Grant B. Schley, a conservative Wall Street broker; Leonard C. Hanna, a brother of the late Senator Hanna; and Earl W. Oglebay, a veteran ore-man of Cleveland. George A. Kessler, the New York wine-importer, has a large block of stock, but he is content to let Gates, Schley, Hanna, and Oglebay do the work.

This new syndicate looms large in the steel world. Next to the Steel Trust, it is the most powerful iron and steel combination in the world. It has bought control of two big companies—the Tennessee Coal and Iron and the Republic

THE ROMANCE OF STEEL

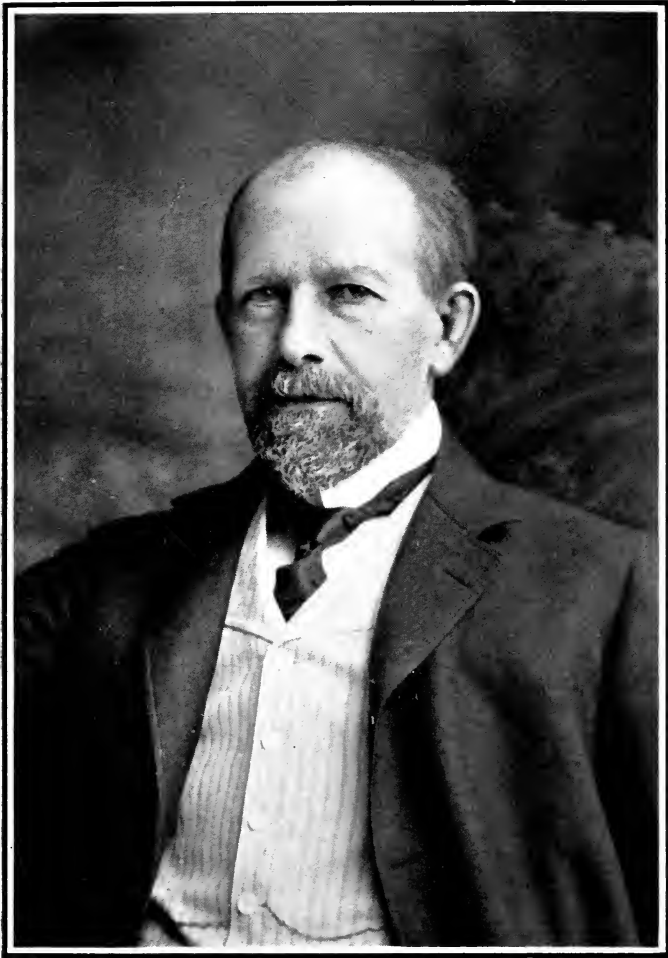
Iron and Steel—so that it can now march a hundred millions to the field of battle. It has twenty-five thousand men on its pay-rolls. With thirty-four blast-furnaces, twenty-five steel-mills, and a hundred mines of coal and iron ore, this powerful aggregation is superior to anything that the iron cities of Europe can show.

One man has been placed at the head of the two companies—John A. Topping, who began as an office-boy in the Youngstown district and climbed to the highest rungs of the ladder in Wheeling. Topping is less rugged than Bacon, but equally vigorous, and possesses a wider knowledge of the iron and steel industry. He is a handsome, courteous man of forty-three—a man of the business office rather than of the steel-mill.

“We are still under the head of reconstruction down in Alabama,” he said, when I met him in his Broadway office. “The Tennessee Coal and Iron is now being run to make iron and steel, not for Wall Street purposes. Development—that is our main object just now. We have recently placed a hundred steel cars on our tracks, for instance, the first that the South has ever seen. And all along the line we are flinging out whatever is flimsy or out of date.”

John W. Gates, when I asked him to outline the policy of the Alabama enterprise, painted a resplendent picture of its future.

“We’ll spend from fifteen to twenty-five millions on improvements,” he said. “Topping will finish what Bacon began, and he will have the money—the sinews of war—to make everything as good as it can be. This campaign of improvement will last for two years more. It will take nerve and cash; but we have both. Why shouldn’t we develop that property? We have a billion tons of coal. We have enough ore to last a couple of centuries. All we have to do is to put our house in order and go ahead.”



DON H. BACON



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRMINGHAM AND PUEBLO

The second largest company in Alabama is the Sloss-Sheffield. It, too, has been a big money-maker. It pays seven per cent., and has a surplus of more than two millions in the treasury. Two years ago it surprised its stockholders by presenting them with a thirty-three-and-one-third-per-cent. dividend, payable in common stock, in addition to the usual profits. Founded twenty-three years ago by Colonel J. W. Sloss, an Alabamian, it was taken in hand by New York capitalists and developed as an up-to-date enterprise. To-day Sloss iron is famous everywhere among foundrymen. On one occasion Admiral Melville jocularly explained the memorable run of the warship Oregon by saying:

“ You know she was built of Sloss iron.”

Everything new must run the gantlet in the iron and steel world, and the Alabama iron trade has had to fight its way up in spite of hard knocks from the older States. Twenty-five years ago, when the first Alabamians tried to sell their iron in the North, they were either laughed out of the office or suspiciously regarded as confidence men.

“ Iron from Alabama! Ridiculous! Wait till you see me buying a car-load of Alaska oranges and then you can talk about your Alabama iron!”

“ We prefer to use Scottish pig iron,” other buyers said, until they discovered that Alabama iron was being exported to Scotland. “ It is only a drop in the bucket,” they declared, until Alabama became the fourth iron-producing State in the Union. “ It is, of course, of inferior quality,” they maintained, until it commanded the highest price in the market. “ It is well enough for pipes and small castings, but it will never do for castings in which strength is required,” they asserted, until it was found to be almost indispensable for the largest castings. “ It is first-class in foundries but it will never make steel,” they averred, until the Southern railroads began to lay their tracks with the steel rails of Alabama. “ Alabama

THE ROMANCE OF STEEL

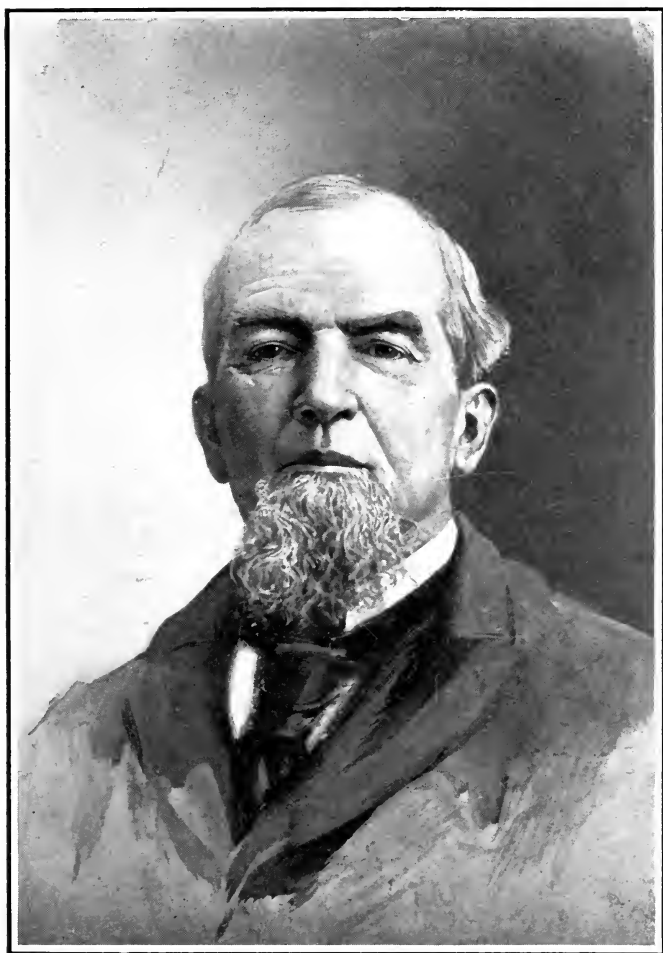
is cut off from the water, and therefore it can never have anything more than a local market," they argued, until they discovered that Birmingham was shipping iron direct to Yokohama, Japan, at a through rate of only six dollars a ton.

Alabama has overcome obstacles of nature and obstacles of prejudice. The whole United States made very little more iron thirty years ago than this one commonwealth made last year. With a beginning of fourteen rolling-mills, Alabama will, before its young men are grey-haired, be competing with Pennsylvania and Ohio in all manner of finished steel products, instead of making the comparatively small profit that comes from the sale of raw materials.

There are three obstacles that Birmingham has not yet been Titanic enough to surmount—the scarcity of skilled and industrious workmen, the insufficiency of the water-supply, and the menace of unfavourable legislation.

NEGRO LABOUR IN ALABAMA

Generally speaking, the coloured worker of Alabama is not a success when he is taken from the cotton-fields and harnessed to the chariot of coal and iron. The "boss" who can get the best work from a crew of Southern darkies must be a man of unusual natural gifts. A Northerner is seldom, if ever, successful. Captain John D. Hanby, a born-and-bred Southerner, superintendent of the Sloss mine, near Bessemer, has made his gang of five hundred negroes as efficient as any equal number of whites could be; but "Cap" Hanby is an exception. He is the oldest mine superintendent in Alabama, in point of service, and probably the most popular man in the whole district. Generous, bluff, convivial, one minute knocking a negro down for disobedience and the next minute picking him up, Hanby is an ideal Southern mine-boss, delivering the ore at the furnace at a total cost of sixty-three cents a ton.



COL. J. W. SLOSS



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRMINGHAM AND PUEBLO

If all mine-bosses had his rough-and-ready mastership the labour problem of Alabama would be solved—at least so far as the interests of the corporations are concerned.

But four-fifths of the employers report trouble.

“We are obliged to surround ourselves with twice as many men as we need,” said President Maben, of the Sloss-Sheffield company, “because a negro refuses to work more than half of the time. Whenever I can put a white man in the place of a negro, I do. The only final solution is white labour, and I expect that we shall be driven to bring in Italians and Hungarians from the North.”

Alabama miners, white and black, work only thirteen days a month, on an average. This is not a guess, but the result of an official inquiry. Not one negro in twenty saves any money. As long as a negro has money in his pocket work is for him a remote necessity. When he is in the mine, any phantom of an excuse will induce him to quit. He will stop work for a revival, for a circus, for his grandmother's birthday.

There are no skilled negro workers in the steel-mills, but a few have risen to be subcontractors in the mines, having from eight to sixteen negroes under them. It is not uncommon for these men to make forty dollars a week or more, when there are no accidents. They, of course, have money in the bank and own their own houses. A negro driller can make two dollars a day. In two days he earns enough to pay a month's rent for his two-room shack; six days more buys a month's supply of corn-meal and pork; then come a few days for debts, and a few days for whisky, and his month's labour is happily ended.

The average negro mining-camp is a scene of squalor and desolation. The work is hard and dangerous, and the negroes react from it into rioting and drunkenness. Alternate drudgery and dissipation make them physical wrecks before middle age, so that if it were not for the constant influx of new

THE ROMANCE OF STEEL

labourers from the cotton-fields they would soon become extinct. A few are joining trade-unions and trying heroically to better their condition, but the great mass are slowly, steadily sinking beneath the increased pressure of industrialism.

The present lack of sufficient water is a drawback which Birmingham is compelled to admit. A Philadelphia water company has the city largely at its mercy, controlling the only near-by sources of supply. Sooner or later, however, and probably with State aid, a conduit will be built from a river thirty-five miles distant, which will meet the present and future wants of the city.

There is no insuperable obstacle in the path of the Alabama iron and steel men. They have behind them the omnipotence of Eastern capital, and the expensive experience of Pittsburgh can save them from making a great many mistakes. They are served by seven railroads, and will soon have three more. With the completion of the Panama Canal, which will put Birmingham in close touch with the ports of the Pacific Ocean, the men of Alabama will move quickly on to their golden age.

THE ROMANCE OF COLORADO IRON

And now, Colorado! It is the most remote of the steel States, from a New Yorker's point of view. Therefore, I went to it last, and without expecting to find anything of unusual interest. Imagine my surprise when I was shown a company that employs sixteen thousand men and owns seven hundred square miles of land, a twenty-four-million-dollar iron and steel plant, forty villages, two railroads, and twenty-five hundred miles of telegraph. Instead of a struggling pioneer enterprise, manufacturing more experience than steel, here was an affluent company with four millions of ready money in its cash-drawer, and with the record of having last

BIRMINGHAM AND PUEBLO

year added more than twenty-two millions to our national wealth.

Incredible as it may seem to Pittsburghers, the fact is that the Colorado Fuel and Iron is the most self-sufficient and elaborate of all steel-making companies. It is more than a business: it is a civilisation. It is the Robinson Crusoe of the steel world. Its isolation has compelled it to become a Jack of all trades. It has to deal in lumber as well as in iron; to carry its own water through a forty-mile conduit; to establish forty stores; to build two thousand cottages, and to make life worth living for sixty thousand people.

“In this self-reliant State,” said its late president, F. J. Hearne, “we are compelled to develop all our own resources. We must make the best of what we have. We cannot run across the road to a neighbour and borrow anything we happen to need, as a man can in New York or Pennsylvania. We are wholly Western. All our customers are west of the Missouri River. We have had to produce practically all our raw materials.”

Everything about this company has a flavour of the big West. Its ore and coal lands are scattered through five States—Colorado, Wyoming, Utah, New Mexico, and California. Some of its forty villages are squatting in the desert, while some are perched high in the mountain ranges, two miles above the level of the sea. Roughly speaking, it is a wheel which has Pueblo as its hub, and whose diameter is a thousand miles. It is the largest industrial corporation in the West; and in Colorado it towers as high above all other companies as Pike’s Peak above the foot-hills. The men on its pay-roll are equal in number to one-tenth of the male citizens in the State.

It is the most cosmopolitan of all steel companies. While two-thirds of its superintendents are American-born, the rank and file represent thirty-two nationalities. Slavs and Italians,

THE ROMANCE OF STEEL

of course, are here in swarms; and there is a large detachment of Mexicans, who live in grey shanties of adobe and slabs, far inferior to the company houses in the mining villages.

For the amusement of its sixteen thousand workmen and their families the company has organised five orchestras and six brass bands. For their health it has built a magnificent hospital and formed a medical department with a staff of fifty-four doctors. This department is maintained by a tax of twelve dollars a year on each workman. And for their instruction it has established thirteen kindergartens, forty travelling libraries, nine clubhouses, and a number of schools that teach sewing, cooking, embroidery, bead-work, and so forth, to the women and girls. It provides a series of free lectures on art, literature, and travel. It even issues fatherly bulletins against tobacco, socialism, mosquitoes, and other annoyances.

This imperial corporation is now producing, yearly, about two million tons of iron and steel, and five million tons of coal. It makes rails mainly, but also bar iron, spikes, bolts, nails, and wire. Its assets are fifty-five millions, and its net annual earnings three millions. All told, in the fourteen years of its existence it has made twenty millions in profits.

THE STORY OF PUEBLO

As yet, the extraordinary history of this company has never been written. Even for this short sketch, all the facts had to be gathered from living men, not from books or from magazines. It is a strange fact that while Denver has many able writers, as its newspapers show, none of them has set down the wonderful story of Pueblo and the men who made it the Pittsburgh of the West.

In the first place, it was coal, not iron ore, that lifted Colorado up among the iron and steel States. She has eighteen

BIRMINGHAM AND PUEBLO

thousand square miles of coal lands—nearly enough to make two New Hampshires. About thirty years ago, two young railroad men went to the Centennial State to find coal. Their names were J. C. Osgood and A. H. Danforth. A few years later Danforth was at the head of a prosperous coal company, and in 1881 he had begun to make iron and steel at Pueblo, with "Dan" Jones, of Johnstown, as manager, and General W. J. Palmer as his backer. The following year Osgood, too, became a capitalist. He organised the Colorado Fuel Company, capitalised at twenty thousand dollars. His visible assets, at first, consisted of a lease of one anthracite coal-mine—nothing more; but his company lived and prospered.

In 1892 these two enterprises united under the present name of the Colorado Fuel and Iron Company. At the head of the concern was Osgood, with three of his personal friends—Julian A. Kebler, Alfred C. Cass, and John L. Jerome—as his cabinet officers. These men—the "big four," as they were sometimes called—ruled the company for ten years. They were the pathfinders of the Western iron and steel business. They were strong men, and what they did was well done. As yet, Colorado is too young, too unreflective, to appreciate its pioneers, but one day there will come some sort of public recognition of their work.

Osgood was a man of rare ability, and more. He had the knack of finding the right man for each place. Paul Morton worked under him for six years. D. C. Beaman was his legal adviser. Richard C. Hills was his mining engineer. Ex-Governor Grant and Senator Wolcott buttressed him politically. The Eastern steel-men said he could not make steel in Colorado; but he changed their minds.

"I sold one batch of rails to the Santa Fé Railroad," he told me, "on condition that they laid them in Joliet, in front of the steel-plant of the Illinois Steel Company."

THE ROMANCE OF STEEL

Osgood had caught the spirit of Colorado. Nothing was too hard for him to accomplish. Nothing was too wonderful to be true.

It is said that when Lieutenant Pike discovered Pike's Peak, in 1806, he spent two weeks trying to climb it. Then he gave up his attempt, and declared that "no human being can ever ascend to its pinnacle." If he could visit the Peak to-day he would find a hotel on its summit and trains running up and down on a cog railway, as if the proud old mountain were nothing but a commonplace hill.

And so, all through Colorado, there were many equally "impossible" things being done. Men were swept forward by an irresistible optimism, and in front of the crowd rushed Osgood, borrowing and building, and building and borrowing, until he had actually created a new Pittsburgh at the foot of the Rockies.

In seven years he raised his investment securities to forty-six millions. He swelled his labour army from five thousand to fifteen. He built furnaces and steel-mills until Pueblo was lost in smoke. He added tract to tract until he owned a realm half as large as the State of Rhode Island. There was good reason for his optimism. The Aladdin's lamp of the steel business was in his hands, and he rubbed it until the genie was fairly worked to death.

But he and his helpers were men of force and shrewdness as well as of enthusiasm. They had as much caution as anybody had in those exuberant days. They were genial and popular.

Whether business was good or bad, Osgood never reduced wages. Kebler, too, was everybody's friend. He was beloved by the workmen, because of the sincere interest he took in their welfare.

"Kebler once abandoned a dangerous mine that was very valuable," said an old miner, "and when he was asked why



JOHN CLEVELAND OSGOOD

BIRMINGHAM AND PUEBLO

he did so he replied: 'That mine cost us a hundred thousand dollars, but it is not worth one man's life.' "

In 1898 the "C. F. and I." stock became active in Wall Street. John W. Gates picked up some of it, and had himself made a director. He added fuel to the Osgood flame. In fact, he was soon outbooming the boomers. He helped them to borrow fifteen million dollars more, through a Chicago bank, and cheered them on until every cent was spent on a series of immense steel-mills. Sixteen hundred thousand dollars of this money he loaned out of his own pocket.

A PERIOD OF STORM AND STRESS

In 1902 Gates conceived the idea of making himself the Steel King of the West. He bought "C. F. and I." stock, and hired proxies, until he felt sure of his prize. Then he charged upon Osgood with his special car loaded with lawyers and prospective directors. For a week the battle raged. At the final show-down Gates held the most proxies, but the law of Colorado was on the side of Osgood. Gates lost, and retired to Chicago.

But the Eastern giants of capital, so it seemed, had made up their minds to possess the Colorado Fuel and Iron Company. The second assailant who loomed up was the strenuous E. H. Harriman. With Edwin Hawley to help him, Harriman gave battle to Osgood. At first it appeared as if the man from Colorado would be swallowed up by the big railway magnate; but in the nick of time a deliverer came to Osgood's rescue. This was no less a personage than John D. Rockefeller, Jr., with whose help Harriman was soon as completely routed as Gates had been, and Osgood had the grim satisfaction of knowing that he had beaten off two of the most renowned warriors in the whole realm of commerce.

George J. Gould, too, had become a large holder of Os-

THE ROMANCE OF STEEL

good's stock, and he declared himself willing to co-operate with Rockefeller in the protection of the property. Having made this Gould-Rockefeller alliance, Osgood thought that all his perils were past. He and his faithful comrades had at last reached the seats of the mighty, after an up-hill fight of ten years.

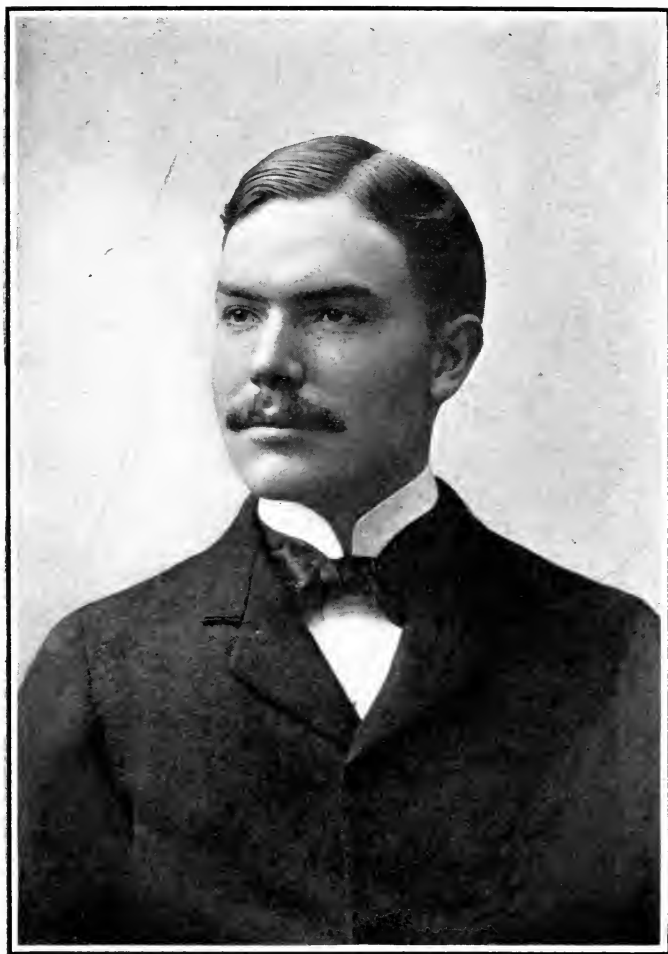
Then the wheel of fortune turned. Instead of affluence there was a whirlwind of disaster and death. In less than eleven months three of the "big four" were dead, the fourth was an outsider, and the great corporation was in other hands. In the whole history of steel I have not found a more remarkable tragedy than this.

No one, apparently, was to blame for this tragic climax. Osgood resigned in the spring of 1903, because he found that he was overshadowed by his new partners. When he attempted to market some bonds he discovered that his company was regarded as a Gould-Rockefeller enterprise. To a man of his independent spirit, this was not to be endured.

"I refuse to work as a hired man," he said, "no matter who the employers may be, or how high the salary."

He arranged to turn over full control of the company to the New York men on condition that they would retain his employees and meet all financial obligations. The depression of 1903 did much to push him to this decision, as the plant was in immediate need of more capital for improvements.

The following month Cass died of consumption. Five months later the big-hearted Kebler collapsed, with a clot of blood on his brain, and fell lifeless upon his bed. The next day Jerome heard of Kebler's death, staggered to a couch, and in a few hours breathed his last. Osgood is still an active capitalist in the prime of life; but he is no longer a steel king. As a Westerner would say, "he whistled for the grizzly, and the grizzly came."



JOHN D. ROCKEFELLER, JR.



BIRMINGHAM AND PUEBLO

FRANK J. HEARNE IN COMMAND

As the successor to Osgood, Rockefeller and Gould chose one of the Steel Trust's subpresidents, Frank J. Hearne. Hearne had been a lifelong friend of Frick—had, in fact, given Frick his first order for coke, in 1873; and it was Frick who recommended him as the best man to grapple with the Colorado situation. At once Hearne became, and was until his recent death, the dominant figure in the iron and steel world of the West.

Hearne was, first and last, a man of business. He worked from choice, not from necessity. Years ago he was part owner in an hereditary iron-plant, which was sold for nearly ten millions to the Tube Trust. As it happened, he started life on the higher rungs of the ladder, but he would have been one of the thousand millionaires of steel in spite of any handicap. He had the business mind. He stepped from the college hall to become the chief engineer of a railroad, and for forty years he was one of our most active industrial generals. He could be a fighter, if fighting was the game, or a politician, or a financier, or a manufacturer. He was the Frick of Colorado.

When he arrived in Denver he found an extraordinary situation. Instead of having a vast store of raw materials and a ramshackle plant, such as Bacon had at first in Alabama, Hearne saw at Pueblo an immense plant, so large and well equipped that its ore-mines could scarcely keep it in operation. Osgood had lavished millions upon his steel-mills; but his ore lands were in great need of development.

"I found an enormous tin-plate mill," said Hearne. "It was so large that it could have supplied the whole West by running one month each year. There were two rod-mills, when one was too many. The ore-fields were overrated. One was said to contain a fifty-year supply, and we exhausted it in twelve months. Another, supposed to be capable of yield-

THE ROMANCE OF STEEL

ing enough for generations to come, was cleaned out in two years."

Delving into the finances of the company, Hearne found it in immediate need of money. His first act was to telegraph to Gould and Rockefeller:

"Unless I get a million dollars at once, I cannot guarantee that the sheriff won't be in here next Saturday night."

The million was sent; and later the company was refinanced in such a way as to place thirteen millions at his disposal.

"You are to have a free hand and all the money you need," said his big employers.

Hearne sternly put a stop to all vague talk regarding the company's resources.

"Let us get down to the raw truth," he said. "Enthusiasm is not ore!"

He opened up new mines, until to-day the ore supply will carry the company along until 1940, or longer. In the mills, he cut down everything that rose above the utility line. For instance, one of his foremen recently stopped him as he was walking through the works and said:

"Mr. Hearne, I must have a pair of iron gates put up here."

"Certainly, John," replied Hearne; "but just figure it out first, and let me know how much the gates will decrease costs or increase the output."

In short, while Osgood was not a practical iron-man, Hearne was. While his predecessor was battling single-handed to build up a giant industry, Hearne had behind him the irresistible force of the Gould and Rockefeller millions. While Osgood was at the mercy of the railroads, the Gould and Rockefeller lines—now a vast system of twenty-five thousand miles—provide freight rates that are as low as they need be. The periods of pioneering and speculation have gone by, and the era of stability has arrived. The mistakes of the past,



FRANK J. HEARNE



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

BIRMINGHAM AND PUEBLO

of course, have been capitalised. The "C. F. and I." sowed its wild oats, as all steel corporations do in their youth. It is carrying a burden of seventy-five millions to-day, in the total of its investment securities. Three-fifths of this load was put upon it by Osgood, and two-fifths by Gould and Rockefeller. From Osgood's point of view, the plant was not at all overbuilt.

"If I had been left in control," he said, "I would naturally have been more expeditious in opening up new mines, as I was thoroughly familiar with the whole property. It is altogether a mistake to suppose that the Colorado Fuel and Iron Company was an experiment until it fell into the hands of Eastern capitalists. Not one pound of ore is being mined except on lands which I had secured; and when I withdrew from the company it possessed the same forty-year supply which it owns to-day. The truth is that in 1902 the company was employing nearly as many men, and making quite as much money, as it did later under the able management of Mr. Hearne."

No one but a steel-maker can fully appreciate the wonderful achievement of J. C. Osgood. Even in Pennsylvania, where one mill holds up another, the average steel-plant has had to struggle through an infancy of debt and disaster. Carnegie, with the powerful backing of the Pennsylvania Railroad, barely saved himself on several occasions. Yet this sturdy Westerner, with a hundred handicaps and disadvantages, played a lone hand successfully for ten years, and built up the largest industry of the whole Southwest.

THE WORKSHOP OF THE WEST

The fact is, though few Easterners are aware of it, that Colorado has been transformed from "the playground of the republic" into the workshop of the West. The steel lariats

THE ROMANCE OF STEEL

of twenty railroads now loop themselves around her snowy peaks and across her irrigated farmlands. She has taken eight hundred millions in gold and silver from her treasure-hills. She has tamed her section of the desert into a prairie garden, until the output of her acres is greater than that of her mines. And, most important of all from the manufacturing point of view, she is producing vast quantities of coal.

Her financial and political centre is Denver, a remarkably handsome city of nearly two hundred thousand people—where, by the way, the finest residence in town is owned by a Carnegian steel king, Lawrence C. Phipps. But the manufacturing centre of Colorado is Pueblo, three hours' ride to the south. Pueblo seems to have been designed by nature as an industrial metropolis. It is central, and on comparatively low ground, so that the heavy coal and ore trains run down easily to its mills and factories and smelters. The Arkansas River twists out of its mountain-clefts a few miles away and zigzags through the city; and the largest coal-mines are within sixty miles. Generally speaking, its raw materials are above it and its market below—two very important facts from the standpoint of freight rates.

Of all the iron cities of the world, Pueblo has the most picturesque location. It stands three-quarters of a mile above the level of the sea, at the foot of the red crags of the Rockies. Its smoke is blown against the hoary head of Pike's Peak, fifty miles northward. To the east stretch a thousand miles of level field and mesa, across which come five busy railroads.

It is the scenic beauty of the place, no doubt, which has inspired its citizens to make it the handsomest city of its size in the West. It is, in fact, the only beautiful steel town in the United States. With the exception of Essen, in Germany, I have found no iron-making centre in any country which takes so keen an interest in its own appearance.

For example, although its population is less than seventy

BIRMINGHAM AND PUEBLO

thousand, Pueblo has twelve parks, most of which are well kept. In one of these stands the Mineral Palace—a really notable building, in which are Titanic figures, enthroned, representing King Coal and Queen Silver, while around them is gathered a unique exhibition of the mineral affluence of Colorado.

“Watch Pueblo’s smoke” is the motto of this ambitious city. Last year the men who work under the smoke produced fifty million dollars’ worth of commodities. The city has twelve million dollars in its banks. And now that the forceful and efficient George J. Gould has taken the capital and experience of the East, and the energy and skill and natural wealth of the West, and focussed them all at Pueblo, there is every reason to believe that this Pittsburgh of the Rockies will play an important part in the iron and steel drama of the future.

CHAPTER XI

STEEL KINGS OF MANY CITIES

Makers of Iron and Steel Who Are Not in the United States Steel Corporation—The Ore Fields of the Northwest, and the Recent Great Northern Ore Deal—Steel-Making Has Become a Game Only for the Multi-millionaire.

NOW that Carnegie has abdicated the throne, who is the new steel king of Pittsburgh?

This is a question which few steel men can answer on the spur of the moment. Such was the prestige of Carnegie—his reign was so long and its termination was so glorious—that our eyes are light-blinded. We fail to recognise the young prince upon whom the honour has descended. And our difficulty is still greater because the new monarch dislikes publicity as much as Carnegie loved it, and he has refused to allow any manner of public coronation.

The new uncrowned steel king of Pittsburgh is B. F. Jones, president of the thirty-million-dollar firm of Jones & Laughlin, and this is probably the first public announcement of his kingship.

Benjamin Franklin Jones is a young man. He was born to the purple. His father—Benjamin Franklin Jones—made steel in Pittsburgh for over half a century, and was the official head of all American steel-makers for eighteen years. The Jones & Laughlin firm is the biggest independent concern in Pittsburgh, and it is the only one in the United States that is conducted along the old lines. It is run on the Carnegie plan. There is no stock for sale. It is a close family corporation. No one enters it except by birth or marriage. It is undercapitalised. No wires run from Wall Street to its offices. It



LAWRENCE C. PHIPPS



STEEL KINGS OF MANY CITIES

has no more use for tickers than for telescopes. It co-operates with other steel firms in the various pools that prevent competition; but in other respects it is absolutely free from entangling alliances.

Young Jones stands out amid the mob of Pittsburgh superintendents and managers as conspicuously as an elm-tree in a berry-patch. They do what they are told. They obey orders from New York. The shadow of Morgan obscures them. But Jones is the owner as well as the captain of his ship. He is not a cog in a vast impersonal mechanism. If he had been self-made he would deserve to be called the last of the Titans. Although he is young, he is a steel-maker of the old school; and although he has been reared as the son of a multimillionaire, he possesses the hardy virtues that usually wither in the midst of affluence. He has simple tastes and works as hard as any of his clerks. "He is a chip of the old block," say Pittsburghers.

In fact, the only real competition that is taking place to-day in the steel business is between the old style of corporation, as represented by Jones & Laughlin, and the new style, as represented by the United States Steel Corporation. The latter is the popular way—the twentieth-century way. Four-fifths of the steel companies are now organised on the lines mapped out by Morgan. But the Jones & Laughlin company stands apart and will take no share in the democratisation of its business.

What the Carnegie company used to be in the steel trade the Jones & Laughlin firm is to-day. With its two immense steel-mills, its six furnaces, its aggregation of shops and foundries, its ore-mines, docks, coal-lands, coke-ovens, and limestone-quarries, the plant over which young Jones presides is one of the most important factors in the whole steel situation. And there is an impressive contrast between the simple two-story office-building of the Jones & Laughlin company—

THE ROMANCE OF STEEL

sheeted with iron and painted white, with rough, slivery floors, plain furniture, cheap rugs, and old scraps of carpet—and the magnificent Frick and Carnegie buildings, the very apex of Pittsburgh.

The original B. F. Jones, who died four years ago, gathered up eighteen millions in his industrious lifetime. His ancestors crossed the Atlantic with William Penn, but in a century and a half they had picked up no property worth inheriting. His father kept a little country tavern; and when the son was a boy of eighteen he tramped to Pittsburgh and got a job with a canal-boat company. For the first year the company gave him his board, but no wages. The third year he was manager. The fourth year he was a partner. Then he looked ahead and saw that the canal-boat profits would be cut off by the railroads. He sold out and bought an old iron-furnace. Like Carnegie, he was wise enough to join hands with a practical iron-maker, Bernard Lauth; and in ten years they had made so much money that Lauth retired. A wealthy pork-packer and banker, James Laughlin, took notice of the enterprise of young Jones, and became his partner.

CARNEGIE'S OPINION OF B. F. JONES

As far back as fifty years ago the Jones iron-works was the largest concern of its kind in Pittsburgh. Twenty years later the brilliant Carnegie, eleven years younger than Jones and eleven inches shorter, plunged into the scrimmage and scattered everybody right and left. But the prestige of B. F. Jones remained in many respects unapproachable. Even Carnegie regarded him with an esteem that was almost reverence.

“B. F. Jones was Carnegie's ideal steel-master, even when the two men were competitors,” said Thomas N. Miller, Carnegie's first partner. “Carnegie had a high opinion of

STEEL KINGS OF MANY CITIES

the political sagacity of B. F. Jones," continued Miller; "and I remember that when Carnegie offered twenty million dollars to the United States Government if it would give up the Philippine Islands he rushed over to Jones to get his approval and his co-operation."

Jones began fourteen years before Carnegie, but he made only one-fourteenth as many millions. Carnegie had averaged over six and a half millions a year during his career as steel-maker. Jones had averaged three hundred and twenty-five thousand dollars. Carnegie had made as much in the last nine months of his steel-making as Jones had accumulated in fifty-five years of it. But Carnegie was the exception. He was the only one of his class.

Judging by all ordinary standards, B. F. Jones, Sr., was unusually successful, and became immensely wealthy. He was a steel-master of the old-fashioned kind—conservatively progressive, non-speculative, and always in the harness himself. The group of young Joneses and Laughlins who are now in charge have inherited the business policy as well as the millions; and the great plant, with its ten thousand workmen and its output of five thousand tons of ingot steel a day, is one of the sturdiest and steadiest pillars that stand beneath the industrial supremacy of the United States.

The third "steel city" in the United States is Philadelphia. Here is the home of the American Iron and Steel Association. Philadelphia is represented in the Steel Trust by its street-car king, P. A. B. Widener. Also, it is the headquarters of seven independent iron and steel companies whose stock has a face value of one hundred and twelve million dollars.

The "big two" of these companies are the Cambria and the Pennsylvania—capitalised at fifty millions each, and both controlled by the Pennsylvania Railroad. "Those two companies are in good condition, and both will have a great future," said one of the foremost directors of the United

THE ROMANCE OF STEEL

States Steel Corporation when I requested him to pick out the winners from among the independents. Each has as its president a relative of the original founder.

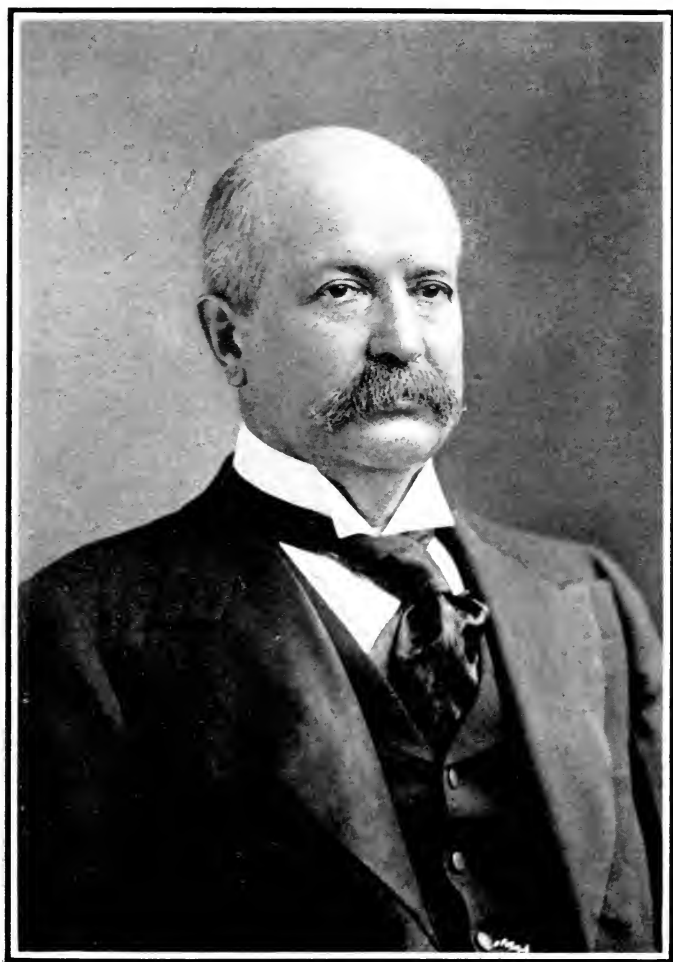
The famous old Cambria still gives employment to the men of Johnstown, having survived the flood and the financial vicissitudes of sixty years. It was Daniel J. Morrell, a Quaker merchant of Philadelphia, who made Cambria great, in the days of the Civil War and afterward. It was he who made that famous answer when he was asked the secret of Cambria's success.

"We always try to beat our last batch of rails," he said. "That is all the secret we've got, and we don't care who knows it." To-day, under the presidency of Powell Stackhouse, Cambria employs fourteen thousand men, and is making profits of four millions a year.

The Pennsylvania company is a most elaborate concern, It can make all sorts of things, from an ocean steamship to a rivet—from a bridge to a railway signal. In fact, it has built as many as seven big ships at one time in its Maryland shipyards. It is also unique in this respect, that its ore mines are scattered over three continents—Europe, Africa, and America. In two other respects, also, it is a notable company: it owns the historic iron-mines of Cornwall, in Pennsylvania, and the oldest active Bessemer plant in America, at Steelton.

THE MAKING OF SAWS

In Philadelphia we find the monster saw-works of Henry Disston & Sons. As this company has made its own steel for half a century, it deserves a place in this story. At Disston's the skill of the steel-maker is at its best. Here the wondering visitor can see steel rolled and scissored into long flexible ribbons, as though it were a woven fabric. Here all manner of extraordinary saws are made—saws with diamond teeth,



PETER A. B. WIDENER



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

STEEL KINGS OF MANY CITIES

saws that are twice as long as telegraph-poles—half a million saws of all sorts being regarded as a good year's work.

As usual, we find back of the Disston success a heroic story of self-help. The first Disston began to make saws in a basement, in the days of Andrew Jackson and Van Buren. For twenty-one years he wrestled with English competitors. Then came the Morrill tariff of 1861, and his business shot ahead until it became one of the main supports of the industrial greatness of Philadelphia.

There are still three other iron enterprises in the Quaker City—the Allegheny Ore and Iron, which is fortunate in owning the famous Oriskany mine, in Virginia; the Alan Wood Iron and Steel, established more than eighty years ago; and the Phoenix Iron, which has kept its furnaces ablaze for a century or more. Moreover, Philadelphia is the home of Joseph Wharton, the present president of the American Iron and Steel Association.

Joseph Wharton, an old-fashioned Quaker, is now a veteran of eighty. He is a maker of iron, not steel—the chief individual maker of iron in the United States. His four New Jersey furnaces and his various railroad interests have given him a fortune of fifteen million dollars. Like Carnegie, Mr. Wharton is a man of varied accomplishments: he has been the friend and adviser of half a dozen Republican Presidents—a publicist for two generations—an educator—a writer—a poet. Who can say that the men of steel are not also men of romance, when they have elected as their official head the only one of their number whose lips have been touched with the divine fire?

In the smaller "iron city" of Reading there are at least two companies that compel our attention. The first is a twenty-million concern called by the ambitious name of the American Iron and Steel Manufacturing Company, which produces nuts, bolts, rivets, and the like. At its head is J. H. Stern-

THE ROMANCE OF STEEL

bergh, a veteran who has won the right to be called the founder of the bolt and nut business in this country.

Sternbergh is a notable man. At the close of the Civil War he was a railway clerk. He knew nothing whatever of the iron trade; he was not a mechanic; but he saw the need of nuts and bolts, set his brain to work, and invented the necessary machinery and began to make them. "As a result," he said, "I have seen the price of square nuts cut down from eleven to two cents a pound."

The second concern is the Reading Iron Company, which was put on its feet by the backing of George F. Baer, whom the Coal Trust made famous. This enterprise is unique in two respects. In the first place, its assets are said to be twelve times greater than the face value of its stock; and in the second place, it has adopted the novel plan of buying a heavy interest in an outside steel company instead of building any steel-mills of its own. It holds at the present time over sixty thousand shares of the Pennsylvania Steel.

Among the miscellaneous steel-making corporations which cannot be classed under any general head, the largest is the International Harvester Company, which probably does more business with all parts of the civilised world than any other corporation in Chicago. Merely for its own use, it produces over two hundred thousand tons of iron in an average year, and also operates a couple of big steel-mills. There is also the Crucible Steel—one of Pittsburgh's fifty-million companies. After a somewhat erratic career, it seems now to have become well established under the presidency of William G. Park.

The youngest, but in some respects the greatest, of all the steel-works is the immense new plant of the Lackawanna Steel Company, at Buffalo. This has grown into maturity so quickly that few realise its important place in the steel world. Six years ago the swamps around Stony Point, several

STEEL KINGS OF MANY CITIES

miles out of Buffalo, were a favourite hunting-ground for sportsmen, who waded about in search of rail and coot, and now and then a duck. To-day on these swamps stands a steel city of thirty-five thousand people and a plant covering three times more ground than the Pan-American Exposition.

As far back as 1817 there were iron-workers in Buffalo. In that year the famous steamboat Walk-in-the-Water was built at Buffalo, engine and all. It was the engine, mainly, that became famous, because of its constant surrenders to wind and tide. When the boat was launched the current of Niagara River was too strong for the engine, and the captain was obliged to rig up several sails and hire a dozen oxen before he could get his craft into the lake. Edward Roat built the first Buffalo foundry, and by the time of the Civil War there were twenty small iron-works in the city. The panic of 1873 pushed most of these concerns into bankruptcy, and little was done for twenty years.

BUFFALO AS A STEEL CENTRE

No steel had been made in Buffalo until the Lackawanna works started its fires. Then the rail pool gave it an allotment of fifteen per cent. of all the rails produced. Its annual output of six hundred and fifty thousand tons of rails would be enough to lay a double track between Buffalo and New York City. A yearly product of one million two hundred and fifty thousand tons of iron and steel is the present record of this wonderful two-year-old steel-mill.

In several particulars the Lackawanna plant beats anything at Pittsburgh or in Europe. Four of its furnaces are the largest ever built, and its forty-two-thousand-horse-power gas-engines are in a class by themselves. The entire equipment is on a magnificent scale. Here are a coal-trestle a mile in length, a rail-mill one thousand seven hundred and sixty-two

THE ROMANCE OF STEEL

feet from end to end, a three-quarter-mile ore-dock, and a one-mile ship-canal. The coke is carried through a tunnel from the harbour to the furnaces.

Immense machines, for which almost the price of a skyscraper has been paid, tower in the workshops. In the subways are steel tubes through which a team of horses might be driven. Cranes that can easily pick up a locomotive swing back and forth. A full hour is required to walk from one end of the Titanic plant to the other. The company owns thirty-five miles of railroad, and connects with twenty-seven railway systems.

This single plant is the best illustration of the fact that the steel business is to-day one for multimillionaires only. To equip it has required forty million dollars. Some single items, such as the ore-dock, ship-canal, gas-engines, and harbour, cost a million dollars apiece. Hundreds of four-room brick cottages had to be built for its seven thousand workmen. For every dollar of capital that was needed before the Civil War a hundred dollars is necessary to-day.

THE MOVEMENT TO THE LAKES

A significant fact about the Lackawanna works is that it indicates a movement to the Lakes. It was originally built at Scranton, but two years ago the Scranton plant was abandoned and the whole force of men moved to Buffalo. Superiority in transportation facilities is the main reason given for the change. Buffalo iron-makers claim that iron can be made in their city for one dollar and thirty-seven cents per ton less than in Pittsburgh.

The builder of this great steel-making and millionaire-making workshop is a thick-set, bushy-whiskered German-American—Henry Wehrum. He is the Captain Jones of Buffalo. He has a natural aptitude for leadership over large

STEEL KINGS OF MANY CITIES

bodies of workmen. "Why," said one of the men, "if the old man said to us, 'Come along, boys, I'm going to build a steel plant in Alaska,' we'd pull up stakes and follow him." Walter Scranton and S. B. Sheldon are the captain and first mate of the big concern. The latter is a powerful young man of electric force and alertness. His manner is genial, but every word comes out like the crack of a whip. Among the men who have staked forty millions on the success of the enterprise are such well-known financiers as D. O. Mills, Moses Taylor, C. Ledyard Blair, Adrian Iselin, Jr., H. McK. Twombly, Robert B. Van Cortlandt, and Cornelius Vanderbilt.

These capitalists are very rich—too rich, says Pittsburgh. "The Lackawanna plant was built at an enormous cost," said one of the Pittsburgh steel kings. "It was a case of having too much money. The men who backed it thought that they would escape the heavy fixed charges of the United States Steel, but they forgot a number of other factors. They were new men in the iron and steel world, and they are learning a few things that Pittsburgh could have told them. Their first mistake was in pulling down their old plant at Scranton before the new one was in working order. They have money enough, of course, to buy success in the end. But they will have to pay a higher price than they imagined."

The Lackawanna officials realise that they are still "under the head of unfinished business." "We can't give out anything now," said its secretary. "Wait until we get shaken down and know where we're at." Its first annual report, however, issued last March, tells of success. The total earnings were twenty-nine millions, and net profits of two millions. Its president is E. A. S. Clarke, who was graduated from Harvard twenty-two years ago and learned to make steel under Robert Forsythe, in Chicago.

Perhaps the most absolutely independent of American steel

THE ROMANCE OF STEEL

cities is Bethlehem, which straggles along the hilly banks of the Lehigh River, in eastern Pennsylvania. Its magnificent steel-mills and armour-plate works are controlled by one individual—Charles M. Schwab. And in the development of its big plans for the future Bethlehem appears to be driving ahead without any entangling alliance with other cities.

Bethlehem was created by the brains of John Fritz and the money of Joseph Wharton. John Fritz, who is still living, at the age of eighty-five, and who may worthily be called the dean of all steel men, achieved the most notable triumphs of his life at Bethlehem. He built up a tiny rail-mill until he had made one of the most elaborate steel plants in the world.

Since W. C. Whitney, then Secretary of the Navy, requested it to make guns and armour-plate for Uncle Sam, Bethlehem has generally been regarded as mainly a military plant. It is a place where cannons have been made strong enough to hurl death a distance of twenty miles—or fast enough to fire a dozen times a minute. All this is still true. But the improvements that are now being pushed forward will give Bethlehem an equally wide reputation for the making of cars and structural steel. The superb equipment of the Bethlehem plant has made it one of the best money-makers. In the last four years, for instance, the profits have been twelve millions.

The best located steel plant, perhaps, either in the United States or anywhere else, is the new one that has been built by Milliken Brothers on Staten Island. Although it employs two thousand men and covers two hundred acres, it lies inside the fence of Greater New York. It has been constructed so quietly and quickly that very few in the Empire City are aware of its existence.

With the exception of two small structural mills in England, it is the only one in the world that can load an ocean steamship in its front yard. The Millikens can make nearly

STEEL KINGS OF MANY CITIES

two hundred thousand tons of open-hearth steel in a year, which they shape into structural material for skyscrapers and bridges. At the head of this promising enterprise stands a keen and energetic young graduate of Yale—Foster Milliken, one of the coming men of the steel industry.

“TOM” JOHNSON AND MARK HANNA

Two forceful Americans who made their mark in iron and steel, as well as in several other things, are Mayor “Tom” Johnson of Cleveland, and the late Senator Mark Hanna. Mayor Johnson—“a reformed business man,” as he has been called—first came to public notice in the street-railway world when he was twenty-one. He invented a new kind of rail for street-railways, and made a fortune before anyone else could follow his lead. Perhaps the most unique act of his life, during his steel-making career, was when he arose in Congress and electrified its members by moving that the duty on steel rails be removed.

“But is it not true that the member himself is a maker of steel rails and a beneficiary of the tariff?” asked Dalzell, the member from Pittsburgh.

“Yes, I am a maker of steel rails,” replied Johnson. “I get a higher price for my rails because of the duty. But when I stand here as a member of Congress, I do not represent myself, nor my steel-mill. I represent the men whose votes put me where I am. They voted for free trade when they voted for me, and therefore I move that rails be put on the free list.”

Senator Hanna saw millions in iron soon after the Civil War, when he was working as a poorly paid clerk on a Lake Superior vessel. His marriage to Miss Rhodes, daughter of “Old Dan Rhodes,” a coal and iron pioneer, gave him a start. Soon there were dozens of vessels in the Hanna fleet, and

THE ROMANCE OF STEEL

he was carrying more ore through the "Soo" Canal than any other shipowner. Then he bought mines and built furnaces. One thing suggested another. He raked in coal-lands, oil lands and wells, a stove company, street-railways, banks, newspaper, a theatre. From the top of this heterogeneous pyramid of possessions he climbed still higher into fame by becoming the harmoniser of labour and capital—a maker of Presidents—and possibly for a time the most influential man in American public life.

MRS. KELLEY, IRON-MAKER

There is only one woman in the American iron and steel trade—Mrs. Nannie H. Kelley, of Ironton, Ohio. She is the sole proprietor and manager of a charcoal-furnace that makes about one hundred thousand dollars' worth of iron a year. After the slump of 1893, Mrs. Kelley bought the furnace and ten thousand acres of ore-lands for a fifth of its value and for the past eight years she has made it pay handsome dividends. Mrs. Kelley is not a widow. Her husband was a prominent business man and State Senator until recently when he retired from active work. Mrs. Kelley is a woman of force and enterprise, who is in business life from choice not necessity.

"Everything she touches turns to gold," says one of her neighbours. Every one in Ironton respects her judgment in financial affairs. She knows her workmen by name, and has never had a strike. And she has never allowed her work as a furnace-manager to interfere with her other duties as a wife, a mother, and an entertainer. In short, Mrs. Kelley is a highly creditable member of the guild of iron and steel.

And now there remains only one more of the thousand millionaires of steel—James J. Hill, who, with his associates will soon be drawing from the Steel Trust a pension greater

STEEL KINGS OF MANY CITIES

than that of Andrew Carnegie. Hill has never been anything but a railway man. He has never made a pound of iron or steel in his life. Yet he has recently completed a lease of ore-lands which is the largest single transaction in the whole history of the iron business.

"It is the greatest deal in iron that the world has ever known," said Mr. Hill complacently. "If the ore lasts for fifty years, as I expect, the total sum realised will be one and one-half billion dollars. This vast sum will not come to me or my heirs, but to the stockholders of the Great Northern. As I hold seven per cent. of the stock, I shall profit to that extent."

Roughly speaking, the bargain is that the Steel Trust shall dig not less than a specified amount of ore each year, paying one dollar and sixty-five cents a ton for royalty and freight. Each year the royalty and the amount of ore are to increase, until, in 1917, the owners of the land will be receiving the stupendous total of more than fifteen million dollars a year. By this one deal a new batch of a thousand millionaires will be created. Such is the increasing affluence of the world of steel.

THE ORE DEAL

Eight years ago Hill bought the Duluth, Superior, and Western Railroad. When he saw the possibilities of profit in hauling ore he began a buying campaign, gathering in any old rights of way, timber railways, or ore-lands. For a time he and Rockefeller ran a neck-and-neck race for supremacy in the ore regions. Both bought land and built railroads. But there was one important difference in their tactics—a difference which prevented the ore region from passing altogether into the hands of these two men. Rockefeller operated his own mines and discouraged all smaller operators by prohibitive rates. Hill, on the contrary, adhered to his lifelong policy

THE ROMANCE OF STEEL

of being strictly a railroad man. He leased his mines to other operators and stimulated the mining business. He even lent money to men who lacked the capital to become operators.

"The Northern Pacific acquired its ore-lands to secure the freightage, and for no other reason," said its second vice-president, whom I interviewed in his office at St. Paul. "We have never made a dollar by speculating in ore-lands," the official continued. "Neither was there any likelihood at any time of our operating the mines or entering the iron and steel business. All that we wanted was the haul."

As the United States Steel Corporation owns a railroad that runs parallel with Hill's in the ore country, and as his present ore traffic comes mainly from the independent operators, it seemed most likely that he would favour leasing his ore-lands to the independents. This opinion was still further strengthened by the fact that Hill on one occasion rebuffed the United States Steel president when the latter proposed to buy the Hill properties. The story was told to me by one of the chief steel kings of Cleveland. It appears that when Schwab was in the first flush of his presidential enthusiasm he declared in a public speech: "The United States Steel Corporation owns six hundred million tons of iron ore. This is worth at least a dollar a ton in the ground. The ore alone, therefore, is an asset worth three-fifths of a billion." Shortly afterward, Schwab ran across Broadway to Hill's office and asked: "What price would you charge us for your ore in case we should decide to take it over?"

"You can have it at your own valuation," replied Hill, with an amiable smile—"a dollar a ton in the ground."

"Absurd!" exclaimed Schwab, dropping the proposition like a hot potato.

The ore of Minnesota is now entirely in the possession of the iron and steel companies, with the exception of several tracts that were given years ago to the schools. If the people

STEEL KINGS OF MANY CITIES

of that State had not given away their iron ore they might now be drawing dividends of twenty-five million dollars a year—sixty dollars or more per family. Nature gave Minnesota three thousand million dollars' worth of red ore, yet in a single generation a handful of outsiders have rushed in and practically taken possession of it all.

Big and little, all the iron and steel corporations seem to live as happily together as a basket of kittens. They have adopted the Morgan principle of "community of interest." Two-thirds of them have organised openly and called themselves the United States Steel Corporation, and practically all of them are linked together in pools as well as in the growing communism of capital. The steel millionaires are not now a class by themselves. Men of all trades and professions are in steel, and steel men are distributing their money in other enterprises.

There are about sixty thousand people who have more or less money invested in iron and steel. Ten years ago a handful of picturesque Titans were in control. To-day, the steel trade is national. It is semi-social. It could be completely consolidated and made a department of the Federal Government without as much work as Morgan performed in 1901.

Roughly speaking, the capitalisation of the United States Steel Corporation is one and a half billions, and that of all the independent iron and steel companies, half a billion. Take it at its face value, and our American iron and steel business is worth two billion dollars. Allow seven per cent. profit on this valuation, and in seven years the steel trade can give nearly a million dollars apiece to a thousand men.

All told, there are eighteen important independent companies capitalised at from five to sixty millions. Five companies, with one hundred and eighty millions dollars capital, are managed from New York City. Three, with one hundred millions, are Philadelphians. Two, with one hundred and

THE ROMANCE OF STEEL

thirty-five millions, are Pittsburghers. The real steel capital of to-day is therefore not Pittsburgh, but New York, which controls eighty-five per cent. of the entire business. Of the remaining fifteen per cent., nearly all is controlled in the three cities of Philadelphia, Pittsburgh, and Chicago. The small independent iron-and-steel making communities have been almost absolutely wiped out; in proportion to the total volume of trade, they are practically extinct. This is the day of big things.

A GAME FOR MILLIONAIRES

The American steel trade has become a game for millionaires only. Even they—even the money kings—must associate before they dare to make steel. Six centuries ago, steel was a royal metal. It was made and used only by kings. To-day, steel is used by every man, woman, and child in the United States; but it is made only by those who are royal in the new commercial sense. In the spiral of industrial evolution it has become again a metal of kings.

“No steel concern can compete with the United States Steel Corporation unless it owns its raw materials and can make from two thousand to two thousand five hundred tons a day—a plant that would cost from twenty to thirty millions,” said Willis L. King, vice-president of the Jones & Laughlin Company. Taking twenty millions as the minimum, we find no more than a dozen companies that may confidently hope for a continued existence. The others, says this veteran steel-maker, must fall out of the race.

The famous Lynn iron-works of a century and a half ago was built for five thousand dollars. Queen Anne's blast-furnace in Virginia cost her sixty thousand dollars. Baron Stiegel's renowned glass and iron plant, castle and all, was built for the one-hundredth part of twenty millions. And when Carnegie first got his standing as an iron capitalist he brought



FOSTER MILLIKEN



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

STEEL KINGS OF MANY CITIES

only six thousand five hundred dollars in his hand. To-day, the small men are walled out. Even at the mines they are excluded. The entire Lake Superior region is in the hands of a few operators. A crane for moving ore costs as much as a whole iron-works could be built for fifty years ago.

“A single blast-furnace, making one hundred and fifty thousand tons a year, cannot be built now for less than a million dollars,” said James Gayley, the “pig iron king” of the United States Steel Corporation, when I asked his opinion as the ablest expert on the question of cost.

At that greatest of battles, Mukdèn, the Japanese army advanced in the form of a vast crescent, ninety miles long. Behind its center stood Oyama, flashing his orders by telephone to every part of his “far-flung battle-line.” Such are the new tactics of the modern generals—guns that shoot farther than the eye can see, messages that can be sent without even the makeshift of a wire, explosives that shatter stone walls into dust! What would a resurrected Cæsar think of these miracles? What would be the amazement of a Charlemagne or even a Napoleon? Yet, wonderful as this military progress has been, it has not been as revolutionary as the changes that have taken place in the making of steel. “Even Captain Bill Jones would rub his eyes,” said several steel-makers, “if he could see some of the machinery that we use now.”

CHAPTER XII

THE FUTURE OF STEEL

Opinions as to the Direction of Future Development—The Vastness of the Industry To-day, and Its Expansion through the Discovery of New Uses for Its Product—Cities that May Become Capitals of Steel—The Battle Against Conservatism.

WITH this chapter the long "story of a thousand millionaires" comes to an end. It can now be seen that it was no idle boast to claim a thousand millionaires for the American iron and steel trade. As a matter of fact, there was enough new money made in steel last year to give two hundred and fifty men a million dollars apiece. And at the present unparalleled rate of speed, we could very nearly produce a thousand Steel Kings in a thousand days.

Now that we are making enough iron in one year to give thirty-seven pounds to every man, woman and child in the world, it would seem as though the limit of growth had been reached. But the men of iron and steel say that the to-morrows will beat the yesterdays. There will be no halt, they say, in the steady procession of improvements.

We have seen how a great business grows; how it enriches those who are loyal to it; how it builds cities, creates new industries, and pushes forward the progress of civilisation. And now the final question is, what about the future of the American steel trade?

On this subject there are bulls and bears, as Wall Street would say. There are some who think that the steel business has been overstimulated and overcapitalised—that the great corporations will fall apart because of their size and their

THE FUTURE OF STEEL

monopolistic nature. "Modern directorship is too irresponsible," say these men. "Directors do not direct. They watch the price of stocks and forget the making of steel. After this stock-company phase of our industrial evolution is ended, we shall go back again to one-man ownership and free competition."

Others—the large majority—think that the present situation is satisfactory and likely to continue for a long time. "There is enough of the trade organised to give stability," they say, "but not enough to create a monopoly. To go back to one-man plants is impossible, because of the competitive pressure that would destroy profits. And complete consolidation is not advisable, in spite of its economies, because it would put the whole trade into the power of a single bureaucracy."

A third opinion—the most optimistic of all, is that of Carnegie. None but he is so idealistic. His dream is of a national, non-governmental, co-operative steel business, "with every workingman a capitalist and every capitalist a workingman." He describes this communism of labour as "the only safe system"—"a splendid vista."

A fourth possibility was suggested seriously by one of the Buffalo steel barons. "Carnegie is out of the steel business," he said, "but his millions are not. Suppose his heirs should take their income of fifteen millions a year and invest it in United States Steel stock whenever there was a slump in the price, how long would it take them to get control of the big corporation? Carnegie holds a first mortgage on the Steel Trust for one-third of its value, and it is not to be expected that the immense Carnegie fortune can be pushed easily out of the steel trade."

With regard to these varying opinions, the facts show, in the first place, that the greatest glory of the Steel Age is yet to come. We have climbed to a place where the American steel man says, "The world is my market." We produce

THE ROMANCE OF STEEL

nearly half the steel of the world. We are selling other nations a hundred millions' worth a year, in spite of their cheaper labour. We have swept to the front with such gigantic strides that no other country has to-day any hopes of becoming our equal. Germany, which is far ahead of foreign nations, is plodding along where we were eight years ago.

THE WONDERS OF STEEL

To sum up once more the wonders of American steel magic, let me give a few final illustrations. If all our five hundred and eighty seven rolling-mills were arranged in a circle around Pittsburgh, the circle would be a hundred miles in diameter. Inside this might be a circle three-quarters as large, composed of our five hundred and thirty-two smaller steel-mills and our three thousand one hundred and sixty-one puddling furnaces. The five hundred and seventy-seven open-hearth works would make a third circle, fifty miles across. The four hundred and ten furnaces would form a fourth, thirty-five miles in diameter. And in the centre would be a flaming hub of one hundred and three Bessemer converters, a mile in circumference, pouring out a fiery river of molten steel at the rate of two and a quarter million pounds every hour of the day and night.

Put the whole American nation on the scales and, at ninety pounds apiece, they will weigh no more than the iron that our furnaces are making every two months. In the last three years we have produced enough to outweigh all the men, women and children in the world.

King Steel has dethroned King Corn and King Cotton. There are men now living who can remember when the United States produced no steel at all and very little iron, yet to-day our furnaces make enough iron to put a belt around the earth,

THE FUTURE OF STEEL

ten feet wide and an inch thick. This, the iron men say, is a fair year's work. As we have seen, we use six times our own weight of iron in one year—two thousand seven hundred and fifty pounds per family. We feed our furnaces every twelve months a mountain of ore that would tower a hundred feet above our highest skyscrapers.

Gather together all the families that depend directly upon the iron and steel trade for their living, and they will make a State more populous than Illinois, which is the third largest in the Union. This "iron and steel world," as it justly calls itself, has its own literature—technical books that are as mysterious as Sanskrit to the ordinary reader, and magazines whose advertising brings a small fortune with every issue. It has its own laws, its own perils, its own rewards. If we consider it with regard to these three factors—its numbers, its wealth and its organisation—there is no trade to equal it on the face of the earth.

How do we know it will grow? Because of the increasing number of new uses for iron and steel. It is only a matter of time until railroads will have to buy steel ties as well as steel rails. The heavier traffic and the increased cost of wooden ties will make the steel-tie a necessity. Steel ties are not an experiment. The Carnegie company has been using them for six or seven years on one of its ore railways. The Erie, Baltimore and Ohio, Pennsylvania, New York Central, and Lake Shore railroads are already throwing out wooden ties and laying down steel ones. Such an improvement will enormously increase the steel bills of the railroads. They are to-day buying one-eighth of all the steel, and a ton of ties will not go half as far on a railway as a ton of rails. At the Homestead works there is already a steel-tie department—the germ of a new industry.

As for the pressed-steel car business, that has been an established success for half a dozen years. One company reports

THE ROMANCE OF STEEL

earnings of fourteen million dollars in that time. England has not yet started in this line. When Charles T. Yerkes was equipping his new underground London railway he was obliged to place an order for four hundred steel cars with an American firm, as no English manufacturer could make them. Steel trolley-cars are now running on the streets of American cities. Six months ago the first steel baggage-car was placed on the rails of the Erie Railroad. The frequent loss of life in wooden passenger-coaches, which are easily "telescoped" in the event of a collision, is compelling railroads to consider the steel-car proposition. It was noticed by railway men that among the cars exhibited at the St. Louis Exhibition, not one was made of wood.

THE NEW STEEL CITY

Then there are to be the new steel cities of the future. We have already built our cities twice—once of wood and once of brick. For nearly twenty years we have been building a few high city structures of steel, but steel-makers declare that the private houses of the coming generation will contain a surprising amount of steel in various forms.

"I'm building a new house at Pride's Crossing, Massachusetts, and I'm astonished to see how much steel it takes," said Mr. Frick.

"Expanded steel," which resembles a mesh made by steel ribbons, is replacing lath. Ornamental steel ceilings are replacing plaster. Corrugated iron in thin sheets is replacing wooden siding in the building of factories. In England and Germany many new uses are being found for steel in connection with cement—an absolutely fire-proof combination. As steel plants are now manufacturing cement from their slag, they will reap a double profit if this method of building is adopted in the United States.

THE FUTURE OF STEEL

Wood has had its day in the building of cities. The recent disastrous fires in Buffalo, Baltimore, and San Francisco have shown that the steel frame is not enough. As long as wooden floors, partitions, doors, window-frames, etc., remain, there is danger. Our total fire loss is between one and two hundred millions a year. In the last twenty-four years more than three billions have gone up in smoke. And experts announce that the timber supply of Minnesota will be exhausted in less than fifteen years. So it is not unlikely that the boys and girls now in the public schools will live to see the passing of the frame house, and the substitution of a structure made of cement and steel.

Several American cities can now boast steel-frame churches of the largest size. New York's magnificent Subway is practically a thirty-mile tube made of steel and cement, just as its elevated railway is a thirty-mile steel bridge. That colossal structure, the new twenty-million-dollar Williamsburg Bridge, between New York and Long Island, required forty-five thousand tons of steel. In a skyscraper of the first class, such as the new First National Bank Building, of Chicago, for instance, with its eighteen acres of floor space, ten thousand tons of steel are riveted together.

Take another item—wire. It is hard to realise, but true, that there are twice as many millions in wire as there are in structural steel. At its present rate of increase, wire will soon require more steel than rails. Out of every ten pounds of steel produced, one is manufactured into wire. Nothing else takes so many forms. It can be made into a Brooklyn Bridge cable, with six thousand four hundred strands, or into an almost invisible thread, one-tenth as thick as a hair from your head. It may be woven into the cage-front of a tiger, or into a fine-spun gauze with forty thousand meshes to the square inch. You will find it in your piano, sustaining a tension of about twenty tons, and in your watch, made into the tiny hair-

THE ROMANCE OF STEEL

spring. In fact, when we sum up the almost innumerable uses of wire, we can understand the enthusiasm of John W. Gates, when he exclaimed, "There's millions in it!" and forthwith made himself the wire king of the United States.

To-day, even in the most insignificant items, there are millions to be made. Last year former King Cotton paid about two and a half millions to King Steel for cotton-ties alone—thin strips of sheet-iron used to bind the bales of cotton. A carpet-tack is not an imposing article of commerce, yet a single factory in Chicago is producing three million pounds in a year. A wire nail looks unimportant enough, yet any one who owned the thirteen million kegs of wire nails that we produced last year would possess a fortune equal at least to that of Frick.

Many an order for a single steel article carries in itself a competency. To name a few, there are—the new steel dry-dock at New Orleans, five hundred and twenty-five feet in length and one hundred feet wide; the three hundred and ten foot steel chimney of the Nichols Chemical Company, Brooklyn; an engine in the United States Steel Corporation's plant at Youngstown that weighs nearly a million pounds; the Manhattan bridge; the three enormous steel flumes, eighteen feet in diameter and a mile in length, which have recently been laid at Niagara Falls; and J. J. Hill's group of steel elevators at Superior, Wisconsin, holding three million bushels of grain apiece.

There has been for several years a block of steel roadway in New York City, the necessary steel plates having been donated by Mr. Schwab. To equip a road with these steel plates would cost, it is said, not more than fifteen hundred dollars a mile, and it is being freely predicted that the road of the future will be of this kind. "I expect to see a road of this sort from New York to San Francisco, and around the suburbs

THE FUTURE OF STEEL

of all our large American cities," said W. E. Scarritt, president of the American Automobile Association.

Almost every week the newspapers announce a new use for steel. Steel bathtubs are being stamped out at the rate of a hundred and fifty a day. Steel furniture is worrying the furniture makers of Michigan. Barrels, so one manufacturer says, are henceforth to come from the steel mill and not from the cooper-shop. As we use about three hundred million barrels a year just now, this one item may mean new plants, new multimillionaires.

Now that steel is being used in construction work, there is scarcely any limit upon the novelties that we may expect. We hear of an aërial ferry in Duluth, by means of which a car is swung in midair from shore to shore, and of an aërial hotel in Switzerland, above the Lake of the Four Cantons, hanging two thousand feet above the water.

THE STEEL COST OF WAR

If the great war of the future, long predicted, should come—if the idle armies and navies of Europe should suddenly rush together in the old undying game of war, the two decisive factors in the conflict would be money and steel. In their assault on Port Arthur the Japanese fired two thousand tons of shells. Both nations combined fired away sixty million dollars' worth of death and destruction in the struggle over a single fortress. The death of every soldier cost more than his weight in iron.

In the long stretch of American iron-making, from 1645 to 1860, there was not one vast fortune made in the trade. It was the Civil War that created the first multimillionaires of steel and provided the capital for the giant plants of today. And, as Bloch, Atkinson, and other statisticians have shown, the wars of the past were inexpensive little quarrels

THE ROMANCE OF STEEL

when compared with the wars of the present or the future.

Most of the facts point toward an enormous foreign trade in the near future. No degree of growth in this line should be surprising, for the reason that the history of our iron and steel exports has been nothing but a series of surprises, both to ourselves and to foreign nations. To-day we are selling the other countries more than a hundred million dollars' worth of iron and steel every year. The checks our steel men get from their foreign customers in sixteen months would have paid the whole cost of the American Revolution.

Yet it is only a century ago since not a pound of iron was made in Ohio—since Pittsburgh was a frontier village, without a rolling-mill or a bank—since Jefferson wrote to his friend John Adams: "We cannot make iron in competition with Sweden or any other foreign country."

It is only twenty-three years since Andrew Carnegie himself—the most sanguine and optimistic of men, said: "Steel is made in England for one-half of what it costs in the United States. Not in our day will it be wise for America to leave the land. It is a very fair division as it stands—the land for America, the sea for England."

In 1898 an American bridge company got the contract for building the great Atbara Bridge on the Khartum railroad, to the astonishment of the British steel men. The following year locomotives made in Philadelphia were running on the Midland railway in England. At the Glasgow Exposition it was admitted that the best exhibit of tools, lathes, drills, etc., was not from Sheffield or Newcastle, but from Milwaukee. Then the Glasgow Herald appeared with a notice that it was now being printed upon a "Hoe" press. In 1904 four British steamers sailed from Conneaut laden with steel for Liverpool—the first all-water shipment from Pittsburgh.

THE FUTURE OF STEEL

OUR WORLD-WIDE SUPREMACY

Five years ago Londoners were startled to see the steel frame of an American skyscraper towering above Chancery Lane. Then the Duke of Marlborough, having married an American wife, gave an American firm the contract to build his new steel-frame house on Curzon Street. Schwab, being in England, made a few remarks which added to the uneasiness of British steel-makers.

“We can sell billets, delivered in Great Britain,” he said, “for \$16.50 a ton—\$2.69 cheaper than the present British price.”

Some one else figured out that the labour-cost of a ton of iron in Pittsburgh was reduced to forty-one cents, as against seventy-two in England, although Pittsburgh wages were double those in Sheffield.

Last year we sent over twenty million dollars' worth of iron and steel goods to Great Britain. The rest went to various parts of the world. At the Alexandria docks, in Egypt, you may see coal unloaded by American machinery into American pressed-steel cars. It will be drawn on Pittsburgh rails by Philadelphia locomotives to Khartum.

On the banks of the Jordan, in the Holy Land, you may see an American bottling-plant, made in Cleveland, which is shipping the water of the sacred river to all Christian countries.

In remote parts of India, Burma, Persia, Madagascar, you may find structural steel from Homestead.

The rails and bridges over which the Russian armies rode from Moscow to Port Arthur, and the steel ribs of the depots and the Dalny houses, were for the most part made in Pittsburgh and put in place by American machinery.

It was a strange fact that immediately after the Spanish-American war, Spain became for a time our best customer for railway material and machinery. One Spanish importer in

THE ROMANCE OF STEEL

Barcelona had the words, "American machinery forever!" engraved on his notepaper. Germany, our chief competitor, opened her eyes recently when a Connecticut firm shipped to Berlin a complete foundry. This firm, it appears, makes foundries of different sizes and sells them by number, as though they were collars or shoes. Even the European farmers have caught the habit; they have been paying us over a dozen millions a year for our agricultural machinery.

To-day our iron and steel supremacy is questioned by no one. Lord Rosebery tells a London audience to take heed to "the American disdain of finality." American young women, on their way to Dresden to study music, are passed by German young men who are on their way to Pittsburgh to study steel. One English writer has summed up fourteen points in which the American steel trade is superior to the British, as follows: More ore; cheaper coke; cheaper transportation; tariff; superior skill of workmen; greater efficiency of superintendents; larger scale of operations; more enterprise; promotion by merit; larger scrap-heap; higher wages; bonus system; employment of younger men; and more complete organisation.

Two things we lack—a better knowledge of what foreign nations want, and an American merchant fleet. The Pittsburgher too often assumes that what suits him will suit the rest of the human race. Even steel men have some national prejudices and customs.

"When I first shipped iron to China," said William A. Rogers, of Buffalo, "my agents had difficulty in selling it. The Chinese said, 'Melican iron tloo hard.' After a while we discovered that they had been accustomed to buy iron in tiny bars that could be broken by hand, while our bars were so thick that it was half a day's work to break one. We made our bars thinner and there was no more trouble."

As to our need of more American ships, it has been stated that ocean freights can be cut in half by the establishment of an

THE FUTURE OF STEEL

American merchant-marine. No freight is easier to carry than steel, yet at present the rate from Pittsburgh to Liverpool is equal to the cost of making the steel from the pig iron.

THE STABILITY OF PITTSBURGH

As to where the Pittsburgh of the future is to stand, no location is ideal. There are so many factors necessary to success in the steel trade that no one spot contains them all. At present the trade is scattered between Birmingham and Chicago, and between Worcester and Pueblo, with the vast bulk of it in the Pittsburgh region. Since 1645, the centre of the industry has moved from Lynn, through Connecticut to New Jersey, then *via* Philadelphia to Pittsburgh, where it has remained for fifty years. But since Minnesota has become the principal storehouse of ore, there has been a growing conviction that the steel mills and furnaces of the future will be nearer to their base of supplies. The point in dispute is whether the ore should be brought to the coke, as at Pittsburgh, or the coke to the ore, as at Duluth.

The Pittsburgher, of course, laughs at prophecies. The roar and smoke that he loves will continue, he thinks, until the last trump shall sound. He feels that even then the response of Pittsburgh will be: "Can't go—too busy."

If you remind him that Pittsburgh is four hundred and fifty miles from tide-water, he replies: "That is a disadvantage of only two dollars a ton, and it will be still less when we build our ship-canal to Erie and deepen the Ohio River to Cairo."

If you say that Pittsburgh is a thousand miles from its ore, he replies: "It is not the distance that counts, but the cost of mining and freight. We can dig fifty tons in five minutes, and we bring it to our furnaces in our own ships and on our own railroads, at the lowest cost ever reached in the history of transportation." It is the general opinion that the supremacy

THE ROMANCE OF STEEL

of the Pittsburgh region will not be endangered by any competitor now in the field, or by any changes that can be foreseen at the present time. The historian is not yet born, so say the steel men, who shall write the "History of the Rise and Fall of the Steel Empire of Pittsburgh."

If Carnegie had been twenty years younger in 1901—and this was the unanimous wish of his forty-five thousand men—the pivotal point of our steel trade would to-day be Conneaut, on Lake Erie, over a hundred and fifty miles north of Pittsburgh. Many of the forty young ex-partners of Carnegie express regrets that the "chief" did not remain in command and carry out his original plan to build an immense steel mill at Conneaut. Carnegie had bought five thousand acres near the Conneaut docks. He had paid two hundred farmers half a million to leave their homes. He had given Conneaut real estate such a boom that its citizens have been stranded ever since on the high banks of expectation. "We had the men, the money, the raw materials, and the location," say the Carnegians. "Conneaut was the hub of the wheel, and in five years we could have made the Carnegie company irresistible."

"Conneaut is the central spot," said Carnegie, when I asked him concerning the future of the steel trade. "It is the place where all the raw materials can best be assembled." Looking further ahead, as usual, than other steel men, he spoke of "the movement towards the lakes." There is no doubt that the threat of Conneaut added fifty or a hundred millions to the price which he demanded and obtained from Morgan.

If, as a few suggest, the railroads should decide to enter the steel-making business, now that there is a prospect of their having to buy not only rails, but steel ties and steel cars as well, the probability is that they would select Ashtabula as their manufacturing spot. This is five or six miles from Conneaut, with a much larger harbour. Until recently, Ashtabula has been the busiest ore-port on the lakes. To-day Conneaut

THE FUTURE OF STEEL

stands first. The Ashtabula ore-docks are owned mainly by the Pennsylvania and Lake Shore railways, so that if these railways should decide to make their own steel as well as their own cars and locomotives, which at present is not likely, they would naturally choose a site which would be as near as possible to the ore.

Cleveland had the chance to become Pittsburgh the Second, and lost it. Before Carnegie got his eye on Conneaut, he called Cleveland "the central zone." But Cleveland lacked the public spirit to improve its harbour. In 1896 its port was the most dilapidated on the Great Lakes. The entrance was narrow and dangerous. The piers were rotten. The water was shallow. Only \$50,000 was spent upon it in three years. Vessels were wrecked at the mouth of the harbour. But the water-front was in the hands of obstructive railroads and numerous small holders, who blocked the efforts of the public-spirited Chamber of Commerce. Cleveland became the headquarters of the Lake Superior ore trade and the shipping. Scores of millions of iron and steel money have helped to make Cleveland the richest city of its size. But it has never become a steel-making city.

The traveller who for the first time visits Cleveland, and finds a more populous city than Madrid, may also find some old residents who can remember when it was a tiny village in the forest. Such has been the rapid growth of the "Forest City." It is now a city of three thousand streets and three thousand manufacturing establishments. Its specialties are wire, wire nails, nuts, bolts, hardware, etc. Its mechanics have more skill than those of Pittsburgh, but receive less pay.

One would think that Cleveland and Pittsburgh had entered into a formal agreement with one another to divide the steel trade—Pittsburgh to make the steel and Cleveland to manufacture it into the various articles of commerce. So far, neither has encroached seriously upon the province of the

THE ROMANCE OF STEEL

other. Cleveland has followed the advice of its first great steel-maker, Henry Chisholm, who said: "Make up as much of your steel as possible. Do not sell it as raw material." Chisholm was the father of the Cleveland steel trade—a self-made man of extraordinary force and ability. He formulated the manufacturing policy of the city, and built up a fortune which has been made greater by his sons.

Lorain, near Cleveland, is an ambitious young steel city. Its natural advantages are cheaper land and a good harbour. When Mayor "Tom" Johnson, of Cleveland, invented his "girder rail" for street railways—the rail that he rode to wealth, he selected Lorain as the best site for his steel mills. After a few years of successful operation, he dropped steel and picked up politics, letting his Lorain Works slip into the Federal Steel Company, and thereby into the United States Steel Corporation.

Continuing westwards, we are surprised to find that Toledo, with its twenty-three railroads and twenty-five miles of docks, has no iron or steel plant of any size. A great quantity of iron is used, but very little made. A tract of 355 acres is being held by a Cleveland ore company, which expects at some time in the future to build a steel mill.

Detroit, also, for some equally inexplicable reason, does not make a pound of Bessemer or open hearth steel. It holds the honour of having produced the first Bessemer steel and the first steel multimillionaire—Captain Eber B. Ward. The eclipse of Detroit as a steel city is an illustration of the fact that location and opportunity are not the two greatest factors. The first Lake Superior ore was discovered in Michigan by Michigan men. Captain Ward's \$5,000,000 fortune had demonstrated the profitableness of the steel business: Yet there is no steel plant of any kind at Marquette or the American Soo; and the steady procession of ore-ships that carry prosperity to Pittsburgh and Youngstown sail past the docks of Detroit. If



HENRY CHISHOLM



LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

THE FUTURE OF STEEL

Captain Ward had lived for twenty years longer, and kept away from newspaper controversies and spiritualistic séances, his force and enterprise would have put Detroit in the front rank as a steel city. Two years ago D. R. Hanna, son of the late Mark Hanna, selected Detroit as a favorable site to make iron, and is now producing about 100,000 tons a year. New railroads now connect Detroit with the coal fields of Ohio and West Virginia; and coke ovens have been built. But at the present time, Michigan, the birthplace of cheap steel, does not make an ounce of the indispensable metal.

Cincinnati, too, had its chance and lost it. The first really good steel made in America was produced in Cincinnati by William Garrard in 1832. It was crucible steel, not the cheap metal that is commonly called steel. But Cincinnati has forgotten that Garrard lived and worked. I looked through its public library in vain for the mention of his name. Its Chamber of Commerce was dumb; and with the exception of an old oil painting in the rooms of the Historical Society, there is nothing left in Cincinnati to honour the memory of the first American steel-maker. The Cincinnatians who read this page will probably hear of him for the first time. To-day Cincinnati is content to be one of the leading pig-iron markets in the world, and perhaps the greatest producer of iron and steel safes.

Chicago, of course, is second only to Pittsburgh as an iron and steel city. If there were no Pittsburgh and no Carnegie company, we should still have much to boast of in Chicago and the Illinois Steel Company, not to mention the great works that the Steel Trust are building at its new town of Gary. One-third of all our steel rails are made at Chicago.

The unique feature of Chicago's iron and steel trade, so far as the future is concerned, is that the corporations which manufacture agricultural machinery have bought their own ore-mines, coal-mines, timber-lands, furnaces, and rolling-

THE ROMANCE OF STEEL

mills. Two-thirds of all the agricultural implements in the world are made in Chicago, but the steel that is used adds nothing to the profits of the steel kings.

Milwaukee is destined to be the "machinery city" of America. When the great Allis-Chalmers machinery works is completed, if it ever is, it will be unapproachable in its line. And another city which will not allow itself to be forgotten when the conversation is upon the future of steel, is Duluth. Hitherto, indeed, so far as the making of iron is concerned, the record of Duluth is a story of calamity and failure. The unparalleled ore-supply of the Mesaba Range is practically in Duluth's back yard. It has ten square miles of harbour. The St. Louis River flings itself at the city's feet in a series of torrents which might provide unlimited electrical power. And the ore-ships that come back from Lake Erie without cargoes might bring coal and all other imported necessities at the lowest freight rates.

Yet in this year, 1907, Duluth can point to only one small furnace, making two hundred and fifty tons a day. There is not a steel mill in the State. The Pittsburgh vikings sail up to the iron ranges and carry off the loot—millions of dollars' worth every summer week. And all the while, for some reason which no outsider can understand, the men of Duluth and Superior—twin cities—have been satisfied to run errands and quarrel, like a couple of messenger-boys.

Some day Duluth will awake and make her dream come true. She will unite with Superior, as Pittsburgh will with Allegheny. The two cities are really one in financial interests. Now that less and less coal is needed to produce a ton of iron, Duluth's opportunity to build profitable blast-furnaces is growing better year by year. Geographically, Duluth is located so that she cannot escape being an important iron and steel community. She stands at the western doorway to the Great Lakes—almost in the exact centre of the conti-

THE FUTURE OF STEEL

ment. One of the few possible sites for a grand city is hers, and she has her face towards the rising sun.

Texas and Puget Sound are also mentioned as probable iron and steel centres. At present, neither region is to be found on the map of the iron business. Texas has a couple of little charcoal furnaces, one being owned and operated by the State, and Seattle has one small furnace and rolling-mill. It is reported that immense deposits of fine iron ore have been found in Llano County, Texas; and since the discovery of the oil at Beaumont, which could be used as fuel, the door of opportunity has been opened to the Texans. Beaumont is near the sea, northeast from Galveston, and the ore mines of Llano. Cuba, Venezuela, and Colombia are within a thousand miles. Here is a hint for some embryonic Carnegie of the Lone Star State.

CHANCE FOR A SECOND CARNEGIE

That there is a chance for a second Carnegie, cannot be doubted, unlikely as the outlook may seem to the steel-workers of Homestead and Duquesne. It is the unexpected that happens in the steel world. Any one who had predicted a Carnegie and a steel fortune of a quarter of a billion to the Pittsburghers of thirty years ago would have been regarded as an unbalanced enthusiast. One thing is certain—that the “American disdain of finality” will prevent the formation of a perpetual dynasty of steel or any sort of monopoly.

When Croesus, King of Lydia, showed Solon his golden treasures, Solon said: “If another comes who hath better *iron* than you, he will take away your gold.” The same warning may be given to our steel kings. As long as American workmen continue to think while they work, there may come some revolutionary idea that will pull down the old dynasty and set up a new one.

The battle against conservatism and self-complacency is not

THE ROMANCE OF STEEL

ended. Fifty years ago, when Kelly and Bessemer pointed out the path to millions, they were treated like impertinent meddlers by the steel men of America and Europe. Sheffield sneered at Bessemer until he built a plant of his own and cut prices in half. Pittsburgh lost twenty-eight years by its disdain of Kelly and his "air-boiling process." And in my hundreds of conversations with the chief steel men of to-day, I have found the same conservative attitude in many instances—the same content with things as they are, and the same haughtiness towards the man who has nothing but an idea.

There are still heart-sick inventors tramping from one corporation to another, flouted by clerks and bullied by superintendents. The steel trade was never so well organised, but as yet it has no department of invention, in which original suggestions would be treated with respect and fairly tested. It is an erroneous notion that any large body of men will be unanimously progressive. All innovations must be forced through by the aggressive few. In spite of all that has been accomplished by invention in the American steel trade, there is not yet any prospect that a peace treaty will be signed between the men of ideas and the men of experience.

One innovation which is running the gantlet just now, is James Gayley's "dry blast." Gayley needs no sympathy. He is one of the forty Carnegie millionaires and the vice-president of the United States Steel Corporation. Seventeen years ago he broke the world's record for making the most iron with the least coke, and he has kept in the front rank ever since. He will be the "pig iron king" of the world when his invention is fairly appreciated.

Gayley's aim is to take the moisture out of the air that is blown into the furnace. This is not a small item. The air blown into a furnace in one hour will contain from forty to three hundred gallons of water. Gayley's plan is first to carry the air through an ammonia chamber, which takes out the

THE FUTURE OF STEEL

moisture in the form of frost. When the chamber is clogged with frost, hot brine is forced through the pipes. This dry or Gayleyised air produces a hotter fire with less coke. At its first test, this process made eighty-nine tons more in one day—a gain of about twenty per cent.

“This method can be applied to the making of Bessemer steel,” said Mr. Gayley. “It will prolong the usefulness of the converter, because it will make the Bessemer process more uniform.” His invention is not absolutely new to iron and steel men, but he has made it workable. “We have all thought over it and talked over it,” said John Fritz; “but Gayley has *done* it.”

This “dry blast” is no longer an experiment. It has been in use since August, 1904, at one of the Pittsburgh furnaces. But the high financiers of the Steel Trust have been slow to recognise its value. Already they have lost the chance to monopolise the invention, as Gayley has recently allowed it to be installed by the Warwick Iron and Steel Company, of Pottstown, Pennsylvania, and the E. & G. Brooke Iron Company, of Birdsboro, Pennsylvania.

Another innovation which has only reached the “pooh, pooh!” stage, as it has been called, is the making of steel *direct* from the ore. This was Kelly’s dream. He believed that both the blast furnace and the converter would be abolished, as a couple of unnecessary middlemen. During the last ten years of his life he studied this problem and succeeded in smelting the ore by electricity. But the cost of making steel by this short way proved to be more than the cost of making it the usual long way. He maintained that the day would come when ore would be smelted for fifty cents a ton, and up to the time of his last sickness he was engaged in experiments to cheapen his process.

This endeavour is less of a dream to-day. At Gysinge, Sweden, high-class steel, said to be equal to crucible steel, has

THE ROMANCE OF STEEL

been made direct from the ore by an electrical process, water-power being used to cut down the cost. The Canadian Government, which has been remarkably generous to steel-makers, has recently appropriated fifteen thousand dollars to experiments in electrical smelting. Edison has given his genius and a large fraction of his wealth to the solution of this problem. Consequently, it is not now to be classed among the will-o'-the-wisps, but among those improvements that may be expected in the near future.

As to the rolling-mill of the future, we may expect to see it still more automatic. The diminished fraction of cost paid to labour will continue to diminish. The ideal mill would be one which was run altogether by machinery and a few unskilled labourers, with a superintendent giving orders by telephone. In fact, the optimistic Holley used to say, in a spirit of prophetic jest: "The day will come when we'll start a rail-mill on Monday morning, lock the doors, go home, and come back the next morning to count the rails and give the mill another start."

In some mills three workmen out of four are unskilled, and the number will some day be still greater. The skilled workman is too likely to take credit to himself for the great amount of work done by the machine. Formerly he was paid in proportion to his output, and it is hard for him to realise that he has become a very insignificant fraction of the apparatus.

An instance of this was brought to my notice in a Pittsburgh mill. A superintendent had put in a new planer, practically automatic. The first skilled machinist who was put in charge of it looked at its enormous output, and at once demanded higher wages. He was removed and a second machinist put in his place. He, too, promptly asked for more pay. So did the third man. This put the superintendent in a rage. He went out into the yard and accosted a labourer.

THE FUTURE OF STEEL

"Hey, Joe," said he, "do you know anything about machinery?"

"No, sir," responded Joe.

"Were you ever in a machine shop in your life?"

"No, sir."

"You're just the man I want," said the superintendent.

The labourer was put in charge of the planer, and he is there still, while the pride of the skilled workmen has been humbled.

Ever since George Fritz, in 1872, so improved his rolling-mill that three men did as much work as eight were doing elsewhere, machinery has been treating both human skill and human labour with contempt. Electric motors have worked wonders, not only in mills, but on docks and in mines. All that many a workman needs now is an ear to hear an order, an eye to see an electric button, and a finger to touch it. Electricity and the inventor do the rest. Dependence upon machinery is becoming almost an instinct among the workmen of a steel-mill. A boy who was sweeping the floor of a Pittsburgh mill, for example, found his path obstructed by a ten-ton-machine which had not yet been put in its place.

"Hello, Jim," he called to a labourer, "come here and move this machine back about ten feet. I want to sweep under it."

Jim moved a travelling crane until it stood over the machine, and moved the twenty-thousand-pound obstacle out of the way as easily as if it were a box of cigars. The boy went on with his sweeping as if nothing extraordinary had happened. He was a Pittsburgh boy and accustomed to miracles. And electricity, which is a new force—sixteen years old in steel mills—will perform its greatest deeds in the future.

THE ROMANCE OF STEEL

THE QUESTION OF QUALITY

The two most important problems of the future steel-maker, though they are not directly related to the increase of profits, are the improvement of the quality of the steel and the protection of the workmen from injury and violent death.

"We are trying all the time to make better steel," said Mr. Frick. "But the difficulty is how to do this and yet keep up the quantity."

"Quantity! That's what we're all after," said President A. C. Dinkey, of the Carnegie company. "I know of only one steel works in this country that isn't trying to beat its record."

"No truthful steel-maker can deny that we are too likely to sacrifice quality to tonnage," said one of Carnegie's former partners, who wished his name withheld. "There is steel turned out when there is a rush of orders that is not good enough to use," said he. "After all, this Bessemer process is an ocular process only. It is not exact. It cannot be made exact. A workman stands and looks at the colour of the sparks. If he is careless—if he is tired, the whole batch of rails may be flawed. The open-hearth process is slower and much more accurate. It is like a cook making soup and tasting it every now and then until it is just right."

"If I were only young again—if I were only fifty instead of eighty-five—I'd start a steel works," said John Fritz, when I talked with him in his plain little stable-office at Bethlehem. "There never was such a chance as there is to-day. But," he added with stern emphasis, "I'd go in for quality—quality—quality. The greatest steel-maker of the future will be the man who makes the best steel, not the most."

Among practical steel-makers, no name ranks higher than that of John Fritz. He and Holley are the only two who have been publicly honoured by their co-workers. He was the leader of his profession before Carnegie had made his first

THE FUTURE OF STEEL

steel dollar. He belongs to the past, of course, but he is a man who speaks with knowledge and authority. His voice is the clearest in predicting that in the future steel will be made first for use and second for profit.

A rough and ready civilisation demanded a rough and ready metal. But with the increase of capital—with the demand for bridges that will not fall, boilers that will not burst and buildings that will not burn, we shall have a steel that is safe first and cheap afterward. The compulsion of public opinion, aroused by a continuance of disasters caused by cheap and flimsy materials, will push the steel men away from quantity to quality. The terrible Ashtabula bridge disaster in 1877 raised the quality of metal used in bridges fifty per cent. The burning of a tinder-box theatre in Chicago has made every American theatre safer. The tragedy of the General Slocum has put scores of fire-trap steamships out of commission. And the disasters that are being caused by bad steel are gradually proving that "the best is the cheapest."

THE FLESH AND BLOOD COST

In this story, which is mainly a tale of how steel has been turned into millions, there is no room to tell of the myriads of workmen who have lived and died under the furnace smoke. The flesh-and-blood cost of the millions is another story. But even the directors—the financiers who have perhaps never seen how the rank and file earn their wages—are discussing ways and means to make their steel plants less frantic and dangerous for the workmen. A machine can be operated fast—the faster the better. But a man is not a machine, and should not be compelled to have a machine as his pace-maker. Machinery has raised the standard of a day's work to such an extent that no human being can compete. There must be two

THE ROMANCE OF STEEL

standards in the future—one for the machine and one for the man.

“It is terrible how the workmen are being goaded,” said John Fritz. “We have no right to shorten a man’s life by spurring him on to break the record of yesterday. The piece-work system and all bonus systems are injurious stimulants to production. The employer should pay each man a fair price for a fair day’s work and be content.”

In a few years these goaded workmen are nervous wrecks, thrown on the street like a squeezed lemon, after having set a standard of work which their unfortunate successors must maintain.

No one with natural human sympathies can pass through a steel mill without feeling that there is something merciless in the way workmen are prodded on to produce more, and more, and more. There is an infernal aspect to the frantic haste—the harsh cries—the desperate energy—the fire and smoke and roar of machinery. The remorseless mechanism of the mill—nine-tenths steel and one-tenth human—stops for nothing by night or by day. “You must either draw or be dragged to death.” There is a mill in Chicago that makes seven steel rails a minute. Every second means a dollar and a half.

“The English idea with regard to blast furnaces,” said Superintendent Charles S. Price, of the Cambria Steel Works, “is to run moderately and save the lining. What do we care about the lining? We think that a lining is good for so much iron and the sooner it makes it the better.”

This is the American plan—the plan that makes the profits. And there is no necessity to organise a society for the prevention of cruelty to furnaces. But why apply this pitiless plan to the workmen? Why say that a man is “good for so much work and the sooner he does it the better”? With the future of the American steel trade in view, will it pay in the long

THE FUTURE OF STEEL

run to tear out the lives of men—to burn them up like coke and toss them on the cinder-pile at forty?

Much sympathy has been expended, and rightly, upon those who are compelled to work in sweat-shops. But a sweat-shop is a haven of safety and rest compared to a steel plant. There is little public opinion with regard to the perils of a steel mill, for the reason that few outside of the trade know anything personally of the conditions that exist. Ladies visit sweat-shops, but they never enter a steel mill. In fact, as I found on every occasion, no visitor is allowed to enter a steel works who does not first sign a paper releasing the company "from all liability for accident or injury."

"None of the people outside know what our work is like," said a veteran steel-worker. "You or some one else may dodge through here with a guide for half an hour, but you see little of the real conditions. Why," he continued, with fine scorn, "what do you think? Queen Victoria once went to visit a steel works in Sheffield. She wanted to see for herself how iron and steel were made. So one of the steel corporations took some of their machinery and set it up in a beautiful green field. The workmen were all dressed up in white uniforms. I suppose they wore collars, cuffs, and patent-leather shoes. There was no smoke. Everything was as bright and clean as a game of cricket. The Queen sat there in an armchair and watched them play with a few white-hot bars of steel, and very likely went away with the idea that she had seen a steel mill. Nobody knows what the work is like except we men who do it, and, you see, we don't write stories for magazines or make speeches. This is the first time in my life that I ever talked for publication."

Before the machinery period began, the work required more muscle, but less nervous energy. It demanded more strength, but less vitality. There was more tugging and straining, but less danger. "When a man was killed fifty years ago, the

THE ROMANCE OF STEEL

mill was shut down until he was buried—a day or a day and a half,” said Miles Humphreys, ex-President of the Amalgamated Iron and Steel Association.

There is a pressed-steel car-works in Pittsburgh to which the workmen of the city have given the nickname of “the slaughter-house.” Rod-mills, too, are even more dangerous than an ordinary rolling-mill. The red-hot rods dart and twist about like long red snakes, sometimes spearing a workman or taking a kink and whirling around his body. On behalf of the corporations it should be said that many of the Italians, Slavs, and Finns show a strange indifference to death. “Throw him on scrap-heap. Dead man no good,” they will frequently say, when one of their companions is killed. If two Huns or Slavs are working together in a mine, and one is accidentally killed, the other has been known to continue stolidly with his work, while the body of his comrade lay beside him.

“Oh, yes, there are several Finlanders killed here nearly every week,” said the editor of a newspaper in the Lake Superior mining-region. “We have two morgues in this town, and I’ve seen both of them full at once. But what can be done? A Finlander doesn’t care as much about being killed as I do about having my tooth pulled.”

Besides what was told to me about these dangers, on several occasions I learned something about them at first hand. In one Alabama ore-mine I terrified the guide by walking on top of a wholly unguarded pile of dynamite, which lay in one corner of the dark mine. At another I was given permission to enter the mine, but was warned that I had better walk down, and not ride in the ore-cars. “The cable may break,” said the superintendent. The negro miners were going constantly up and down on these cars. The cable was considered safe enough for them, but not for others. At a third mine I saw a train of ore-cars derailed.

At a Wilkes-Barre coal-mine I saw an old workman struck

— THE FUTURE OF STEEL

and fatally injured by a shifting engine, which carried no fender. At the Bethlehem Steel Works I saw a heavy splash of white-hot steel fly within a few inches of a workman's face. Had it struck him he would at least have been scarred for life. Yet he acted as if it were a trifling matter, pulled his hat farther down over his eyes, swore, and jumped back to his place beside the great vat of molten metal. Such incidents were all in the day's work.

And so, as I have gone from one steel city to another, I have felt more often like a war correspondent than like the writer of a story of peace and prosperity. The steel business is not all dividends any more than war is all flags and music. There is a stern side—a side which ought to be made brighter by the steel kings of the future—to this story of a thousand millionaires, when we think of the hand-to-hand warfare that is being waged under the smoke of the furnace and the mill—the clank and the clatter of furious machines—the sullen smoulder of the coke-ovens—the desperate pickaxe conflict in the coal-mines—and the sudden groan of the wounded or the dying.

HIGHER USE OF STEEL

When the steel-shaper becomes an artist as well as an artisan—when the love of beauty that reigned among the aristocratic iron-workers of the Middle Ages shall be born again through a revolt from this everlasting speed and cheapness, steel will regain its former status. It will be put to higher uses. Even in the present commercial conflict of commodities, steel has forced its way above the precious metals, Watch screws, for instance, are worth \$1585 a pound, and hair springs almost twice as much. Fully twenty-five pounds of gold must be given for two pounds of these tiny nine-inch threads of steel. When the swift, frenzied Bessemer con-

THE ROMANCE OF STEEL

venter, which was especially suitable for the preparatory period of speed and quantity, is replaced by the slower and surer open-hearth process—and even Mr. Carnegie predicts this—then steel-makers will gradually rise to higher standards and more artistic aims. The most matter-of-fact steel men are recognising this upward movement in the business.

The open-hearth furnace is to be the caldron of civilisation. Out of its fiery depths will come not only the locomotives, the steamships, and the steel cities of the future, but also the lancet of the surgeon, the telescope of the astronomer, the needle of the explorer, and perhaps the “airy navies grappling in the central blue.” Out of it will come many a new automatic machine which is to-day no more than an inventor’s dream. As civilisation rises, so the quality and uses of steel will rise. Not even the human race has within it more possibilities of development than the red iron-ore of Minnesota and Alabama.

“We are on the eve of a development of the manufacturing powers of the republic such as the world has never seen,” said Andrew Carnegie. “And the nation that makes the cheapest steel has the other nations at its feet.”

“We have only begun to show the world what we can do,” said Schwab in his rapid-fire way. “We have almost unlimited natural resources. In this age of invention we have all the qualities that are necessary to leadership. The road to wealth and power is still open. In every part of the country I find men who have in a few years lifted themselves from wages to millions. We are neither dragging nor drifting. Business is steadier and better organised. And as the years go by, we will work in a larger way and on larger problems than ever before.”

Elbert H. Gary, the official head of the United States Steel Corporation, when I asked him for a final word upon the future of steel, replied—“The achievements of the past six

THE FUTURE OF STEEL

years have shown that Mr. Morgan was right in the view which he has always taken of the American steel industry. The keynote of his success has been confidence in the great future of the United States,—a confidence which has never been shaken by transient reverses. His father, who tutored him in the knowledge of finance, would often say to him: ‘Pierpont, the pessimists may secure a temporary advantage, but it is only a question of time when the growth of the country will beat them.’ Upon this belief Mr. Morgan acted when he placed the iron and steel business upon a solid and permanent basis; and sooner or later the whole American nation will share his confidence in its future prosperity. ”

The great Morgan himself, who says little and finds it easier to express himself in millions than in words, said, when asked as to the immense steel corporation which he had designed and created: “I have no hesitation in saying that the next six years will show even greater success and prosperity than has been shown in the last six years.”

And so, the concluding word of this story of steel is—Progress. There is no difficulty—not even in the imagination of the pessimist—which is greater than those that have already been overcome by the steel men of yesterday and to-day. The next generation will find new methods and new markets. Even now there are dreamers who can see the uprising of steel-ribbed civilisations in Russia, Africa, and Asia, in that nearby age when a Greater Human Race of two thousand million people shall move upward to American levels.

THE END



INDEX

A

- Abbott, W. L., 149, 275
Allen, Ethan, 41, 163
Amalgamated Association of Iron
Workers, 134, 135, 249
Steel Workers, 111, 114
Anne, Queen, 38
Anshutz, George, 162, 289
Armour-plate, 169
Arnold, Benedict, 43
Ashtabula, 350

B

- Bacon, Don H., 301
Bacon, R., 191, 214
Baer, G. F., 326
Baker, Charles W., 150
Beaman, D. C., 311
Bell, Sir I. L., 27
Belmont, August, 301
Benner, General Philip, 41
Berg, P. T., 152
Berkeley, John, first American iron
maker, 35, 36
Berwind, E. J., 295
Bessemer, Sir Henry—
His wealth, 13
His inventions, 14
His failure, 15
Birmingham—
Beginnings of, 294
Ore wealth, 296
Natural resources, 297

- Bishop, Joseph, 137
Blackburn, W. W., 151, 197
Blaine, James G., 113
Blair, C. L., 329
Boertrager, H. W., 152
Bope, H. P., 151, 275
Bordman, A. B., 301
Bowron, James, 300
Buffalo, 327
Burt, W. R., 66
Byrd, Colonel W., 283

C

- Cambria plant, 122
Carnegie, Andrew—
Childhood in Allegheny, 70
His first job, 70
His "lawless initiation," 71
Enters iron business, 73
Early struggles, 74, 75
First attempt as an author, 77
First large profits, 81
First view of a Bessemer con-
verter, 83
Secret of his early success, 85
First large steel profits, 90, 91,
94
Becomes foremost steel maker,
93
His first partners, 95
The Cæsar of steel, 103
Buys Homestead plant, 110
Buys Duquesne plant, 113

- Carnegie, Andrew—*Continued*
 His system of business, 124
 His faith in steel, 126
 His enterprise, 127
 Belief in publicity, 128
 His knowledge of details, 129
 His progressiveness, 130
 A just employer, 139
 His working partners, 145, 154,
 200
 His master stroke, 160
 His idea of a corporation, 161
 His fight for speed, 164, 167
 A medley of opposites, 170
 His American spirit, 171
 His enormous profits, 172
 Quarrel with Frick, 175
 His selling campaign, 184
 Wages war on competitors, 185
 His able generalship, 186
 His stupendous selling price, 189
 His magnificent pension, 203
 His democratic habits, 205
 Personal characteristics, 206
 His amazing philanthropy, 208
 Gifts to Pittsburg, 277
 His dream of the future, 339
- Carnegie, Mrs. T. M., 196
 Carnegie, Thomas, 79, 80
 Carnegie Veterans, 202
 Carr, W. A., 178
 Cass, A. C., 311
 Chambers, Colonel James, 41
 Cheap steel, 4
 Chisholm, Henry, 16, 352
 Chisholm, William, 20
 Civil War, 3, 47
 Clarke, E. A. S., 329
 Clemson, Daniel M., 146, 151
 Clergue, F. H., 187
 Cleveland, 351
 Cleveland, Grover, 138
 Clifford, Alfred, 234
 Coke, Supremacy of Frick, 107
 A model plant, 246
 Colburn, Zerah, 13
 Coleman, Captain R., 41
 Coleman, William, 82, 97
 Conneaut, 350
 Connellsville, 108, 109
 Converter, 15, 83
 Corey, W. E., 158, 159, 196, 200
 Cowan, Christopher, 290
 Cromwell, W. N., 213
 Curry, H. M., 90, 145, 153
- D
- Danforth, A. H., 311
 Danger of steel industries, 122,
 361
 De Bardeleben, H. F., 299
 Dexter, Thomas, 37
 Dill, J. B., 176
 Dinkey, A. C., 148, 251
 Disston, Henry, 163, 324
 Dolan, Thomas, 213
 Drake, John A., 213, 234
 Duluth, 56, 244, 354
 Duquesne plant, 113
 Durfee, Zohetti S., 17
- E
- Edenborn, William, 234
 Ellwood, I. L., 234
 England—
 First to sell steel rails, 24
 Loses supremacy in steel, 27
 Buys American machinery, 46
 Erskine, Robert, 42
 Everett, Philo M., 49, 50, 51

F

- Faesch, Squire, 39, 286
 Falling Creek, 35, 36
 Ferguson, E. M., 107
 Field, Marshall, 191, 213
 Fleming, J. C., 150
 Flower, R. P., 183, 191
 Foreign trade, 347
 Forsyth, Robert, 20, 329
 Frazer, Colonel P., 41
 Free Trade, 138
 French, Aaron, 267
 French, G. W., 301
 Frick, Henry Clay—
 As a boy worker, 104
 Enters coke business, 105
 Dominates coke business, 107
 His improvements, 108
 Becomes partner of Carnegie, 109
 Wins fight with Amalgamated,
 137
 His share of profits, 168
 Quarrel with Carnegie, 175
 Personal characteristics, 177,
 180
 A central figure in American
 finance, 178
 His family, 179
 Tries to buy out Carnegie,
 182
 Becomes real estate king, 202
 His view of United States Steel
 Corporation, 257
 Fricke, Dr., 128
 Fritz, George, 20, 359
 Fritz, John, 2, 16, 133, 255, 330,
 360
 Frontenac, Comte de, 38
 Fry, John E., 20
 Future of Steel, 338

G

- Garland, M. M., 137
 Garrard, William, 353
 Gary, 247
 Gary, Elbert H., 191, 215, 216, 236,
 255
 Gates, J. W.—
 His strenuous career, 232
 Exploits with barbed wire, 233
 His picture gallery, 234
 Investments in Alabama, 303
 Investments in Colorado, 313
 Gayley, James, 29, 30, 33, 196, 200,
 244, 337, 356
 Griswold, John A., 17, 18, 25
 Golden flood of steel profits begins,
 90
 Gould, George J., 313, 319
 Graffenreid, Baron de, 38
 Grant, Ulysses S., 290
 Greene, Maj.-Gen. Nathanael, 41
 Grubb, Colonel C., 41
 Grubb, Colonel P., 41

H

- Hamby, Captain J. D., 306
 Hanna, L. C., 303
 Hanna, Mark, 331
 Harriman, E. H., 313
 Hasenclever, Baron, 38, 39, 40, 220,
 286
 Hawley, E., 313
 Hearne, F. J., 295, 309, 315
 Hewitt, Abram S., 16, 214, 297
 Hill, J. J., 332
 Hillman, Daniel, 300
 Hillman, T. T., 300
 Hills, R. C., 311
 Hoffman, J. O., 150
 Holley, Alexander L., 16, 19

Homestead plant, 110, 141

Strike, 132, 136

Hopkins, Stephen, 41

Howe, Henry M., 48

Howe, Thomas M., 267

Humphreys, Miles, 137, 364

Huns, 107, 109, 253

Hunt, A. R., 151, 275

Hunt, Robert W., 2, 12

Hussey, C. G., 16, 267

Huston, Charles, 163

I

International Harvester Co., 326

Injunction against colonial iron
makers, 44

Iron, what it is, 48

Irvin, General James, 41

Iselin, A., Jr., 329

J

Jarrett, John, 137

Jenks, John, 37

Jenks, Joseph, 37, 286

Jerome, J. L., 311

Johnson, Gen. Thomas, 41

Johnson, Tom L., 166, 331

Jones, B. F., 16, 322

Jones, B. F., Jr., 320

Jones, D. N., 20, 23

Jones, William R., 16

His boyhood, 21

Education, 21

At Johnston, 23

Becomes a Carnegie manager, 24

Breaks world's records, 25

His achievements, 29, 30

A leader of men, 31

His tragic death, 33

K

Kebler, J. A., 311

Keith, Sir William, 38

Kelley, Mrs. N. H., 332

Kelly, William,

Early history, 5

His discoveries, 6

Makes first "Bessemer" steel,

7

His difficulties, 8

First tilting converters, 9

His later career, 10

His rewards, 13

His fight for patents, 12

Kennedy, Julian, 112, 141, 260, 274

Kessler, G. A., 303

King, Willis L., 272, 336

Kloman, Andrew, 73, 79, 97, 98

Krupp Works, 279

L

Labour—

How William Jones engaged his
men, 31

In coke regions, 107

In early iron mills, 283

Negro, in Alabama, 306

Formula of Captain Jones, 133

And the United States Steel

Corporation, 249, 252

Lambert, John, 234

Lambing, A. A., 282

Lauder, George, 147, 167

Laughlin, James, 322

Leader, Richard, 37, 284

Leeds, W. B., 235

Leibert, Owen, 20

Leith, A. J. F., 191

Lewis, General William, 41

Leishman, J. G. A., 149, 196
 Lincoln, Abraham, 41
 Lindsay, Homer J., 151, 275
 Louis XV., King, 38, 39
 Lovejoy, F. T. F., 148, 180, 196,
 275
 Lucy furnaces, 88, 89
 Lukens, Mrs. Rebecca, 44
 Lynn, 36, 37

M

McCandless, David, 82, 100
 McClurg, Joseph, 289
 McCausland, W. C., 151, 275
 McMurtry, G. G., 252
 Machinery—

In steel business, 131, 251
 Struggle with labour, 135
 Of Homestead, 142
 Steel rail, 143
 Future of, 358

Marmie, Peter, 289
 Massacre of iron-makers, 36
 Mathiot, Colonel, 41
 Meeson, Colonel I., 41
 Mellons, A. W., 178
 Merritt, Alfred, 56
 Merritt, Leonidas, 56, 57
 Merritt, Lewis H., 55
 Mesaba range, 55, 56, 57, 58, 59, 60
 Meyer, Cord, 301
 Milwaukee, 354
 Miller, Thomas N., 73, 74, 95, 96,
 139
 Milliken, Foster, 331
 Mills, D. O., 191, 213, 329
 Moore, S. E., 153
 Moore, W. H., 181, 203, 215
 Morgan, Gen. D., 41

Morgan, J. P.—
 Refuses to enter steel business,
 182
 His personality, 210
 How he built the United States
 Steel Corporation, 211
 His fee, 214
 His herculean task, 218
 Statistics, 218
 His supreme aim, 243
 His prophecy for the future,
 367
 Morrell, Daniel J., 16, 17, 19, 324
 Morrison, Thomas, 115, 146, 148,
 195
 Morton, Paul, 311
 Mushet, Robert F., 11, 13

N

Nelson, C. N., 66

O

O'Day, Daniel, 213
 O'Donnell, Hugh, 140
 Oglebay, E. W., 295, 303
 Oliver, Henry W—
 His picturesque career, 118
 Becomes partner of Carnegie,
 117
 His ride to Mesaba, 119
 His total profits, 194
 His Pittsburg residence, 275
 Ore, Lake Superior—
 Cheaper than sawdust, 47
 First discovery, 49, 50
 Immense deposits, 57, 58
 Worth a thousand million, 62
 In Minnesota, 334
 Ore-fleets, 60, 61
 Ore-ports, 62

Ore-machinery, 63
 Ore-railroads, 63, 64, 121
 Ore fortunes, 65, 66, 67
 Ore mines in early days, 287
 Osgood, J. C., 311, 312, 317

P

Palmer, General W. J., 311
 Park, James, 12
 Park, William, 114, 326
 Peacock, A. R., 151, 195, 275
 Perkins, G. W., 192, 214, 228, 237
 250, 257
 Phipps, Henry—
 Enters iron business, 73, 173
 Personal characteristics, 174
 Ability as a financier, 79
 His philanthropies, 202
 Phipps, L. C., 318
 Philadelphia, 323
 Pitcairn, Robert, 71
 Pittsburg—see section 2
 Porter, H. H., 54, 191, 213
 Porter, William, 289
 Potter, John A., 150
 Potter, Orrin W., 20
 Price, Charles S., 165, 362
 Profits—
 First profits of Carnegie Co., 94
 Of workman partners, 193
 Pueblo—
 Beginnings of, 294
 Natural resources, 309
 Early history, 311
 Developments of iron business,
 315
 Workshop of the West, 317
 Future of, 319
 Putman, General R., 41

R

Railroads adopt steel rails, 24
 Raleigh, Sir Walter, 35
 Reading, 325
 Ream, N. B., 191
 Reid, D. G., 235
 Rebates, 116
 Revere, Paul, 42
 Revolution, American—
 Begun by iron makers, 43
 Iron makers in, 41, 42
 Reynolds, Major S. M., 42
 Rhodes, D., 331
 Rhodes, Joshua, 267
 Richards, E. Windsor, 27
 Richards, Captain William, 42
 Risks in steel trade, 168
 Rockefeller, John D.—
 Ore deals, 57
 Tries to buy Carnegie Co., 183
 Rockefeller, John D., Jr., 313
 Rogers, H. H., 178, 191
 Rogers, W. A., 348
 Rookery, first steel frame building,
 113
 Ross, George, 41

S

Sage, Russell, 243
 St. Clair, General A., 42
 Schiller, W. B., 217
 Schley, G. B., 303
 Schoonmaker, S. L., 107, 176, 196,
 301
 Schwab, Charles M.—
 Makes continuous steel mill,
 116
 Superintendent of Homestead,
 141
 Meteoric career, 155

Schwab, Charles M.—*Continued*
 First position, 156
 Ability as a steel manager, 157
 Personal characteristics, 158
 New York mansion, 159
 His share of profits, 168
 The world's champion salesman,
 190
 His Bethel plant, 330
 His prophecy for the future, 366

Scott, James, 89, 197
 Scott, John, 101
 Scott, Thomas A., 71, 99, 100
 Scranton, W., 329
 Shinn, William P., 101
 Sheldon, S. B., 329
 Skyscrapers of the future, 343
 Singer, W. H., 275
 Slavs, 107, 109, 253
 Sloat, H. R., 301
 Sloss, Colonel J. W., 305
 Smith, J. H., 301
 Speed, 93, 166
 Spooner, Senator, 191
 Stackhouse, P., 324
 Steele, Charles, 213
 Stiegel, Baron, 38, 39, 40, 284
 Sternbergh, J. H., 326
 Stetson, F. L., 192
 Stevenson, John, 87
 Stewart, David A., 101
 Stirling, Lord, 38
 Sunday work, 32
 Stone, George C., 52, 53, 54
 Stuntz, George R., 52
 Swank, James M., 13, 18
 Swensson, Emil, 151

T

Tariff, 188, 235, 286, 292, 331
 Taylor, Moses, 329

Texas, 355
 Thomas, David, 21, 133, 285
 Thayer, N., 191, 213
 Topping, John A., 295, 304
 Torley, J. J., 267
 Tower, Charlemagne, 53, 54
 Tracy, B. F., 301
 Transportation, 287
 Twombly, H. McK., 329

U

United States Steel Corporation—
 Magnitude, 1, 216, 240
 Origin of consolidation, 191
 The meaning of its millions, 221
 Its vast assets, 223
 Advantages of consolidation,
 228, 249
 Over capitalisation, 229
 Actual value, 231
 A product of the human race,
 238
 First annual report, 239
 Depreciation of stock, 241
 Its key note, 244
 Its model coal mine, 245
 Six years of progress, 255, 258
 Relation to independent com-
 panies, 335

United Sons of Vulcan, 134

V

Van Cortland, R. B., 329
 Vanderbilt, Cornelius, 329
 Vandervort, John W., 102
 Vaughn, Colonel J., 42

W

Waples, Colonel William D., 42
 Wages—
 At Homestead, 140

Wages—*Continued*

- At Pittsburgh, 264
- In early iron mills, 283
- Wall Street, 225, 227, 242, 254
- Ward, Captain Eber B., 3, 16, 352
 - First of the steel kings, 17
- Washington, George, 41, 42, 278, 286
- Wehrum, Henry, 328
- Weihe, William, 137
- West Point chain, 42
- Wharton, J., 325
- White, Peter, 49, 51
- Whitney, W. C., 330
- Widener, P. A. B., 213, 323

- Winslow, John F., 17
- Winthrop, Governor, 36
- Wolcott, Senator, 311
- Wonders of steel, 340
- Woodward, James T., 301
- Wright, Carroll D., 167

Y

- Youth of American steel business, 2, 34
- Yerkes, Charles T., 342

Z

- Zug, Christopher, 267



THE END







RETURN CIRCULATION DEPARTMENT
TO → 202 Main Library

LOAN PERIOD 1 HOME USE	2	3
4	5	6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS
 Renewals and Recharges may be made 4 days prior to the due date.
 Books may be Renewed by calling 642-3405.

DUE AS STAMPED BELOW

AUTO DISC NOV 20 1991		
MAY 22 1993		
AUTO DISC CIRC JUL 23 '93		
RESERVED 27 1997		
DEC 04 1996		
CIRCULATION DEPT.		

FORM NO. DD6 UNIVERSITY OF CALIFORNIA, BERKELEY
 BERKELEY, CA 94720

LD 21A-40m-11,'63 (E1602s10)476B	NOV 18 1992	General Library University of California Berkeley
-------------------------------------	--------------------	---

VC 25845

U.C. BERKELEY LIBRARIES



C038536739

165080

UNIVERSITY OF CALIFORNIA LIBRARY

