THE RAILROAD BUILDERS

A CHRONICLE OF THE WELDING OF THE STATES

BY JOHN MOODY

NEW HAVEN: YALE UNIVERSITY PRESS
TORONTO: GLASGOW, BROOK & CO.
LONDON: HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS

THE RAILROAD BUILDERS

CHAPTER I

A CENTURY OF RAILROAD BUILDING

THE United States as we know it today is largely the result of mechanical inventions, and in particular of agricultural machinery and the railroad. One transformed millions of acres of uncultivated land into fertile farms, while the other furnished the transportation which carried the crops to distant markets. Before these inventions appeared, it is true, Americans had crossed the Alleghanies, reached the Mississippi Valley, and had even penetrated to the Pacific coast; thus in a thousand years or so the United States might conceivably have become a far-reaching, straggling, loosely jointed Roman Empire, depending entirely upon its oceans, internal watercourses, and imperial highways for such economic and political integrity as it might

achieve. But the great miracle of the nineteenth century — the building of a new nation, reaching more than three thousand miles from sea to sea, giving sustenance to more than one hundred million free people, and diffusing among them the necessities and comforts of civilization to a greater extent than the world had ever known before — is explained by the development of harvesting machinery and of the railroad.

The railroad is sprung from the application of two fundamental ideas — one the use of a mechanical means of developing speed, the other the use of a smooth running surface to diminish friction. Though these two principles are today combined, they were originally absolutely distinct. In fact there were railroads long before there were steam engines or locomotives. If we seek the real predecessor of the modern railroad track, we must go back three hundred years to the wooden rails on which were drawn the little cars used in English collieries to carry the coal from the mines to tidewater. The natural history of this invention is clear enough. The driving of large coal wagons along the public highway made deep ruts in the road, and some ingenious person began repairing the damage by laying wooden planks in the furrows.

The coal wagons drove over this crude roadbed so successfully that certain proprietors started constructing special planked roadways from the mines to the river mouth. Logs, forming what we now call "ties," were placed crosswise at intervals of three or four feet, and upon these supports thin 'rails," likewise of wood, were laid lengthwise. So effectually did this arrangement reduce friction that a single horse could now draw a great wagon filled with coal — an operation which two or three teams, lunging over muddy roads, formerly had great difficulty in performing. In order to lengthen the life of the road, a thin sheeting of iron was presently laid upon the wooden rail. The next improvement was an attempt to increase the durability of the wagons by making the wheels of iron. It was not, however, until 1767, when the first rails were cast entirely of iron with a flange at one side to keep the wheel steadily in place, that the modern roadbed in all its fundamental principles made its appearance. This, be it observed, was only two years after Watt had patented his first steam engine, and it was nearly fifty years before Stephenson built his first locomotive. The railroad originally was as completely dissociated from steam propulsion as was the ship. Just as vessels had

existed for ages before the introduction of mechanical power, so the railroad had been a familiar sight in the mining districts of England for at least two centuries before the invention of Watt really gave it wings and turned it to wider uses. In this respect the progress of the railroad resembles that of the automobile, which had existed in crude form long before the invention of the gasoline engine made it practically useful.

In the United States three new methods of transportation made their appearance at almost the same time — the steamboat, the canal boat, and the rail car. Of all three, the last was the slowest in attaining popularity. As early as 1812 John Stevens, of Hoboken, aroused much interest and more amused hostility by advocating the building of a railroad, instead of a canal, across New York State from the Hudson River to Lake Erie, and for several years this indefatigable spirit journeyed from town to town and from State to State, in a fruitless effort to push his favorite scheme. The great success of the Erie Canal was finally hailed as a conclusive argument against all the ridiculous claims made in favor of the railroad and precipitated a canal mania which spread all over the country.

Yet the enthusiasts for railroads could not be discouraged, and presently the whole population divided into two camps, the friends of the canal, and the friends of the iron highway. Newspapers acrimoniously championed either side; the question was a favorite topic with debating societies; public meetings and conventions were held to uphold one method of transportation and to decry the other. The canal, it was urged, was not an experiment; it had been tested and not found wanting; already the great achievement of De Witt Clinton in completing the Erie Canal had made New York City the metropolis of the western world. The railroad, it was asserted, was just as emphatically an experiment; no one could tell whether it could ever succeed; why, therefore, pour money and effort into this new form of transportation when the other was a demonstrated success?

It was a simple matter to find fault with the railroad; it has always been its fate to arouse the opposition of the farmers. This hostility appeared early and was based largely upon grounds that have a familiar sound even today. The railroad, they said, was a natural monopoly; no private citizen could hope ever to own one; it was thus a kind of monster which, if encouraged, would override

all popular rights. From this economic criticism the enemies of the railroad passed to details of construction: the rails would be washed out by rains; they could be destroyed by mischievous people; they would snap under the cold of winter or be buried under the snow for a considerable period, thus stopping all communication. The champions of artificial waterways would point in contrast to the beautiful packet boats on the Erie Canal, with their fine sleeping rooms, their restaurants, their spacious decks on which the fine ladies and gentlemen congregated every warm summer day, and would insist that such kind of travel was far more comfortable than it could ever be on railroads. To all these pleas the advocates of the railroad had one unassailable argument — its infinitely greater speed. After all, it took a towboat three or four days to go from Albany to Buffalo, and the time was not far distant, they argued, when a railroad would make the same trip in less than a day. Indeed, our forefathers made one curious mistake: they predicted a speed for the railroad — a hundred miles an hour — which it has never attained consistently with safety.

If the American of today could transport himself to one of the first railroad lines built in the United

States it is not unlikely that he would side with the canal enthusiast in his argument. The rough pictures which accompany most accounts of early railroad days, showing a train of omnibus-like carriages pulled by a locomotive with upright boiler, really represent a somewhat advanced stage of development. Though Stephenson had demonstrated the practicability of the locomotive in 1814 and although the American, John Stevens, had constructed one in 1826 which had demonstrated its ability to take a curve, local prejudice against this innovation continued strong. The farmers asserted that the sparks set fire to their hayricks and barns and that the noise frightened their hens so that they would not lay and their cows so that they could not give milk. On the earliest railroads, therefore, almost any other method of propulsion was preferred. Horses and dogs were used, winches turned by men were occasionally installed, and in some cases cars were even fitted with sails. Of all these methods, the horse was the most popular: he sent out no sparks, he carried his own fuel, he made little noise, and he would not explode. His only failing was that he would leave the track; and to remedy this defect the early railroad builders hit upon a happy device. Sometimes they would fix a

treadmill inside the car; two horses would patiently propel the caravan, the seats for passengers being arranged on either side. So unformed was the prevalent conception of the ultimate function of the railroad, and so pronounced was the fear of monopoly that, on certain lines, the roadbed was laid as a state enterprise and the users furnished their own cars, just as the individual owners of towboats did on the canals. The drivers, however, were an exceedingly rough lot; no schedules were observed and as the first lines had only single tracks and infrequent turnouts, when the opposing sides would meet each other coming and going, precedence was usually awarded to the side which had the stronger arm. The roadbed showed little improvement over the mine tramways of the eighteenth century, and the rails were only long wooden stringers with strap iron nailed on top. So undeveloped were the resources of the country that the builders of the Baltimore and Ohio Railroad in 1828 petitioned Congress to remit the duty on the iron which it was compelled to import from England. The trains consisted of a string of little cars, with the baggage piled on the roof, and when they reached a hill they sometimes had to be pulled up the inclined plane by a rope. Yet the traveling in these earliest days

was probably more comfortable than in those which immediately followed the general adoption of locomotives. When, five or ten years later, the advantages of mechanical as opposed to animal traction caused engines to be introduced extensively, the passengers behind them rode through constant smoke and hot cinders that made railway travel an incessant torture.

Yet the railroad speedily demonstrated its practical value; many of the first lines were extremely profitable, and the hostility with which they had been first received soon changed to an enthusiasm which was just as unreasoning. The speculative craze which invariably follows a new discovery swept over the country in the thirties and the forties and manifested itself most unfortunately in the new Western States — Ohio, Indiana, Illinois, and Michigan. Here bonfires and public meetings whipped up the zeal; people believed that railroads would not only immediately open the wilderness and pay the interest on the bonds issued to construct them, but that they would become a source of revenue to sadly depleted state treasuries. Much has been heard of government ownership in recent years; yet it is nothing particularly new, for many of the early railroads in these new Western States

were built as government enterprises, with results which were frequently disastrous. This mania, with the land speculation accompanying it, was largely responsible for the panic of 1837 and led to that repudiation of debts in certain States which for so many years gave American investments an evil reputation abroad.

In the more settled parts of the country, however, railroad building had comparatively a more solid foundation. Yet the railroad map of the forties indicates that railroad building in this early period was incoherent and haphazard. Practically everywhere the railroad was an individual enterprise; the builders had no further conception of it than as a line connecting two given points usually a short distance apart. The roads of those days began anywhere and ended almost anywhere. A few miles of iron rail connected Albany and Schenectady. There was a road from Hartford to New Haven, but there was none from New Haven to New York. A line connected Philadelphia with Columbia; Baltimore had a road to Washington; Charleston, South Carolina, had a similar contact with Hamburg in the same State. By 1842, New York State, from Albany to Buffalo, possessed several disconnected stretches of railroad. It was

not until 1836, when work was begun on the Erie Railroad, that a plan was adopted for a single line reaching several hundred miles from an obvious point, such as New York, to an obvious destination, such as Lake Erie. Even then a few far-sighted men could foresee the day when the railroad train would cross the plains and the Rockies and link the Atlantic and the Pacific. Yet, in 1850 nearly all the railroads in the United States lay east of the Mississippi River, and all of them, even when they were physically mere extensions of one another, were separately owned and separately managed.

Successful as many of the railroads were, they had hardly yet established themselves as the one preëminent means of transportation. The canal had lost in the struggle for supremacy, but certain of these constructed waterways, particularly the Erie, were flourishing with little diminished vigor. The river steamboat had enjoyed a development in the first few decades of the nineteenth century almost as great as that of the railroad itself. The Mississippi River was the great natural highway for the products and the passenger traffic of the South Central States; it had made New Orleans one of the largest and most flourishing cities in the

country; and certainly the rich cotton planter of the fifties would have smiled at any suggestion that the "floating palaces" which plied this mighty stream would ever surrender their preëminence to the rusty and struggling railroads which wound along its banks.

This period, which may be taken as the first in American railroad development, ended about the middle of the century. It was an age of great progress but not of absolutely assured success. A few lines earned handsome profits, but in the main the railroad business was not favorably regarded and railroad investments everywhere were held in suspicion. The condition that prevailed in many railroads is illustrated by the fact that the directors of the Michigan and Southern, when they held their annual meeting in 1853, had to borrow chairs from an adjoining office as the sheriff had walked away with their own for debt. Even a railroad with such a territory as the Hudson River Valley, and extending from New York to Albany existed in a state of chronic dilapidation; and the New York and Harlem, which had an entrance into New York City as an asset of incalculable value, was looked upon merely as a vehicle for Wall Street speculation.

Meanwhile the increasing traffic in farm products, mules, and cattle from the Northwest to the plantations of the South created a demand for more ample transportation facilities. In the decade before the Civil War various north and south lines of railway were projected and some of these were assisted by grants of land from the Federal Government. The first of these, the Illinois Central, received a huge land-grant in 1850 and ultimately reached the Gulf at Mobile by connecting with the Mobile and Ohio Railroad which had also been assisted by Federal grants. But the panic of 1857, followed by the Civil War, halted all railroad enterprises. In the year 1856 some 3600 miles of railroad had been constructed; in 1865 only 700 were laid down. The Southern railroads were prostrated by the war and north and south lines lost all but local traffic.

After the war a brisk recovery began and brought to the fore the first of the great railroad magnates and the shrewdest business genius of the day, Cornelius Vanderbilt. Though he had spent his early life and had laid the basis of his fortune in steamboats, he was the first man to appreciate the fact that these two methods of transportation were about to change places — that water transportation

was to decline and that rail transportation was to gain the ascendancy. It was about 1865 that Vanderbilt acted on this farsighted conviction, promptly sold out his steamboats for what they would bring, and began buying railroads despite the fact that his friends warned him that, in his old age, he was wrecking the fruits of a hard and thrifty life. But Vanderbilt perceived what most American business men of the time failed to see, that a change had come over the railroad situation as a result of the Civil War.

The time extending from 1860 to about 1875 marks the second stage in the railroad activity of the United States. The characteristic of this period is the development of the great trunk lines and the construction of a transcontinental route to the Pacific. The Civil War ended the supremacy of the Mississippi River as the great transportation route of the West. The fact that this river ran through hostile territory — Vicksburg did not fall until July 4, 1863 — forced the farmers of the West to find another outlet for their products. By this time the country from Chicago and St. Louis eastward to the Atlantic ports was fairly completely connected by railroads. The necessities of war led to great improvements in construction and equip-

ment. Business which had hitherto gone South now began to go East; New Orleans ceased to be the great industrial entrepôt of this region and gave place to St. Louis and Chicago.

Yet, though this great change in traffic routes took place in the course of the war, the actual consolidations of the various small railroads into great trunk lines did not begin until after peace had been assured. The establishment of five great railroads extending continuously from the Atlantic seaboard to Chicago and the West was perhaps the most remarkable economic development of the ten or fifteen years succeeding the war. By 1875 these five great trunk lines, the New York Central, the Pennsylvania, the Erie, the Baltimore and Ohio, and the Grand Trunk, had connected their scattered units and established complete through systems.

All the vexations that had necessarily accompanied railroad traffic in the days when each one of these systems had been a series of disconnected roads had disappeared. The grain and meat products of the West, accumulating for the most part at Chicago and St. Louis, now came rapidly and uninterruptedly to the Atlantic seaboard, and railroad passengers, no longer submitted to the inconveniences of the Civil War period, now began

to experience for the first time the pleasures of railroad travel. Together with the articulation of the routes, important mechanical changes and reconstruction programmes completely transformed the American railroad system. The former haphazard character of each road is evidenced by the fact that in Civil War days there were eight different gages, with the result that it was almost impossible for the rolling stock of one line to use another. A few years after the Civil War, however, the present standard gage of four feet eight and one-half inches had become uniform all over the United States. The malodorous "eating cribs" of the fifties and the sixties — little station restaurants located at selected spots along the line — now began to disappear, and the modern dining car made its appearance. The old rough and ready sleeping cars began to give place to the modern Pullman. One of the greatest drawbacks to ante-bellum travel had been the absence of bridges across great rivers, such as the Hudson and the Susquehanna. At Albany, for example, the passengers in the summer time were ferried across, and in winter they were driven in sleighs or were sometimes obliged to walk across the ice. It was not until after the Civil War that a great iron bridge, two thousand feet long, was

constructed across the Hudson at this point. On the trains the little flickering oil lamps now gave place to gas, and the wood burning stoves — frequently in those primitive days smeared with tobacco juice — in a few years were displaced by the new method of heating by steam.

The accidents which had been almost the prevailing rule in the fifties and sixties were greatly reduced by the Westinghouse air-brake, invented in 1868, and the block signaling system, introduced somewhat later. In the ten years succeeding the Civil War, the physical appearance of the railroads entirely changed; new and larger locomotives were made, the freight cars, which during the period of the Civil War had a capacity of about eight tons, were now built to carry fifteen or twenty. The former little flimsy iron rails were taken up and were relaid with steel. In the early seventies when Cornelius Vanderbilt substituted steel for iron on the New York Central, he had to import the new material from England. In the Civil War period, practically all American railroads were single track lines — and this alone prevented any extensive traffic. Vanderbilt laid two tracks along the Hudson River from New York to Albany, and four from Albany to Buffalo, two exclusively for freight

and two for passengers. By 1880 the American railroad, in all its essential details, had definitely arrived.

But in this same period even more sensational developments had taken place. Soon after 1865 the imagination of the American railroad builder began to reach far beyond the old horizon. Up to that time the Mississippi River had marked the Western railroad terminus. Now and then a road straggled beyond this barrier for a few miles into eastern Iowa and Missouri; but in the main the enormous territory reaching from the Mississippi to the Pacific Ocean was crossed only by the old trails. The one thing which perhaps did most to place the transcontinental road on a practical basis was the annexation of California in 1848; and the wild rush that took place on the discovery of the gold fields one year later had led Americans to realize that on the Pacific coast they had an empire which was great and incalculably rich but almost inaccessible. The loyalty of California to the Northern cause in the war naturally stimulated a desire for closer contact. In the ten years preceding 1860 the importance of a transcontinental line had constantly been brought to the attention of Congress and the project had caused much jealousy between

the North and the South, for each region desired to control its Eastern terminus. This impediment no longer stood in the way; early in his term, therefore, President Lincoln signed the bill authorizing the construction of the Union Pacific — a name doubly significant, as marking the union of the East and the West and also recognizing the sentiment of loyalty or union that this great enterprise was intended to promote. The building of this railroad, as well as that of the others which ultimately made the Pacific and the Atlantic coast near neighbors — the Santa Fé, the Southern Pacific, the Northern Pacific, and the Great Northern — is described in the pages that follow. Here it is sufficient to emphasize the fact that they achieved the concluding triumph in what is certainly the most extensive system of railroads in the world. "These transcontinental roads really completed the work of Columbus. He sailed to discover the western route to Cathay and found that his path was blocked by a mighty continent. But the first train that crossed the plains and ascended the Rockies and reached the Golden Gate assured thenceforth a rapid and uninterrupted transit westward from Europe to Asia."

CHAPTER II

THE COMMODORE AND THE NEW YORK CENTRAL

A STORY was told many years ago of Commodore Vanderbilt which, while perhaps not strictly true, was pointed enough to warrant its constant repetition for more than two generations. Back in the sixties, when this grizzled railroad chieftain was the chief factor in the rapidly growing New York Central Railroad system, whose backbone then consisted of a continuous one-track line connecting Albany with the Great Lakes, the president of a small cross-country road approached him one day and requested an exchange of annual passes.

"Why, my dear sir," exclaimed the Commodore, "my railroad is more than three hundred miles long, while yours is only seventeen miles."

"That may all be so," replied the other, "but my railroad is just as wide as yours."

This statement was true. Practically no railroad, even as late as the sixties, was wider than

another. They were all single-tracked lines. Even the New York Central system in 1866 was practically a single-track road; and the Commodore could not claim to any particular superiority over his neighbors and rivals in this particular. Instead of sneering at his "seventeen-mile" colleague, Vanderbilt might have remembered that his own fine system had grown up in less than two generations from a modest narrow-gage track running from "nothing to nowhere." The Vanderbilt lines, which today with their controlled and affiliated systems comprise more than 13,000 miles of railroad — a large portion of which is double-tracked, no mean amount being laid with third and fourth tracks — is the outgrowth of a little seventeen-mile line, first chartered in 1826, and finished for traffic in 1831. This little railroad was known as the Mohawk and Hudson, and it extended from Albany to Schenectady. It was the second continuous section of railroad line operated by steam in the United States, and on it the third locomotive built in America, the *De Witt Clinton*, made a satisfactory trial trip in August, 1831.

The success of this experiment created a sensation far and wide and led to rapid railroad building in other parts of the country in the years

immediately following. The experiences of a participant in this trial trip are described about forty years later in a letter written by Judge J. L. Gillis of Philadelphia:

In the early part of the month of August of that year [1831], I left Philadelphia for Canandaigua, New York, traveling by stages and steamboats to Albany and stopping at the latter place. I learned that a locomotive had arrived there and that it would make its first trip over the road to Schenectady the next day. I concluded to lie over and gratify my curiosity with a first ride after a locomotive.

That locomotive, the train of cars, together with the incidents of the day, made a very vivid impression on my mind. I can now look back from one of Pullman's Palace cars, over a period of forty years, and see that train together with all the improvements that have been made in railroad travel since that time. . . . I am not machinist enough to give a description of the locomotive that drew us over the road that day, but I recollect distinctly the general make-up of the train. The train was composed of coach bodies, mostly from Thorpe and Sprague's stage coaches, placed upon trucks. The trucks were coupled together with chains, leaving from two to three feet slack, and when the locomotive started it took up the slack by jerks, with sufficient force to jerk the passengers who sat on seats across the tops of the coaches, out from under their hats, and in stopping, came together with such force as to send them flying from the seats.

They used dry pitch for fuel, and there being no smoke or spark catcher to the chimney or smoke-stack, a volume of black smoke, strongly impregnated with sparks, coals, and cinders, came pouring back the whole length of the train. Each of the tossed passengers who had an umbrella raised it as a protection against the smoke and fire. They were found to be but a momentary protection, for I think in the first mile the last umbrella went overboard, all having their covers burnt off from the frames, when a general *mêlée* took place among the deck passengers, each whipping his neighbor to put out the fire. They presented a very motley appearance on arriving at the first station. Then rails were secured and lashed between the trucks, taking the slack out of the coupling chains, thereby affording us a more steady run to the top of the inclined plane at Schenectady.

The incidents off the train were quite as striking as those on the train. A general notice of the contemplated trip had excited not only the curiosity of those living along the line of the road, but those living remote from it, causing a large collection of people at all the intersecting roads along the route. Everybody, together with his wife and all his children, came from a distance with all kinds of conveyances, being as ignorant of what was coming as their horses, and drove up to the road as near as they could get, only looking for the best position to get a view of the train. As it approached the horses took fright and wheeled, upsetting buggies, carriages, and wagons, and leaving for parts unknown to the passengers if not to their owners, and it is not now positively known if some of them have stopped yet.

Such is a hasty sketch of my recollection of my first ride after a locomotive.

The Mohawk and Hudson Railroad was originally constructed with inclined planes worked by stationary engines near each terminus, the inclinations being one foot in eighteen. The rail used was a flat bar laid upon longitudinal sills. This type of rail came into general use at this period and continued in use in parts of the country even as late as the Civil War.

The roads that now make up the New York Central were built piecemeal from 1831 to 1853; and the organization of this company in the latter year, to consolidate eleven independent roads extending from Albany to Buffalo, finally put an end to the long debate between canals and railroads. The founding of this company definitely meant that transportation in the United States henceforth would follow the steel route and not the water ditch and the towpath. Canals might indeed linger for a time as feeders, even, as in the case of the Erie and a few others, as more or less important transportation routes, but every one now realized that the railroad was to be the great agency which would give plausibility to the industrial organization of the United States and develop its great territory.

Besides the pioneer Mohawk and Hudson, this consolidation included the Utica and Schenectady, which had been opened in 1836 and which had operated profitably for many years, always paying large dividends. The Tonawanda Railroad, opened in 1837, and the Buffalo and Niagara Falls, also finished in the same year, were operated with profit until they were absorbed by the new system. In 1838 the Auburn and Syracuse and the Hudson and Berkshire Railroads were opened. The former after being merged in 1850 with the Rochester and Syracuse Railway, became a part of the consolidation. The Syracuse and Attica Railroad, opened in 1839, the Attica and Buffalo, opened in 1842, the Schenectady and Troy, opened in the same year, and several other small lines, some of which had undergone various changes in name and ownership, were all merged into the New York Central Railroad. This great property now comprised five hundred and sixty miles of railroad, the main stem extending from Albany to Buffalo. Though it had as yet no connection with the Hudson River Railroad, the New York Central Railroad at this period was the most substantial and important of American railroad systems. It developed a large and healthy through traffic to the Great Lakes and

was practically free from railroad competition. The Erie Railway, which for many years had been struggling under great difficulties to reach the Great Lakes and had gone through nearly a generation of financial vicissitudes, was just getting its through line actively under way. The Pennsylvania Railroad was just pushing through to the waters of the Ohio and was not likely for many years to compete with the New York Central for the lake traffic. The Baltimore and Ohio, while remotely a competitor, was, like the Pennsylvania, looking more for the traffic of the Ohio Valley than for that of the Lakes.

The period of six years following the consolidation of 1853 was one of great prosperity for the New York Central system, and, notwithstanding the setbacks to business caused by the panic of 1857, large dividends were continuously paid on the capital stock. In the year 1859 — before the Vanderbilt régime opened — the management embraced what to modern men of affairs are famous names. Erastus Corning was president, Dean Richmond was vice-president, and John V. L. Pruyn, Nathaniel Thayer, Isaac Townsend, and Chauncey Vibbard were directors. The headquarters of the company were at Albany, and the stock was owned mainly by residents of that city.

Meanwhile the building of railroads in other parts of the State and under other leadership was going forward rapidly. As far back as 1832 the first mile of the New York and Harlem Railroad was opened for traffic. This single mile remained for some time the only property of the company. It extended through what is now a thriving part of down-town New York. Its original terminus was at Prince Street, but the line was afterwards extended southward to the City Hall and later to the Astor House. It was not until 1837 that the road reached northward to Harlem and not until 1842 that Williamsbridge became the northern terminus. The line was looked upon as a worthless piece of property until 1852, when it was extended north to Chatham, to connect with the Albany and Stockbridge Railroad, and thus give a through line from New York City to Albany.

Another property built in these days and destined to become eventually an important part of the Vanderbilt lines was the Hudson River Railroad. This company was chartered in 1846, but for many years was frowned on as an unsound business venture, because of the belief that it would be in direct competition with the river traffic and therefore could never be made to pay.

Nevertheless the promoters went ahead and by 1850 the road had been opened to Poughkeepsie. The entire line of one hundred and forty-four miles was completed to East Albany in 1851. At the same time the Troy and Greenbush Railroad, extending six miles to Troy, was leased, thus giving the new Hudson River Railroad an entry into the city of Troy. The Hudson River Railroad was entirely independent of the New York Central enterprise and was controlled in those early days by a group of New Yorkers, prominent among whom was Samuel Sloan.

As we enter the Civil War period, we find the three important properties which were afterwards to make up the Vanderbilt system all developing rapidly and logically into the strategical relationship which would make ultimate consolidation inevitable. The completion of the Erie Railway and its gradual development as the only through line across the State from New York to the Great Lakes; the opening, expansion, and general solidification of the Pennsylvania lines and their aggressive policy of reaching out to the lake region on the west and across New Jersey on the east; the extension of the Erie interests into the New England field, and the possibility that the latter might gain

control of the Harlem or the Hudson River Railroad — all these considerations naturally aroused in the New York Central interests a desire to insure the future by obtaining for themselves control of the lines that would connect their own system with New York City and the Eastern seaboard.

During the Civil War, however, no progress was made in this direction. It was not until 1869, four years after the closing of the war, that any radical change took place. But in the years that had intervened, a new and commanding figure in the railroad world had come upon the scene. This man had grown to be the dominating genius, not only in the field of railway expansion, but in the world of finance as well. His name was Cornelius Vanderbilt. Born in 1794 in very humble circumstances, he had received little or no education, and as a youth had eked out a living by ferrying passengers and garden produce from Staten Island to New York. He had painfully saved a few hundred dollars within a year or two after his marriage, and with this capital he began his career in the transportation business. From his first ferrying project he engaged in other undertakings and laid the foundation of his subsequent fortune in steamboat navigation. About 1860, at an age when most

men are beginning to retire from active affairs, the "Commodore" — as he was called on account of his numerous fleet — entered actively into the field of railway development, management, and consolidation. The extraordinary character and genius of the man are well depicted by the events of the years that followed.

Before the opening of the Civil War and until immediately after its end, the New York Central and the Erie systems were controlled by bitterly antagonistic interests. These interests were beginning to foresee the day when extremely aggressive competition would call into play their greatest energies. Vanderbilt, wiser than his generation, foresaw more than this. His vision took in the vast future values of the properties as developed trunk lines, and the greater possibilities of their control and operation as a consolidated whole. He was in a very real sense the forerunner or pioneer of the great consolidation period of a half century later. He was the Harriman and the Hill of his day.

The Erie had its own approach to New York City, but the New York Central was connected with the metropolis only by the river and the two independent roads — the Harlem Railroad

and the Hudson River Railroad. To get the latter two roads under his complete control was Vanderbilt's first object. He would then have unimpeded access to New York and so become independent of the river.

He began his ambitious plans by making himself the master of the Harlem property, and in so doing got his first experience in railroad stock manipulation and at the same time picked up a moderate fortune. It was comparatively easy to buy the control of the Harlem Railroad. The Company had never paid a dividend, and, in 1863, when the Commodore quietly began his work, the stock was selling below thirty dollars a share. Before the close of this year he had manipulated the stock until it had reached ninety-two, and by a corner, in August of that year, he raised it to 179. On this deal Vanderbilt reaped a nice little fortune — but evidently not enough to enable him to carry through the ambitious plans which were in the back of his head, for in 1864 we find him manipulating another corner and this time running the price of the stock up to 285. In this wise the Commodore not only added millions to his already growing fortune but also made himself a power in the financial world. Financiers began to fear him.

and he found it comparatively easy later to buy up the control of the Hudson River Railroad, which he did by paying about 100 for the stock. Then he began speculating again, sent Hudson River up to 180, and incidentally reaped another fortune for himself.

By this time Vanderbilt had achieved a great reputation as a man who created values, earned dividends, and invented wealth as if by magic; other railroad managers now began to lay their properties at his feet and ask him to do with them what he had done with the Harlem and the Hudson River. For under the Commodore's magic touch the Harlem Railroad for the first time in its long history began to pay dividends at a high rate, and in four years the earnings of the Hudson River property had nearly doubled.

One of the first properties to be placed at Vanderbilt's feet was the New York Central, and the control passed into his hands in the winter of 1866–67. He was now in a powerful position and immediately began to lay his plans for obtaining control of the Erie Railroad in the following year. In the latter effort he did not succeed, however, and after a protracted and dramatic contest he was defeated by his great adversary, "Uncle"

Daniel Drew. The story of this contest need not be detailed here, as it is given in full in the chapter on the Erie Railroad.

In the fall of 1869 the Commodore, having secured everything in the railroad field he had sought except the Erie, put through his scheme for consolidation. The New York Central and Hudson River Railroad was incorporated. It included the old New York Central and also the Hudson River Railroad but not the Harlem. The capital of the consolidated company was placed at ninety million dollars, a figure of such magnitude in those days that the world was startled. The system embraced in all nearly 850 miles of railroad lines. A few years later the Harlem Railroad was leased to the property at a high valuation and a large dividend was guaranteed on the stock, the ownership of which was retained by the Vanderbilt family.

The Vanderbilt system as it is now understood really began with these transactions. From this time on, its history has been similar in many respects to that of other large systems which were the outgrowth of merger or manipulation in these early days. During the remarkable period of commercial and industrial development in this country from 1870 onward, when thousands of miles of

new lines were built every year, when the growth of population was beginning to make the States of Ohio, Indiana, and Illinois centers of wealth and production, and when the wonderful Northwestern country embracing the States of Michigan, Wisconsin, and Minnesota, was so rapidly opened up and brought nearer to the Eastern markets, the Vanderbilt railroad interests were not idle. The original genius, Cornelius Vanderbilt, was soon gathered to his fathers, but his son, William H. Vanderbilt, was in many ways a worthy successor.

By 1885 the Vanderbilt lines had grown in extent and importance far beyond any point of which the elder Vanderbilt had ever dreamed. Long before this year the system included many smaller lines within the State of New York, and it had also acquired close control of the great Lake Shore and Michigan Southern system, with its splendid line from Buffalo to Chicago, consisting of more than 500 miles of railroad; the Michigan Central, owning lines from Detroit to Chicago, with many branches in Michigan and Illinois; the Canada Southern Railway, extending from Detroit to Toronto; and in addition to all these about 800 miles of other lines in the States of Ohio, Indiana, Michigan, and Pennsylvania.

In this same year 1885, another event of importance took place. The New York, West Shore and Buffalo Railroad, which after strenuous efforts extending over many years had constructed a new trunk line from Weehawken along the west shore of the Hudson to Albany and thence to Buffalo, came under the control of the New York Central. The great system in the Middle West, now known as the "Big Four," or Cleveland, Cincinnati, Chicago and St. Louis — embracing 750 miles of lines westward from Cleveland and Columbus, Ohio, to Indianapolis, Springfield, and Cincinnati, and having traffic connections with St. Louis — was also a Vanderbilt property at this time, although not under the formal control of these interests. Another important competing line secured in this period was the New York, Chicago and St. Louis, built to parallel the Lake Shore and known as the "Nickel Plate" route. This road extended from Buffalo to Chicago, and, like the West Shore, had been constructed with the hope of ultimately selling out to its competitor.

The development of railroad properties under the Vanderbilt influence was not confined to the territory east of Chicago and the Mississippi Valley. As early as 1859 a large system of roads had

been merged in the section extending westward from Chicago to Omaha and radiating throughout Iowa, Minnesota, Kansas, Wisconsin, Missouri, and other States. This company was known as the Chicago and North Western Railroad, and its property, which was one of large and growing value, by 1886 embraced a system of over 3500 miles of road. Although neither controlled by the New York Central nor directly affiliated therewith, it was classed as a Vanderbilt property.

While for many years after the death of the Commodore the Vanderbilt family remained in direct financial and operating control of the New York Central and its myriad of subsidiary lines and their genius as railroad builders and operators was distinctly evident, yet the brains and resources of the Vanderbilts were not alone responsible for the brilliant career of the system down to recent times. William H. Vanderbilt, though a man of unusual ability, did not possess the breadth of view or the sagacity of his father, and in the course of a few years he found himself exposed to a cyclone of public criticism. He had let it be widely known that he was personally the owner of over eighty-seven per cent of the hundred million capital of the company. In 1879 the New York Legislature,

backed by the force of the popular anger and surprise at the accumulation of a hundred million dollar fortune by one man in ten years, was investigating the management of the New York Central with a view to curtailing its power; the rate wars were on between the seaboard and Chicago; and Jay Gould was threatening to divert all the traffic of his Wabash, St. Louis, and Pacific lines from the New York Central and turn it over to other Eastern connections unless Vanderbilt would give him a vital interest in the Vanderbilt lines.

Vanderbilt was harassed beyond endurance and, being of softer material than his father, was fearful of the outcome of public opinion, notwithstanding the fact that in a moment of anger — according to the statement of a newspaper reporter whose veracity Vanderbilt denied to his dying day — he had used the familiar expression, "The public be damned!" There were intimations that the Legislature was planning to impose heavy taxes on the property, solely because Vanderbilt held this gigantic personal ownership in the property. This prospect frightened him and he consulted friends whose judgment he respected. They urged him to sell a considerable part of his holdings in order to

distribute the ownership of the property among a large number of people.

This plan could not be carried out, however, in the ordinary way, because large sales of stock by the Vanderbilt interests, if the speculating and investing public learned that he was making them, would greatly depreciate the price and might create general demoralization and a panic, while they would certainly injure the credit of the New York Central property. But a way out of the dilemma had to be found. It was at this juncture that a new personality, later to be closely identified with the Vanderbilt lines for a long series of years, appeared upon the scene. Vanderbilt was advised to consult J. Pierpont Morgan, of the banking house of Drexel, Morgan and Co. At that time the name of J. P. Morgan was just beginning to come prominently to the front in banking circles in New York. The Drexels had been conspicuous in business in Philadelphia for many years and in a sense were the fiscal agents of the great Pennsylvania Railroad Company. But the spectacular success of the House of Morgan a few years before in marketing the French government loan in England had added largely to its prestige. And so Vanderbilt concluded that, if any man could show

him a way out in his difficult problem, Pierpont Morgan was that man.

The upshot of the matter was that Morgan devised a plan for the sale of a large amount of Vanderbilt's stock holdings through private sale in England, and in such a way that the knowledge of such sale would not become public in America. A confidential syndicate was formed which undertook to take the stock in a block and pass it on to English investors at approximately its current market price of about $130 per share. The sale was promptly accomplished; the stock went into the hands of unknown interests abroad; Vanderbilt received more than $25,000,000 in cash, which he largely reinvested in United States government bonds, and the Morgan syndicate reaped a profit of about $3,000,000. Five months after the closing of the syndicate public announcement was made of the sale and of the syndicate profit. The striking success of this transaction naturally added greatly to the prestige of J. P. Morgan as a financier of very large caliber, and it had the satisfactory effect of curtailing the legislative attacks on Vanderbilt.

From that date forward, the history of the Vanderbilt railroads has been closely identified with

the House of Morgan. J. P. Morgan and his business associates became the company's financial agents, and thereafter all plans of expansion or consolidation were handled directly by them. In the board of directors Morgan banking interests had full representation, which they have held until this day.

The subsequent history of the Vanderbilt lines is chiefly a story of business expansion and growth. From 1885 to 1893, the great panic year, the New York Central each year added to its mileage, either by merger of smaller lines or by construction. All this time it was consolidating the system, eliminating the weaker links, and strengthening the stronger. Its lines penetrated all the best Eastern railroad territory outside of New England, New Jersey, and Pennsylvania, and no other railroad system in the country, with the single exception of the Pennsylvania, covered anything like the same amount of rich and settled territory, or reached so many cities and towns of importance. New York, Buffalo, Cleveland, Detroit, Chicago, St. Louis, Cincinnati, Indianapolis — these are a few of the great traffic centers which were included in the Vanderbilt preserves. The population of all these cities, as well as that of the hundreds of smaller

places and the countryside in general, was growing by leaps and bounds. Furthermore the Northwest, beyond the Great Lakes and through to the Pacific coast, saw the beginnings of its great development at this time; and the wheat fields of the far western country became a factor of profound importance in the national development. Consequently when the period of depression arrived with the panic of 1893, the Vanderbilt properties were, as a whole, in a strong position to meet the changed situation and, like the great Pennsylvania property, they all passed through to the advent of the new industrial era without the defaulting of a bond or the passing of a dividend. The remarkable character of this achievement is evident in view of the fact that in the period from 1893 to 1898 more than sixty-five per cent of all the railroad mileage in the United States went into the hands of receivers.

After the close of this era of panic, the Vanderbilt lines began expanding again, though on a much smaller scale than in their more active time. In 1898 William K. Vanderbilt, then president, made the announcement that the New York Central had leased the Boston and Albany Railroad, at that time a lucrative line running from Albany across Massachusetts into Boston. This gave the

system an entry into the New England field, which it has continuously held since. A few years later this New England interest was increased by the acquisition of the Rutland Railroad in Vermont, thus making connection with the Ogdensburg and Lake Champlain, a line running across the northern part of New York State, which had also come under Vanderbilt control.

When business revived in the closing years of the nineteenth century, the history of American railroads began a new chapter. Federal railroad regulation, which started in a moderate way with the passage of the Interstate Commerce Act in 1887, had steadily increased through the years; the Sherman Anti-trust Act, passed in 1890, had been interpreted broadly as affecting the railroads of the country as well as the industrial and other combinations. These influences had thus greatly curtailed the consolidation of competing lines which had gone on so rapidly during the decades following the Civil War. Railroad managers and financiers therefore began to face a very serious problem. Competition of a more or less serious nature was still rampant, rates were cut, and traffic was pretty freely diverted by dubious means. Consequently many large railroad systems of heavy capitalization

bid fair to run into difficulties on the first serious falling off in general business.

Great men are usually the products of their times and one of the men developed by these times takes rank with the greatest railroad leaders in history. Edward H. Harriman had risen in ten years from comparative obscurity and was now the president of the Union Pacific Railroad, which he had, in conjunction with the banking house of Kuhn, Loeb and Company, reorganized and taken out of bankruptcy. Harriman was one of the originators of the "community of interest" idea, a device for the partial control of one railroad system by another. For instance, although the law forbade any railroad system from acquiring a complete control of a competing line by purchasing a majority of its capital stock or by leasing it, nothing was said about one railroad having a minority investment interest in another. A minority investment, even though it be as low as ten or twenty per cent, usually constitutes a dominating influence if held by a single interest, for in most cases the majority of the shares will be owned in small blocks by thousands of investors who never combine for a definite, practical purpose. Thus the interest which has the one large block of stock usually controls

the voting power, and runs little risk of losing it unless a contest develops with other powerful interests — and this is a contingency which it almost never has to meet.

Carrying out this policy of promoting harmony among competing lines, the New York Central and Pennsylvania Railroad early in 1900 acquired a working control of the Reading Company, which in turn controlled the New Jersey Central and dominated the anthracite coal traffic. Later the Baltimore and Ohio shared this Reading interest with the Lake Shore of the New York Central system. The New York Central and the Pennsylvania acquired a working control of the same kind in the Chesapeake and Ohio Railway, which was an important element in the soft coal fields and was reaching out to grasp soft coal properties in Ohio and Indiana.

These and other purchases, and the consequent voice acquired in the management, established comparative harmony among Eastern railroads for a long time; they stabilized rates and enabled formerly competing roads to parcel out territory equitably among the different interests. Later, Harriman, and to some extent Morgan, carried the community of interest idea some steps further.

Morgan caused the New York Central to acquire stock interests in certain "feeder" lines such as the New York, New Haven and Hartford and the Chicago, Milwaukee and St. Paul, as well as in competing lines; and Harriman caused the Union Pacific not only to dominate the Southern Pacific Company by minority control but also to acquire interests in the Illinois Central, the Baltimore and Ohio, the New York Central, and other eastern properties. The fact was that Harriman had plans in view for acquiring actual control of the New York Central for the Union Pacific and thus, with the Illinois Central, of creating a continuous transcontinental line from ocean to ocean.

In the past decade few unusual or startling events have marked the history of the Vanderbilt lines. The Vanderbilt family no longer possesses a majority interest in the stock, or anything which approaches it, and the New York Central system and its subsidiaries have come to be known more and more as Morgan properties. The system has grown up with the country. Many of its former controlled roads have now been merged into the main corporation and many new lines have been added to it. Hundreds of millions of dollars of new capital have been spent on the main lines and

terminals since 1900. In 1919 the entire property, including controlled lines, embraced more than 13,000 miles of main track, besides about 5000 miles of extra tracks; over 200,000 freight cars are in use on the system, and every year upwards of 200,000,000 tons of freight are transported. The gross annual revenues of the entire system now aggregate more than $400,000,000, while the total capitalization in stocks and bonds exceeds a billion dollars. It is indeed a far cry from that day in August, 1831, when the *De Witt Clinton* locomotive made its trial trip over the primitive rails of the seventeen-mile Mohawk and Hudson road — a far cry even from that other day, thirty-eight years later, when the sagacious Commodore startled the financial world by his New York Central and Hudson River Railroad, with a capital of ninety million dollars.