
A SAGA OF THE SEAS

• • • PHILIP B. McDONALD • • •



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Oceanographer



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CYRUS W. FIELD IN EARLY MANHOOD

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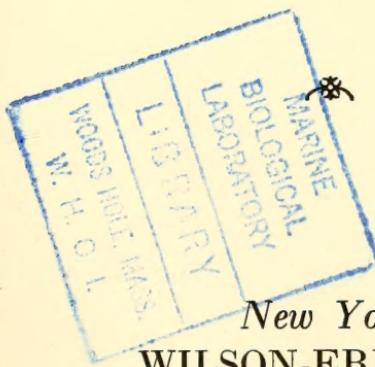
*The Story of Cyrus W. Field and the
Laying of the first Atlantic Cable*

BY

PHILIP B. McDONALD



Illustrated from
Contemporary Prints and Portraits

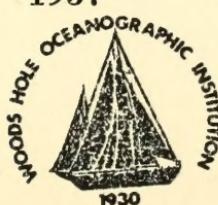


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PREFACE

THE NORTH ATLANTIC, with its fogs and icebergs, put up a stormy resistance when the first telegraph cable was laid along its slimy bed. This difficult feat was accomplished by a New York merchant who stuck at the disheartening job through years of failures. The long fight to stretch a copper wire from Ireland to Newfoundland has become one of the sagas of the high seas. The final success of the cable-laying revolutionized foreign-news service, which had required several weeks to send word of the starting of wars, the death of a great man, or the price of wheat. Such delays are hard to conceive today when transmission of news around the world is almost instantaneous.

The New York merchant who enlisted British engineers and ships for the unique work was Cyrus Field, son of a New England clergymen. He became one of America's favorite heroes, although he suffered much ridicule at first. For many years his whiskered face was well known on Fifth Avenue and on ocean steamers. He was also noted as the promoter of New York's elevated railways and in later life was pointed out as a man who lost his large fortune in one calamitous day in Wall Street. Always picturesque, he had many ups and downs. Courageous and generous, he is interesting as a personality aside from his achievement in linking the continents with an ocean cable. There are many analogies in his life and times to conditions of today.

Four years after his death in 1892, his daughter, Isabella Field Judson, edited and published his letters and autobiographical notes. This book is the best source of original documents. The writings of his enterprising brother, the Reverend Henry Martyn Field, about the cable-laying are somewhat wordy but vividly human and contain many first-hand impres-

sions. A British view of the cable experiments, phrased in persuasive English, is available in the writings of Sir Charles Bright, son of Sir Charles T. Bright, chief engineer in the early attempts before the Civil War.

Because of Field's public services and picturesque achievements, numerous other sources are still extant, such as contemporary articles in newspapers and periodicals, both American and British. Most of these, however, were written from too close a point of view and lack a sense of proportion. A number of them are mentioned in the text. I wish to thank the present descendants of the family for their aid and kindness, especially Colonel Cyrus Field Judson of Ardsley-on-Hudson, son of Isabella Field Judson and grandson of Cyrus Field. I am also indebted to the Western Union Telegraph Company, the New York Historical Society, New York University, and the New York Public Library, for use of books and records.

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April 10, 1937

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A SAGA OF THE SEAS

Chapter One

THE NEW ENGLAND FOUNDATION

CYRUS WEST FIELD, born 1819, died 1892, had one of the most exciting careers of his time. The span of his life marked the transition from a primitive America, without railroads or electricity, to the complicated civilization of the end of the nineteenth century. In that drastic change of the American scheme of living, he took a prominent part. He linked up the news service of Europe with the news service of America—an advance of tremendous significance. As the American statesman, William M. Evarts described it, somewhat grandiloquently: "Columbus said, 'There is one world, let there be two'; but Field said, 'There are two worlds, let there be one.'" The laying of the first Atlantic cable does not deserve such extravagant praise as this, but it was, nevertheless, a striking and romantic achievement—a stirring fight against the forces of nature and the apathy of human nature.

Field's life was a drama in the heroic style. He had a humble beginning, experienced stupendous difficulties, attained a world-wide reputation, and suffered overwhelming misfortunes. Few Americans pass through the extremes of luck that characterized his efforts. He knew hard work and countless discouragements. A unique triumph rewarded his perseverance. After a life of public service and generous deeds, he died a sad and disillusioned man. His personality is one of the most attractive of the Victorian period.

He ran the gamut of adulation and criticism. One month he was called a deluded fool. The next month he was celebrated as "Cyrus the Great," one of the outstanding figures since Columbus. He was glorified by extravagant praise, and his name was cheered by thousands of admirers. New York

exalted him in a two-day carnival; poems were composed about his accomplishments. He was honored by statesmen and nobility. A few days later he was derided as a failure, and accused of fraud and duplicity.

These discouraging insinuations, however, were proved false. Once more he rose to the heights. Although a feted hero for years and a man of deeds apparently sure of permanent glory, he is now remembered only vaguely. Such is fame in American life.

Cyrus Field is interesting as an outstanding man of his times. Properly interpreted, his success in laying the first cable across the Atlantic serves as a background for a revealing study of human nature, both in himself and in the populace that cheered and criticized him. He lived a full life—much of it in the public eye. His biography gives an absorbing picture of American conditions in the mid-eighteen-hundreds, the era of wooden ships, whiskered men, and hoop-skirted females.

As a man, he showed courage, initiative, and determination. Liberal in his tendencies, he trusted others too freely and expected from them the same generosity and frankness that he himself exhibited. Such an assumption is likely to lead to disaster if followed too trustingly. The very optimism and courage that made him famous later wrecked his fortunes. This is one of the lessons of his life, that virtues carried too far become weaknesses. An honest and modest man is always a target for attacks.

One of the interesting aspects of his life was his wide acquaintance with prominent persons, both in the United States and Europe. He had a faculty for friendship and was one of the most widely-known men of his day. Although his admirers were legion and unusually demonstrative, especially at banquets and speeches, he was betrayed more than once by men he considered his friends. Such a frank and trusting type of man was particularly liable to be preyed upon.

Much of his life was devoted indirectly to public service. He benefited mankind by showing that ocean cables could be laid to connect the continents; as an unofficial ambassador he smoothed the difficult relations between the Northern States and England during the Civil War; and he gave New York an improved transit system. An inveterate traveler, he was a frequent passenger on Atlantic liners and a familiar figure abroad. Altogether he was a man worth knowing, a leading personality during an important period of transition in modern civilization.

It is worth tracing the career of this notable New Englander from the hills of western Massachusetts, who conquered Broadway, was toasted by London and Paris, and sped the transmission of intelligence across the Atlantic. One of a family of eminent Americans, he was another example of a minister's son who came to the metropolis and achieved success. Study of his career helps to reveal the national characteristics of the mid-nineteenth-century.

When Cyrus Field was born, in 1819, the young American republic had scarcely more than obtained a fair start after the disorders of two wars with England. Most of the people lived in primitive villages, isolated from the larger centers by lack of railroads and news service. It was still the ox-cart era of slow transportation over rough roads cut through a formidable wilderness. The nation had about twelve millions in population.

In the Berkshire Hills, where Field was born, a village was largely dependent upon its own products and local leadership. Life was hard and insistent. The stern puritanism that ruled in social matters did not alleviate the severity of natural handicaps. The church, however, supplied a unifying bond and a spiritual guidance that kept the community inspired to a workable, if narrow, effort.

The father of Cyrus Field had only recently taken over the pastorate of the church at Stockbridge, a tiny settlement in

the valley of the Housatonic river, not far from the New York state line. The population was small but it had produced Colonel Ephraim Williams, the founder of Williams College; and the eloquent but disturbing Jonathan Edwards had lived and preached there. In those days the worth of a town depended upon quality rather than upon quantity.

The Field family had moved their goods up from Haddam, Connecticut, where the Reverend David Dudley Field had started his career as a preacher fifteen years before and had brought his young bride. Even the trip of less than a hundred miles from Haddam to Stockbridge was a task of great difficulty and even danger in that period, especially with several young children and a load of household goods to manage. This short trip required several days; today it could be completed in as many hours.

The Field family was a respected one. It can be traced back to Zechariah Field, who came to Massachusetts from Ardsley, Yorkshire, about 1629. He was a grandson of John Field, the astronomer, who courageously introduced the unpopular Copernican theory into England as early as 1556—long before Galileo was persecuted for teaching it in Italy. An informative article about John Field was published in the *Gentleman's Magazine* of May, 1834. The family is believed to have come to England from France during the Norman conquest. The name originally had “de la” before it and, as was customary, was spelled in various ways, such as “Felde” and “Feild.” The well-known Chicago merchant, Marshall Field, was descended from these same ancestors.

Cyrus Field’s grandfather, Timothy Field, served as captain in Washington’s army; even in later life, when fashions were changing, he continued to wear a cocked hat, short breeches, long stockings, and silver shoe buckles. His son, the father of Cyrus, attended Yale College, where he was influenced by that stubborn old conservative, President Timothy Dwight. In connection with his pastoral work, the Reverend David

Dudley Field became noted as a local historian of towns and counties in Massachusetts and Connecticut. For example, he wrote histories of Berkshire county, Massachusetts, and the city of Pittsfield.

Such histories, as well as his sermons, were in the best New England tradition. A notable sermon of Parson Field was a "Warning Against Drunkenness," which he delivered with stirring effect at the execution of a violent-tempered man who had murdered his own wife while drunk. In exhorting this unfortunate, who was about to be hanged, the eloquent preacher declaimed: "Before yonder sun shall set in the west your probationary state shall be closed forever. This day you will either lift up your eyes in hell, being in torment, or, through the rich, overflowing, and sovereign grace of God, be carried by the angels to Abraham's bosom."

The old parson's New England conscience forced him to strict measures even when his natural kindness urged him otherwise. Thus a sense of duty forbade permitting membership in his church to the Unitarian followers of William Ellery Channing. The Reverend David Dudley Field was never inclined to compromise with what seemed to him contrary to his duty. He was of the stern old stock that saw life in the light of strict moralities and unbending purpose. The small villages throughout the western hills of New England remained conservative long after Harvard and the cities encouraged new ideas.

The mother of Cyrus was the former Submit Dickinson, called, as a girl "the Somers beauty." She was the daughter of Noah Dickinson, of the village of Somers, Connecticut, who, like Timothy Field, had served as captain in the Revolution. As was customary in those times, she married early and bore a large family. Curiously enough, her husband was accustomed to call her "Mrs. Field" instead of "Submit," even in the privacy of their home. A picture of her in middle life shows a resigned woman with good features and kind eyes, wearing

a white bonnet fastened closely by a bow under the chin. Her husband's features also were well formed but with the taut expression characteristic of a man accustomed to fighting Satan. Cyrus came naturally by his handsome and intelligent looks.

When the father became pastor of the Congregational church at Stockbridge, the salary was six hundred dollars a year—which was much more than the redoubtable Jonathan Edwards had received in the same settlement several generations earlier. There were two daughters and eight sons to be brought up on this income. Cyrus was the eighth child and seventh son. Three other sons achieved distinction in American history—David Dudley Jr., Stephen Johnson, and Henry Martyn. The name of another son, Jonathan Edwards Field, born before the family moved to Stockbridge, indicates an admiration by the parents for that ardent revivalist; Jonathan became a lawyer and politician.

The oldest son was David, fourteen years older than Cyrus. He became a famous lawyer and jurist in New York, especially prominent in the troubled years following the Civil War, when a number of outstanding legal cases were argued. Some of his cases came before the United States Supreme Court when his brother Stephen was a member of that august body. He acted for Jay Gould and James Fisk Jr. in the notorious Erie Railroad litigation; he defended the Tammany politician Boss Tweed; and he represented Samuel J. Tilden in the dispute over the election of 1876, when Tilden really was elected president but was defeated by Hayes in the electoral college.

David's greatest achievement was his aggressive work for the codification of the common law. He helped to bring together divergent and confused rulings into a systematic code that had some semblance of order and clarity. His powerful influence was exerted to simplify legal procedure and make it understandable; for example, by changing the num-

erous foreign phrases into ordinary English. A born reformer, he had an inherited urge to fight obscurantism and to make the truth available. Such a stand aroused bitter opposition among conservative lawyers, and he was subjected to severe ridicule and abuse. His motto was, "The only men who make any lasting impression on the world are fighters." Although called cold and forbidding, he had stanch admirers. He definitely impressed his generation as an outspoken critic of antiquated legal practice.

David, being older than Cyrus and early established as a lawyer in New York, was able to give a helping hand to his young brother. Cyrus deserved aid from his older brothers who had attended college, since the family's finances were not sufficient to send him there. David and Cyrus, though differing on many political questions, remained life-long friends. They were highly individualistic but strongly affectionate. Their long residence as neighbors in New York reinforced family ties and the memories based on childhood days, when they had knelt in the home sitting-room and listened to long prayers from the old parson. All their lives, scattered though the Field children were, they recalled vividly their puritanical upbringing in the Massachusetts hill village, where their world was an old-fashioned parsonage in an isolated community of Yankee stock.

Another older brother, Stephen, became a United States Supreme Court justice after an adventurous career. In 1849 at the age of thirty-three, he sailed for California, the land of gold, where he landed with ten dollars in his pocket. Relieved from the supervision of father and brother, he entered heartily into the rough life of the frontier. Having had legal training, he was soon involved in actions at law, political feuds, and land speculation. It was his intimate acquaintance with Western land and mineral conditions that brought about his appointment to the United States Supreme Court by Lincoln during the Civil War.

In the Court decisions, Stephen Field submitted many minority reports, and his dogmatic opinions aroused widespread criticism. On several occasions there were threats to shoot him if he returned to California, and one such attempt actually was made. A few months before his death at eighty-three, he was asked by his colleagues on the bench to resign. One explanation of his stubborn mind was that it had become set when, at Williams College, he was taught logic and philosophy by Mark Hopkins, the eminent educator, who also came from Stockbridge. He was a candidate for President in 1880 and 1884. A book called *Stephen J. Field, Craftsman of the Law* has been written by Dr. Carl B. Swisher.

Both David and Stephen were equipped by inheritance and temperament to render important service to the development of American law. The talents that they gave to the improvement of the nation's legal practice included a faculty for abstract and systematic thought, supported by personal initiative and determination. Their father's theological and historical background had accustomed them to controversial and theoretical issues. Like their father, they were not afraid to stand by their convictions when they believed that it was their duty to do so. Neither of these sons was popular, but both were respected.

The youngest brother of Cyrus was Henry, who became a clergyman and writer. Something of a rolling stone, he had a varied and interesting life. He preached, traveled, and edited a religious periodical called *The Evangelist*. Although his travel books have been criticized as discursive and superficial, they conformed to the expectations of his readers, especially in pious interpretations, and are still readable. His book, *The Story of the Atlantic Telegraph*, shows a versatility of which few clergymen are capable. Henry Field was a very charming fellow.

His influence in the Presbyterian Church was liberal and progressive; he was even something of a man of the world.

To the consternation of his family and followers, he married a beautiful foreigner who had been a leading figure in the scandalous murder of a French duchess. Henry Field showed courage in defying smug society to bring this exotic girl to the United States. Her story has been told in slightly-disguised form in a book called *Lucile Cléry* by Joseph Shearing. In Henry's later years, he was inclined to envy his more famous brothers, whom he exalted in his writings and sermons. His own life, however, was varied and active and he enjoyed rich experiences such as conventional clergymen usually miss.

This youngest son of the old parson was not so persevering or single-minded as the others. David and Stephen were noted for their militant and relentless ways. Cyrus, who came between them and Henry in age, was ingratiating and attractive, while still firm and determined in his purposes. Henry was more changeable and easy-going. His writings indicate a facile ability, calculated to please a wide circle of admirers. In this youngest son, the father's strong will and unswerving attitude were less evident than in the others.

In his old age, the father himself became less obdurate and somewhat subdued. He lived to be nearly eighty-six and in his later years was dependent upon his wife's ministrations. At his funeral in 1867, Mark Hopkins, who had been baptized by the old parson, spoke feelingly of his record as a pillar of devoutness and duty. On the memorial tablet to the Reverend David Dudley Field in the Stockbridge church are the pious words: "The Hoary Head is a Crown of Glory when found in the way of Righteousness."

When Cyrus was born on November 30, 1819, his father had only recently become pastor at Stockbridge. It was natural that the new baby's name should be "West," after the venerable clergyman who had held the pastorate for more than half a century previously. "Cyrus" was the first name of the president of the local bank. It was a somewhat over-

whelming name to give such a frail baby, but formidable names based on Biblical and historical sources were common then.

The baby, although delicate, soon showed that it was endowed with nervous energy. It was a favorite of the mother, perhaps for that reason. Throughout his life, Cyrus Field's health was never robust but was sustained by enthusiasm and eagerness. In his mature years, he was sometimes called ruthless and dictatorial when the animating purpose was really only an anxiety to make progress and get results. Something of the new spirit that was stirring the American republic, with the rise of Andrew Jackson into political power, seemed to enter into this baby in the Stockbridge parsonage. It was the age of the construction of the Erie canal and of early experiments with railroads.

Life among the hills of Massachusetts during Cyrus' childhood was still cast in the puritanical tradition. Every morning and evening the family came together for a religious service, each member with a Bible to read from. The father's long prayers at these gatherings made a deep impression on the kneeling children although they did not always understand the obscure theological terms. One of the favorite expressions of the father which puzzled the children was that "the Lord will overturn, overturn, overturn—until he come, whose right it is." There is something peculiarly moving in this picture of the devout family bowed down in the bare sitting-room listening to the Old Testament phraseology with its big words. Of the several boys who knelt down in this parsonage among the hills, one was to become a leading figure at the American bar, one was to build bridges and railroads, one was to supply knowledge of the West to the highest court in the land, one was to conquer the Atlantic for the transmission of intelligence, and one was to exert an influence for a more liberal interpretation of religion.

This was still the age of theological argument—arguments

that seem strange today. One of the typical controversial points of the time was whether the Sabbath began at sunset on Saturday or at midnight. The old parson's advice on this question was, if in doubt, to keep both periods as sacred. The Field children were required to be in the house by sunset on Saturday evening. At that hour the father welcomed them solemnly with the words: "We are on the borders of holy time." The suppressed children looked forward anxiously for sunset on Sunday when they were free again. Such a method of spending week-ends has gone out of fashion, except perhaps in Scotland.

Living conditions during Cyrus' boyhood were primitive and difficult. In the Field home the meals were cooked in medieval style over an open fire, with only a brick oven to supplement the fire-place. Cook-stoves were unknown, as were coal, gas, and kerosene. Lighting was by candles or whale oil. The meat supply came from animals killed in early winter and packed away in the cellar. There were no butcher-shops in Stockbridge, nor even traveling meat-vans. A favorite dish was salt pork and boiled potatoes—that staple meal of so many farmers in the American backwoods.

Clothes were home-made. Even after Cyrus was working in a great New York "emporium" he continued to receive clothing made at home by his mother. What such suits lacked in fashionable cut, they made up in wearing qualities. Living then was much more difficult because nearly everything had to be made by hand, even pins and nails. In the more remote New England villages the conditions of subsistence approached what they had been in medieval Europe, when a typical village produced all its necessary staples except iron and salt.

There was, however, an excellent academy in Stockbridge—one of those admirable old schools taught by a master who took his work seriously. A few years before Cyrus' attendance, a student named Mark Hopkins had absorbed early ideas of

education there, ideas that he was later to put in practice as president of Williams College. Cyrus' education was of short duration, but sound and inspiring. As this boy studied his "fourth reader," he little dreamed that a later generation of pupils all over the United States would read and recite a poem about Cyrus Field from the fourth reader of their day.

As to the social diversions of the village of Stockbridge, they were few enough. Cyrus liked to wander over the hills and envisage new horizons—a characteristic that remained with him throughout life. Inspired by his nervous energy, he mingled well with the other boys and led them in games. At the age of fifteen he acted in amateur theatricals at the local academy. Goldsmith's *She Stoops to Conquer* was given, and Cyrus played "Mrs. Hardcastle." On the previous evening he had taken the part of the son of an Indian chief, in what was called a "Tragical Dialogue," including five young men. This appearance on the stage in his home village is somewhat surprising in view of the rigid beliefs about amusements. Little did the audience realize the drama that was to characterize his life. Other names on the theater program indicate the nationality and something of the character of his comrades. They included Adams, Watts, Dwight, Lincoln, Stuart, Tremain, Williams, Pomeroy, Rockwell, Fowler, Selkirk, Carter and Vallet—all of northwestern European origin.

Before he was sixteen Cyrus left home for good. Yet so thorough had been his upbringing that his character was already set at that early age. Once away from his parents' control, he acted as mature and grown-up as though he was ten years older. Even beset by the strange customs and easy ways of the sophisticated city of New York, he remained a boy of the hills, although later to become an international promoter and to consort with the great.

Chapter Two

A YOUNG MAN IN NEW YORK

THE FIELD FAMILY had always lived in New England, principally Connecticut and Massachusetts. The oldest son, David, foresaw the coming growth and prosperity of New York and established himself there as a lawyer after his preliminary education at Williams College. The completion of the Erie canal in 1825 made New York the American metropolis, and it soon boasted of nearly two hundred thousand population. It was more mixed in nationalities than Boston, Philadelphia, Baltimore, Charleston, or Savannah, and perhaps more vulgar, but much less narrow and hide-bound. David and Cyrus did well to leave a New England village and go to New York. They arrived as the new expansion was getting under way and grew up with the city. The Erie canal, though only a ditch four feet deep, was affecting the lives of many Americans.

The period that drew David and his brothers to New York was one of great expansion and progress in national affairs. Jeffersonian democracy was in the air, and the surging energy of a rising people was bursting the bonds of caste and convention. The eyes of the nation were turned to the West, and the vast possibilities of the continent's natural resources and undeveloped opportunities were being recognized. After several false starts and unfortunate interruptions, the newly-organized republic of the western world was getting into its stride.

The new system of canals, supplementing the rivers and the turnpikes, had reduced freight rates to a tenth or a twentieth of the former costs. This was an economic factor of enormous importance and was the basis for a splendid boom in business. The recently-invented steamship was also prov-

ing an industrial asset, although many poorly-constructed ones blew up or racked themselves to pieces. A novel means of transit by "rail-roads" with rather feeble locomotives was being demonstrated by ingenious inventors, and bold prophets were predicting the eventual supremacy of rails over the established canals.

Many minor inventions and conveniences were coming in to make life less arduous and toilsome. Even so small an advance as the invention of matches was significant of the trend to a more urbane civilization. The industrial revolution in the United States was under way. The typical American predilection for action, exploitation, and progress was demonstrating itself.

Cyrus Field's career began in the Jacksonian prosperity of the 1830's. During his active life, he saw the panic of 1837, the coming of Darwinism, the Civil War, and the panic of 1873; the nation changed from agricultural to industrial. When he died in 1892, the "frontier" era of American history was over, and a more advanced order of society was in preparation. Roughly speaking, his span of life corresponds to the Victorian era of England. In fact, Queen Victoria was born in the same year as Field but survived him by nine years. He died in the same year as Tennyson. When he was born, theology and politics absorbed men's attention; when he died, economics and industry were paramount interests. Men themselves had changed, as well as the nation's development.

The New York to which the Field boys came to seek their fortunes was an irregular cluster of old-fashioned houses on the lower tip of Manhattan island. Business life centered around the docks, where sailing ships discharged their exotic cargoes. Dirt roads were still common although paved streets with horse-cars were coming in. The rich men of the time lived in tree-shaded dwellings around Wall street and the Bowery. Many had summer homes up in Greenwich Village. Columbia College was in the present financial section; the

church-like building of New York University was uptown at Washington Square, on the outskirts of the city.

The bad sanitary conditions then prevailing exposed the citizens to terrible plagues of yellow fever and cholera. The drinking-water from the hand-pumps was so uncertain and tainted that many residents depended largely upon other beverages. When epidemics ravaged the city, the remedies and preventives included such hallowed superstitions as building bonfires at street corners to purify the air, profuse bleeding of under-nourished patients, smearing the body with oil or medicaments, and putting garlic in the shoes.

David Field found New York hospitable and easy-going compared with the austere towns of New England. His letters home painted a city where money was relatively plentiful and opportunities for a smart young man so promising that anything might happen. Cyrus, though barely in his teens, was inspired by David's glowing descriptions. Apparently a new world down the Hudson awaited the repressed boy from the puritanical village in the hills.

When he was five months past his fifteenth birthday, Cyrus got his parents' consent for leaving home to seek his fortune. Realizing that money was not available for a college education, he resolved to go to New York, where David was a rising young lawyer, and to enter business. The father gave him eight dollars from the thin family purse, and on April 29, 1835, he set out—only a boy in years but resolved to act like a man.

There was a drive of thirty miles to the Hudson river, as no railroads had yet approached Stockbridge. This short drive cost more than the hundred-mile steamer trip down the Hudson. The steamer fare was only fifty cents and his entire expense from Stockbridge to New York was only two dollars, although the trip required twenty-four hours to complete. Today it is a railroad or motor ride of about three hours up the Housatonic valley from New York to Stockbridge, but it

is no cheaper than a century ago. As he sailed down the beautiful Hudson past Irvington and Dobb's Ferry, he little imagined that he would one day live in a palatial mansion on a hill between those towns and that there he would entertain distinguished American and European visitors.

Arrived in New York, Cyrus went to the leading dry-goods store of A. T. Stewart & Company on Broadway, where David had secured him a job as errand-boy. The store was between Murray and Warren streets, and he obtained board and lodging on Murray street for two dollars a week. His first year's salary was only fifty dollars, so that he had to borrow from his father and David. For the second year he received a salary of a hundred dollars and was almost able to pay his board. During the third year he was affluent on two hundred dollars. The contract was for three years—a sort of apprenticeship to give him business training.

The homesick boy wrote to his father about two weeks after leaving Stockbridge. Among several references to the family was the admonition: "Take good care of mother, and tell her she must not get overdone." He did not mention that during many of the spring evenings he used to wander along the Hudson, wishing that he was in one of the north-bound steamers headed home. Professor Mark Hopkins, when in New York, cheered up the unhappy boy at a Sunday dinner at David's. However, Cyrus was soon to get over his loneliness in the excitement of new developments and friends. David had married a cousin of Mark Hopkins and had made many influential acquaintances in New York including William Cullen Bryant, the talented poet and renowned editor of the *New York Evening Post*. David later contributed a series of notable articles on American legal practice to this newspaper.

At first Cyrus' work required that he be at the store before seven o'clock, but when he was promoted from errand-boy to clerk, the hours were from quarter past eight until the managers had left in the evening. Despite the late hours, he re-

solved to attend a theater even though (or perhaps because) at home such straying from the straight and narrow path had been called "taking the first step toward Hell." As his daughter later expressed it, "Being of an inquiring mind he determined, as so many country lads have done before and since, upon giving one of the first evenings in the city to finding out for himself what Hell was like." For a green boy of fifteen, receiving the salary of a dollar a week, this was a rash determination. It is interesting to note, as showing the customs of the times, that some New York theaters seated "women of ill fame" apart from the rest of the audience.

When he wrote home, his letters described, not his impressions of the New York theater, but another sensational sight for a small-town boy—a big fire. On Christmas day, 1835, he wrote to his father that he had seen "the largest fire ever known in this country. It burned about 674 buildings, most of which were wholesale stores, and laid waste all of thirty acres of this city. I was up all night to the fire, and last Sunday was on duty with David as a guard to prevent people from going to the ruins to steal property that was saved from the fire and laying [sic] in heaps in the streets. The awful state that the city was in can be better imagined than described." This was the great fire of 1835, which caused a loss of twenty million dollars and which made a glow visible in Philadelphia and New Haven. Ironically enough, the city's scanty water system was frozen at the time. This fire temporarily stopped the city's growth that the Erie canal had heightened. It wrecked the insurance companies and many business firms and it helped to bring the financial panic of 1837.

A typical postscript to Cyrus' letter added: "I wish mother would make for me a black frock-coat (she knows the kind that I want) and a plain black stock. Perhaps you had better send me the \$6 that you were to let me have." The postscript was signed "C. W. Field" although the main letter was signed "Your affectionate son, Cyrus." A year later he wrote his

mother to make him "a black broadcloth coat with skirts and covered buttons." He sometimes sent his mother purchases of cloth from the store, such as a remnant of merino or a muslin collar.

An earlier letter than this gave many homely details of his life in New York. It began: "I received by Mr. Baldwin five nightcaps, a pin-cushion, and some wedding-cake." Somewhat ungrammatically he continued: "There is in the store beside the firm twenty-four clerks, including two book-keepers." An expense account in this letter listed: hair cutting $12\frac{1}{2}$ c, one vial of turpentine to get some spots out of coat $6\frac{1}{4}$ c, shoes mended $18\frac{3}{4}$ c, two papers of tobacco to put in trunks to prevent moths getting in $12\frac{1}{2}$ c, one straw hat \$1, and a steel pen $12\frac{1}{2}$ c. Steel pens were then replacing quills. David had thought that the straw hat from home was too dirty.

Next to the great fire, probably the most sensational newspaper story of the period was the scandalous murder of a "bad girl" called Ellen Jewett, by a man of the upper class in a luxurious house of ill repute. James Gordon Bennett himself visited the scene and regaled the readers of his *New York Herald* with lurid details. The trial that followed, in which the murderer was acquitted, engrossed the New Yorkers of 1836. It must have seemed frightfully sinful to young Cyrus from Stockbridge, for it revealed a phase of life of which he knew little.

For amusements, besides walks along the Hudson, he patronized the Mercantile Library at Nassau and Beekman streets. He wrote to his mother that he had read through the *Pilgrim's Progress*, and that he and another clerk (apparently his room-mate) took turns in reading a chapter of the Bible "every night before we go to bed, and we have got as far as the 25th chapter of Genesis." He also joined an Eclectic Fraternity, which met weekly over a leather store for debates. A loan of twenty-five dollars from his father seemed to prey

on his mind, but he finally repaid it, with a silk handkerchief as interest.

An amusing incident that occurred in 1837 reveals sidelights on the attitude of employees, and shows that human nature changes very little. The Stewart store's strict rules required that clerks record their tardinesses both in the morning and after dinner and supper, somewhat in the manner of punching a time-clock. For each tardiness a fine of twenty-five cents was collected, and this sum was to be kept and given to a charity that the clerks should designate. The regulation was phrased in the pious language of the period.

On October 1, the clerks, who possessed names like Selden, Goodrich, Walker, Selby, Matthew, Austin, Mills, MacFarlan, and Zabriskie, demanded the accumulated fines from the cashier and repaired to a popular oyster-saloon in a basement on Broadway at Chambers street. A unanimous vote demanded that an oyster supper should be served at the expense of the fund, which Cyrus as treasurer had in charge. This was done, and then followed a protracted debate as to which charity should receive the balance. This debate, over the oysters and drinks, must have been very amusing. These clerks were on a spree and talked in bold terms.

At last it was unanimously resolved that there was no such deserving charity in the city or state of New York as the clerks of A. T. Stewart & Company, and that Cyrus should repay to each clerk the exact amount of his fines less the cost of the supper. By this time it was nearly daybreak. Naturally A. T. Stewart was not particularly pleased to hear of all this, but the damage had been done.

Years later, when Cyrus was famous, Stewart remarked that probably the young man had received his first suggestion of the possibilities of telegraphy when he used to tick warnings to the other clerks that Stewart was approaching, so that everyone could appear busy and attentive. When Cyrus left the employ of the store, after three years there, a dozen of the

clerks gave him a complimentary dinner, and one of Stewart's partners presented him with "the accompanying trifle as a token of esteem and sincere friendship." The trifle was a diamond pin that Cyrus wore for over twenty-five years.

When the financial depression of 1837 began, Cyrus was still working for A. T. Stewart & Company. Confused times came upon the country. Instead of sitting tight at his job, Cyrus, who was eighteen years old, attended evening school to learn bookkeeping by double entry. He then resigned at the store, despite Stewart's offer of a rise in salary, in order to accept a position as assistant to his brother, Matthew, who was then engaged in manufacturing paper in a small mill a few miles from Stockbridge. Matthew had offered him \$250 a year, with board and washing. Cyrus' new duties included sales trips to Boston, Philadelphia, Washington, and New York. In the interval between leaving Stewart's and beginning work at Lee, he made a business trip for his brother Dudley as far west as Detroit and Ann Arbor, so that he saw something of the vast territory that the canals and railroads were opening up. He was now a man of affairs though scarcely out of his teens. The homesick country boy, awed by the big city, was acquiring experience and assurance. As a salesman, he was successful by reason of his likable nature and optimism; but the nation's business was under a cloud, and conditions grew worse instead of better.

The depression proved to be a protracted one, and small companies, inadequately financed, failed by the hundreds. It was a period when quick shifts had to be made; no one knew what to expect amid the uncertainties and fears on all sides. By the spring of 1840, as a new presidential election approached, a little improvement seemed possible for hard-pressed American industry.

Cyrus, who was past twenty years old, optimistically resolved to go into business for himself as a manufacturer of paper. He bought an interest in a small paper-mill at West-

field, Massachusetts, with the little fund that he had saved. Such mills were being sold at low prices. But conditions were still difficult, and by October, he was in a mood to accept an offer from the firm of E. Root & Company, wholesale paper-dealers of Maiden Lane in New York City. The offer was for him to become a junior partner and promote sales in such cities as Philadelphia, Baltimore, Washington, and Boston. The New York office was managed by the senior partner. As events afterward proved, Cyrus should have investigated the company's finances more carefully before involving his future in a situation with which he was not familiar. Things were going to happen that would make him wish himself safely back at Stewart & Company selling dry-goods.

Two days after he was twenty-one, while his financial prospects were still in doubt, Cyrus somewhat rashly married Mary Bryan Stone of Guilford, Connecticut, which was near his father's birthplace—not far from New Haven. Miss Stone's father had died of yellow fever in Georgia many years previously. Since then the widow, with three children, had lived with her aged parents at Guilford. In a letter from New York announcing the coming marriage to his father and mother, Cyrus wrote, somewhat formally: "The writer of this intends to be joined in the bands of matrimony to Miss Mary B. Stone one week from this day, that is, on next Wednesday morning, December 2, 1840, at 10 o'clock A. M., and requests the pleasure of meeting you both, with sister Mary, at the house of Mr. A. S. Fowler in Guilford, at the above-mentioned time." Letters were still mailed without envelopes; the postage was thirteen cents for short distances.

Dr. Field came over to perform the ceremony from the near-by village of Haddam, Connecticut, where he was then pastor. Stephen, who had not yet sought his adventurous fortune in California, acted as groomsman for his brother. There were three kinds of cake, with wine, before the party drove to New Haven. On the next day, the newlyweds went to New

York by boat and started boarding in a house on Bond street, where they remained for two years, paying sixty dollars a month for the two. Housekeeping was a hard undertaking in those days of old-fashioned stoves and whale-oil lamps, with no regular system of running water, and was not to be undertaken rashly by a young couple.

Four months after the wedding, the firm of E. Root & Company failed with large liabilities. Although Cyrus was not the principal, in some obscure manner the burden of debts fell upon him. Overwhelmed by this avalanche, he negotiated the best terms he was able with the creditors, paying what he could, and thus released himself sufficiently from the rigid laws of the time to dissolve the firm and start a business of his own. This failure and the stern discipline incidental to doing business during the depression of the late thirties gave him a certain ruthlessness in attitude and outlook. Young men striving for success are apt to show ruthlessness.

He now took an office near the East River docks and organized the wholesale-paper firm of Cyrus W. Field & Company. Later he took into the firm his brother-in-law, Joseph F. Stone. A long period of hard work was ahead, with debts hanging over. It was a discouraging beginning for a newly-married couple, but the marriage proved a singularly happy one. His family expenses during this early period of married life were about fifteen hundred dollars a year. There was an item of a willow cradle costing two dollars, and eighty-eight cents for repairing a silk hat. A doctor's visit cost one dollar at that time.

In 1842 the new Croton aqueduct brought adequate supplies of running water to the city that had suffered so from lack of it in the great fire of seven years before. Housekeeping was now made easier, especially as returning prosperity brought additional conveniences to city-dwellers. The Fields stopped boarding and rented a house in the suburbs at 87

VALENTIA IN 1857



East Seventeenth street, where they lived for ten years. Brother David believed this location to be too far out in the country but later he moved to a house near by. So assiduously did Cyrus devote himself to his business that he breakfasted by lamplight and took dinner and supper downtown near his office on Cliff street. His children, who were beginning to come, saw him only on Sundays. The intense, grinding work gave him a restless manner, and his health declined. Fortunately a period of expansion and national prosperity succeeded the devastating years of the depression. New gold from California began coming in to stimulate trade.

Cyrus' arrangements with the creditors of E. Root & Company had been in the nature of a compromise that had released him from legal obligations by part payment of the full amounts due. His own feeling, however, was that he should repay these debts in full, even though he had had little to do with contracting them. By 1853, when he was thirty-three years old, he had prospered so successfully that he was worth over a quarter of a million dollars, which had a large buying power in those days. He looked up the old debt records and computed the unpaid portions with interest at seven percent. To each creditor he sent a check for this full amount.

They had never expected to be paid after ten or more years, as there was no legal obligation; consequently they were overjoyed. Some were elderly men in poor circumstances, others widows. It was a noble act typical of a generous and conscientious nature. As an example of how the interest had mounted during the years, an original debt of \$1500 in 1841 had been compromised in 1845 by Field's paying \$942.07, a full discharge being then granted. In 1853 the creditor unexpectedly received a check of \$1142.49 for the balance with interest. Obviously this amount was larger than the sum accepted in 1845 for the full payment, and was in fact not much smaller than the entire original debt.

"I now wished," Field wrote, "to retire from business alto-

gether, but at length I yielded to the solicitations of my junior partner so far as to agree to leave my name at the head of the firm and to leave in the business a capital of \$100,000. But this was done with the express understanding that I was not to be required to devote any time to it." He was now in a happy position—a rich man, free to indulge his hobbies and blessed with an untroubled home life. Being an active man, full of energy and faith, he looked around for something to interest him. He had recently moved a few blocks north to Gramercy Park and had built a house, later called 123 East Twenty-First street, on the north side of that aristocratic square. There were only a few other buildings around him at first, although his brother David occupied the next house. Forty years were to be spent at this convenient headquarters.

In 1849 there had been a trip to Europe on the advice of the family physician, who feared overwork and business strain. Leaving their four small daughters in care of an aunt at New Haven, Field and his wife visited England, after a crossing of eighteen days; then Scotland, Ireland, and the Continent. At a church in Scotland, when Mrs. Field gaily offered to share her book of Psalms with her husband, a stern old lady, assuming that the young couple were not married, reproved them by saying: "Remember that you are in the house of God."

On the Continent they paid visits to Paris, Geneva, the Italian cities, Vienna, Germany including a Rhine voyage, and Brussels. They were able to see the after-effects of the democratic uprisings of 1848 and to compare the social conditions with those in America. On the steamer home they met George Bancroft, the historian, who proved a life-long friend.

Field's daughter, Isabella Field Judson, reported that the family life in New York was simple and smooth-running. During the summers there were rides to the picturesque

woods of Hoboken (called then the Elysian Fields), to Astoria on Long Island, and to Coney Island—"all very different places from those of the present time." Each morning the family cow was taken to pasture at Madison Square—a few blocks from the residence on Gramercy Square. This locality was soon to change radically as the city grew uptown. In 1850, a few months after the birth of a son, the entire family left New York in two horse-drawn carriages for a ride of four weeks, first to Guilford, then to Stockbridge, then on a night boat down the Hudson. These family activities illustrate the typical life of prosperous New Yorkers during Victorian days—the so-called "age of innocence."

In the summer of 1851, Cyrus and Mrs. Field toured the Southern, Western, and Northern states, seeing the Natural Bridge in Virginia, the Mammoth Cave in Kentucky, and an Indian tribe in Minnesota. They also participated in one of the famous boat races on the Mississippi; the steamer they were on threatened to blow up as all kinds of fuel, including hams from the cargo, were fed to the boiler. At Niagara Falls they stopped in the same hotel with "the Swedish Nightingale" Jenny Lind, outside whose door was usually a circle of admirers. Field's detailed expense accounts of these trips suggest that, even on vacation, he was not able to forget business methods and that, like most self-made Americans of the period, he was inclined to think in terms of the ledger. He outgrew this trait, however, as he became more a man of the world.

After paying the old debts and retiring from business in 1853, Field planned a long tour of South America with his friend, Frederick Church, the well-known painter of landscapes. He hoped that it would benefit his health, although he had to pay a hundred dollars extra premium on his life insurance because of the risks involved. They sailed up the Magdalena River in Colombia for six hundred miles and

spent four months on mule-back in the Andes. Coming back by way of the Pacific, they crossed the isthmus of Panama partly by railroad and partly on mules. Church made many sketches of the tropical wilderness for his landscapes.

While roughing it in the mountains, they became separated from their baggage by a flooded river and had to wait three weary weeks to regain it. Field became nervous at the delay, particularly because he wished to be back in Stockbridge in time for the celebration of his parents' golden wedding on October 31. He arrived just in time. Thirty-nine of the family dined in the old home, to which the father had returned from Connecticut. Cyrus and David had bought the house for the parents, now old but still active.

One reason for the South American trip was to permit a search for a lost brother, Timothy, who had enlisted in the navy and had sailed from New Orleans in 1835 on a ship never heard of again. There had been rumors that Timothy was living as a wealthy planter in South America. No trace of him was found, however, and he was finally given up as lost. On the voyage home, Cyrus met Marshall O. Roberts, a successful promoter of steamship and railroad lines, who afterward joined him in the telegraph venture.

Field brought back from the South a number of interesting exhibits, including native coats woven of grass, two dozen parrakeets, and a live jaguar. Most remarkable of all, was an Indian boy of fourteen—an impish son of a bull-fighter. The plan was to educate this boy and send him back as a missionary, but he proved too intractable. He broke the arm of the cook and caused consternation by ambushing members of the family in a dark hall and flourishing a knife. When Field was in England in 1856, the family sent the boy back to South America.

From these activities and attempts at recreation, it can be seen that Field was casting about for some worth-while inter-

est to divert his mind. He was not accustomed to idleness and was too young a man really to retire. As a matter of fact, the most active part of his life was ahead. Undreamed-of deeds and efforts awaited him; a vast new problem was coming up for solution. Hard work, discouragement, and fame were ahead. His career had scarcely begun.

Chapter Three

THE SIMPLE IDEA OF AN ATLANTIC CABLE

IN ONE SENSE it was somewhat strange and unexpected that a retired New York merchant should take up as his life work the promotion of the first Atlantic cable. Field had received no education in science or engineering, and his experience in finance had been limited to mercantile transactions. Yet he possessed an inheritance of Yankee ingenuity and adaptability, and he was a persuasive, magnetic type of man. People liked him and were swayed by his sanguine arguments. He was subject to fits of depression, it is true, but they were quickly over and his normal attitude was optimistic.

At the middle of the nineteenth century the electric telegraph was just becoming important. It was the first application of the electric current to prove of substantial value. Back in the days of Benjamin Franklin, electricity had been known only as static or spark electricity made by friction, and the public heard of it principally through so-called cures for disease and the part it played in the use of lightning-rods. About 1800, current electricity began to be heard of through the chemical experiments of the Italian professor, Alessandro Volta. It was then thought that the chief use of the current would be as an aid to chemistry in the laboratory.

As further researches were made, the inter-relations of electricity and magnetism were recognized, especially after the famous experiments of Michael Faraday in England in 1831, and similar investigations by Joseph Henry in the United States at about the same time. But engineers and inventors were slow to apply the theories of electro-magnetism. It was to be several decades before practical electric motors were produced. Electrical engineering was not yet established.

Samuel F. B. Morse, a portrait-painter who had found Americans inappreciative of art, had the idea in 1832 of sending messages by electricity. Henry, a Princeton professor, knew much more of the scientific theory of this than Morse. But the latter, disappointed in his ambitions of painting, experimented at New York University, where he taught art, and made a primitive recording telegraph that sent messages through a long wire. There was little public interest or encouragement for this at first; in fact, it was ridiculed.

In 1842, when Morse asked Congress for \$30,000 to demonstrate his invention on a large scale, the politicians were sarcastic. One of them stated that an appropriation might better be made in the interests of mesmerism. Taxpayers criticized the idea of public money being spent for the fantastic notion of a broken-down artist that he could "send messages by lightning." Just when Morse had given up hope of government aid, the bill was passed by a narrow margin. Field was to have a similar experience fifteen years later.

Even when Morse demonstrated the reality and reliability of a line from Washington to Baltimore, the telegraph was not recognized as an important factor in modern life. Years passed before the telegraph companies made any profit. The early offices established for the use of the public were little patronized. People did not realize the possibilities of this device for flashing messages across the country. The nation was changing from an agricultural to an industrial basis, but it was still conservative, despite the new railroads and steamships that were the wonder of the day.

Shortly after 1850, when the idea of ocean cables began engaging the imagination of a few dreamers, the telegraph was just coming into its own. At last its usefulness was being recognized as a method to regulate railroad trains and as a means of transmitting items for the newspapers. Professor Morse, who had grown old fighting for his patents, began at last to make some money after long years of poverty and ridicule.

There was a general speeding up of life and a disposition to try new ways, although skepticism was still strong. Political and religious subjects were then more likely to engage the attention of American people than applications of science. The Civil War was ahead, as were the great debates about Darwin's theories.

After the public recognition of the possibilities of the telegraph, however, the idea of quicker transmission of news and messages between Europe and America was a natural one to arise. About 1850 the idea seems to have come to two men in particular, Frederick N. Gisborne and John T. Mullock. The latter, who was Roman Catholic bishop of Newfoundland, wrote to a St. John's newspaper on November 8, 1850, concerning the feasibility of a telegraph line across the island, connected with Nova Scotia by a cable under the strait. This would shorten the transmission of messages between the two continents by forty-eight hours. Important news about wars, catastrophes, and financial matters would thus be facilitated and many costly mistakes avoided. Newfoundland and Ireland were apparently convenient way-stations for relaying news from steamers.

Gisborne was an English electrician working in Nova Scotia and New Brunswick to extend telegraph lines. He may have had the idea of a Newfoundland line before Mullock. In 1851 he obtained permission from the Newfoundland government for a telegraph line across the island, some four hundred miles long. To connect this line with the mainland, he talked of using carrier-pigeons or small steamers until a short cable could be laid under the strait.

After a survey through Newfoundland's rough country with the help of the government, Gisborne organized a company in 1852, which was granted exclusive rights to erect telegraph lines on the island for thirty years, with encouraging concessions of land upon the completion of the line. But in 1853, when he started laying such a line, his financial back-

ers stopped the funds and he was arrested and prosecuted for the company's debts.

Discouraged, Gisborne came to New York to raise more funds in January, 1854, and stopped at the opulent Astor House despite his shortage of cash. Matthew Field, who had employed Cyrus in the paper business and who knew Gisborne, asked his capitalist brother to have a talk with the ingenious Englishman. There were several conferences about the project and its possibilities. Matthew, as an engineer, had built railroads and bridges in the West and South; he was a practical man.

After one of these evening conferences, Cyrus, who at first had been indifferent and skeptical, was studying the large globe in his library. The thought occurred to him that if a short ocean cable was feasible, why could not a long one be laid between Newfoundland and Ireland. Next morning he wrote about this to Professor Samuel F. B. Morse at Poughkeepsie and to Matthew F. Maury, head of the National Observatory at Washington. He also consulted with his brother David and another neighbor, Peter Cooper, the venerable philanthropist.

Morse, then in his sixties, had suggested an Atlantic cable several years before. He now called on Field, the two became good friends, and Morse assisted the enterprise as electrician. The reply of Lieutenant Maury was still more to the point. Strangely enough, he had just written a long letter on the identical subject to the Secretary of the Navy, and he enclosed a copy of this, dated February 22, 1854, in his reply to Field.

This interesting letter reported that a United States brig had taken soundings during the previous summer between Newfoundland and Ireland. Fortunately the ocean bed had been found to be of moderate depth and comparatively smooth. This insured quiet water necessary for a telegraph cable. The specimens of the sea bottom brought up by the

special sounding apparatus had shown only an ooze of minute shells with no abrading sand or gravel. Maury considered these exceptional conditions to be unusually inviting for a deep-sea telegraph line—almost a sign from God favoring such a cable. He suggested, however, that there might be tremendous practical difficulties in getting a large ship to lay such a long wire in the heavy seas customary there. This “beautiful plateau” of the ocean bottom, “where the waters of the sea appear to be as quiet and as completely at rest as at the bottom of a mill-pond,” was known to underlie a turbulent and dangerous sea, where ships passed with difficulty amid fogs, storms, and icebergs. The word “plateau” meant that the ocean bottom at that place was not jagged or mountainous and was only moderately deep.

Encouraged by such favorable comments to believe that he could achieve a really great service for mankind, Field induced several of his well-to-do acquaintances to assist in forming a company. After winning over the benevolent man of affairs, Peter Cooper and his own shrewd brother David, he persuaded Moses Taylor, Marshall O. Roberts, and Chandler White to join the group. Later Wilson G. Hunt also came in. Taylor and Roberts were well-known capitalists; Cooper was New York’s leading citizen.

At first sight, as Cooper afterward explained, it seemed “a wild and visionary scheme” more suited for the inmates of a lunatic asylum than for practical New York financiers. From the very start, it was Field’s enthusiasm as a promoter that won support for the project, which was so unusual and chimerical that a man of exceptionally winning address was required to advance it.

Field little realized what he was getting into. His brother Henry, in his *Story of the Atlantic Telegraph*, wrote: “He thought little of a few thousands risked in an uncertain venture; but never imagined that he might yet be drawn on to stake upon its success the whole fortune he had accumulated;

that he was to sacrifice all the peace and quiet he had hoped to enjoy; and that for twelve years he was to be almost without a home, crossing and re-crossing the sea, urging his enterprise in Europe and America."

A start had to be made. Before the winter was over, Cyrus and David Field, with Chandler White, sailed from Halifax to St. John's in an uncomfortable little steamer that felt its way for three days along the stormy, frost-bound coast of Newfoundland. Bishop Mullock was among the officials who welcomed them. The island's Attorney General, Edward M. Archibald (later British consul-general at New York), assisted them ably. The rights granted to Gisborne's company two years before were now canceled, and a new charter was given to the projected New York, Newfoundland & London Telegraph Company for an exclusive monopoly for fifty years to lay submarine cables across the Atlantic from the shores of Newfoundland. Upon the party's return to New York, the Company was officially organized with Cooper as president, and a capital of a million and a half dollars was quickly subscribed. This first meeting was held at six o'clock in the morning of May 8, 1854, at the residence of David Dudley Field. It was held so early because they would not do business on a Sunday, and one of them had to leave the city later on Monday. The entire capital was subscribed before breakfast. Henry Field wrote of this fifteen-minute meeting, during which money was raised so readily: "Well was it for them that the veil was not lifted, which shut from their eyes the long delay, the immense toil, and the heavy burden of many wearisome years. Such a prospect might have chilled the most sanguine spirit." The capital which was originally subscribed eventually proved to be but a fraction of that necessary. Cyrus Field tended to over-simplify problems and to underestimate troubles.

This American company made its position strong and definite before taking up matters in the British Isles. It paid off

the debts of Gisborne's company (nearly fifty thousand dollars), and arranged for large land grants and other help from the Newfoundland Government. Fifty square miles of land was given to the Company, with a promise of as much more upon the successful laying of the cable. Despite the Newfoundland Government's limited income, it even voted a small amount for the telegraph financing. The legal and financial arrangements, supervised by David Dudley Field, gave the Company an intrenched position for the starting of this momentous enterprise.

As Henry Field pointed out in his *Story of the Atlantic Telegraph*, "There is nothing in the world easier than to build a line of railroad, or of telegraph, on paper." One has only to take the map and sweep his pencil along the line to be run. "A thousand leagues vanish at a stroke. All obstacles disappear." The Company's practical difficulties now began to arise, and Cyrus Field's luck turned bad again.

Field's entire career was a succession of ups and downs. Just after the Company was organized, his business partner and brother-in-law, Joseph F. Stone, died, so that Field was obliged to resume his old place at the head of the firm. A few weeks later his little son died. With a heavy heart he continued his double work. Early in 1855 he sailed for England to order the cable for connecting Newfoundland with Nova Scotia. In England he met the veteran telegraph promoter John W. Brett, who encouraged him while others smiled incredulously.

At that time the British were the leaders in cable work. Morse had laid a small copper wire in New York harbor in 1842, but the results were not encouraging, although his idea of insulating with hemp soaked in tar and pitch and surrounded by a layer of rubber was suggestive. In 1845, Ezra Cornell, for whom Cornell University was afterward named, laid a cable under the Hudson River between Fort Lee, New Jersey, and New York. This consisted of two cotton-covered

wires, insulated with rubber and enclosed in a lead pipe. It worked well for a few months until broken by the ice. Also a gutta-percha-covered wire across the Connecticut river at Middletown had operated successfully.

When Field was in England, the British already had telegraph cables operating under the English channel to the Continent, and between Scotland and Ireland. John W Brett, already named, was prominent in this work; he and his brother had suggested a cable to America several years previously. Other attempts to lay short cables were being made in several parts of Europe, some successful, others not. The deep waters of the Mediterranean proved difficult to contend with, especially steep declivities and deep ravines; and the strong tides and rough bottom around Ireland had given trouble. The first proposals for a cable across the Atlantic were met in England by skepticism and ridicule. The obstacles were thought to be overwhelming. The British were not, in general, inclined to be any too hospitable to Yankee promoters arriving in London with fantastic schemes requiring capital; they could sneer very effectively at such attempts. A few of them, however, recalled the successful operation of a 400-mile telegraph under the Black Sea during the Crimean War; this was a single wire, insulated only by gutta-percha—the whole no thicker than a lead pencil.

Besides Brett, another British proponent of an Atlantic cable was Professor William Thomson of the University of Glasgow, afterward Lord Kelvin. Even before Field appeared in England in 1855, Thomson had written to the Royal Society in London expressing support for an Atlantic telegraph and suggesting means of calculating the effect of electricity in a cable. Later Thomson was to act as technical adviser in the arduous work of laying the first deep-sea cable. His name will always be associated with that achievement, although, of course, it was only one of many activities that marked his long career as an outstanding leader in nineteenth-century

science. Brett, Thomson, and a young engineer named Charles T. Bright were pillars of strength to Field in his early negotiations in England.

The attention of the promoters now turned toward Newfoundland. This island, which is larger than Ireland, has the wild scenery and barren expanses of Scotland. It was, and still is a sparsely-settled country. Most of the inhabitants live in the deeply-indented bays of the eastern coast, remote from other settlements. The capital, St. John's, is hundreds of miles from any large city. The route of the cross-island telegraph was along the desolate and inhospitable south shore. This harsh environment, the remoteness from any source of supplies, and the primitive attitude of the people combined to make a difficult task of any extensive enterprise undertaken there. When representatives of foreign capital came to St. John's for concessions to develop the island's resources, they often became involved in local politics, were hindered by neighborhood animosities, or were opposed by the tendency of islanders to feel antagonistic toward rich strangers. Many an agent of foreign capital who has gone to St. John's with high hopes has been outwitted by the lawyers and business men of the island who put their personal aims above the common good. Cyrus Field, shrewdly advised by David Dudley Field, avoided much of this.

When the New York, Newfoundland & London Telegraph Company began the task of connecting St. John's by wire with Nova Scotia, it was estimated that only a moderate expenditure and a year of time would be required for that part of the work. It actually took over two years and most of the Company's capital. Severe troubles were encountered. The construction of the land line across the island, even under the experienced supervision of Matthew Field, was a wearisome and arduous job because of the wild nature of the country and lack of the most elementary conveniences, such as roads and supplies. When the first attempt was made to lay the

cable between Newfoundland and Nova Scotia, rough weather and perverse human nature interfered. It was a combination of comedy and tragedy.

This was the age of ceremonious initiations and official displays at the starting of public works. A friendly party of prominent persons interested in the new telegraph sailed from New York in August of 1855 on a palatial steamer to help with the cable-laying. They assumed that it would be only a pleasant outing. On board were Cyrus Field and his brother Henry, Peter Cooper, Professor Morse, Bayard Taylor (famous traveler and writer), John Mullaly (a reporter), clergymen, artists, and a number of ladies. After one or two stops for social calls and receptions, the steamer succeeded in locating the little sailing bark that had brought the cable from England. Samuel Canning (later Sir Samuel Canning), of whom more will be heard, assumed charge of the engineering task now undertaken.

The steamer was to take the bark in tow just off the Newfoundland coast for the actual work of laying the cable. But the captain of the steamer had become offended because the master of ceremonies had placed a clergyman at the head of the table instead of himself and, in Cooper's words, "he became as stubborn as a mule." After fastening the end of the cable to the telegraph-house on shore, the party ordered the captain to tow the bark across the strait. The captain promptly ran the steamer into the bark and almost wrecked it; later he got into other difficulties and entangled the towing-cable in the steering-wheel. The bark nearly foundered on a reef.

Once under way, the rebellious captain refused to steer by the signal-marks placed on shore. "I know how to steer my ship," he declared; "I steer by my compass." A lawyer from the party drew up a paper warning him, but he merely steered out of the course in the other direction. When twenty-four miles of cable had been laid, they were only nine miles from shore, so badly had the captain steered. A storm then came

up, and the cable had to be cut after forty miles had been paid out. The formerly gay party returned to New York amid pessimism and gloom.

Undaunted, Cyrus Field sailed again for England to order a new cable. His sanguine nature quickly conquered fits of depression. Next summer, having learned not to use a sailing vessel in the work and to avoid social displays, the Company succeeded in laying an eighty-five-mile cable between Newfoundland and the mainland. A land extension of a hundred forty miles was built across Cape Breton to connect the cable with Nova Scotia's telegraph system. Expensive problems were still being encountered in building the four-hundred-mile line across Newfoundland, as roads and settlements had to be made in the wilderness. Matthew Field organized a force of six hundred men there amid difficulties of the most discouraging kind. Over a million dollars was spent on these American extensions, of which Field contributed over two hundred thousand. It was now advisable to enlist British cooperation, both in finance and technique. Field particularly wished to talk with John W. Brett, the father of submarine telegraphy in England, who had laid the first cable across the English channel.

In the summer of 1856, Field, with his family, was in England conferring with such technical advisers as Brett, Michael Faraday, Charles T. Bright, and Dr. Edward O. W. Whitehouse. Before leaving the United States, he had persuaded the Washington Government to take more soundings between Newfoundland and Ireland, similar to those of which Maury had written him two years before. Later Field persuaded the British Admiralty to take additional soundings along the same route. He wished to get as much information as science could give him. Up to this time the Bretts and the Brights were the leading authorities on submarine telegraphs and had laid lines off the British coast. They helped Field but considered themselves the pioneers.

There were decisive questions of technique to be answered before progress could be made. The longest telegraph cable hitherto laid successfully was a little over a hundred miles long. An Atlantic cable would be two thousand miles long, submerged to depths of nearly three miles. Could such a line really be laid; what size should it be and how insulated; once laid, could an electric charge be sent through it? There were widespread doubt and criticism. Field was called a visionary fool who was wasting time and money. Professor Sir G. B. Airy, F.R.S., the Astronomer Royal, announced that it was mathematically impossible to submerge a cable safely at so great a depth; and that, even if it were possible, no signals could be transmitted through so great a length. One suggestion received was to fasten the cable to buoys; others were still more ridiculous. Bright and Whitehouse had done some real research, however; Brett and Bright had actually laid short submarine cables that worked. On the other hand, the noted bridge-engineer Robert Stephenson declared that the mid-Atlantic depths would be too much for any practical cable-laying.

Soon after arriving in England, Field wrote to Lord Clarendon, the Foreign Secretary, about his plans and hopes. He was requested to appear for an interview. As Professor Morse, electrician for the American company, was also in London, the two went to the Foreign Office together. Field's determined attitude impressed the officials, who realized the advantages that a seafaring nation would derive if ocean cables could be laid and operated. The original suggestions of Bishop Mullock and Gisborne, however, were kept in mind; and the British officials arranged with the Cunard line that mail steamers between Liverpool and the United States might receive and throw overboard, while off the Irish shore and the tip of Newfoundland, cases containing messages to be handled by the telegraph company's vessels for quick dispatch. This was never done, however, to any great extent.

A depressing blow came to Field at this time. He took his family for a visit to Paris, and a favorite sister of his died there. Suppressing his sorrow, he now proceeded to promote in England a new company to lay the cable and to work in conjunction with the American company. Late in 1856, the Atlantic Telegraph Company was organized with a capital of three hundred fifty thousand pounds, divided into three hundred fifty shares of a thousand pounds each. After addressing the chambers of commerce in Liverpool and Manchester, Field, accompanied by the helpful Brett, was able to arouse the sporting instincts of the British, so that they took all except eighty-eight shares. Prominent persons like Thackeray and Lady Byron subscribed; even Glasgow citizens took a few shares despite Scottish caution and canniness.

The eighty-eight shares which Field carried to New York, about a quarter of the total, were in his name, but he hoped to sell most of them to American investors. The American subscriptions were disappointing, however, and Field was left as the largest stockholder. It is interesting to note that an American residing abroad, George Peabody, the philanthropist and banker, became a director of the Company, along with Professor William Thomson and several Englishmen. The company that laid the cable was predominantly British although the chief promoter was an American. The firm of George Peabody & Company subscribed for ten shares of the stock; Brett took twelve and was the second largest owner; but Field had over sixty in his name. He arrived in New York on Christmas day. Naturally he wished to spend some time with his family and try to dispose of part of his stock. Instead, he had to hurry off to Newfoundland on the Company's business, traveling through winter storms and ice.

The British Government was disposed to be generous in its aid to the project. It agreed not only to furnish ships for taking soundings and laying the cable, but also, upon the completion of the line in good working condition, to pay an

annual minimum subsidy for its official messages. When the Company's officials tried to induce Congress also to lend a ship to help lay the cable and to grant a subsidy of seventy thousand dollars a year, opposition arose. Field, who had fallen ill in Newfoundland from overstrain, was hurriedly called to Washington. He found the American legislators less helpful and sporting than the British officials had been. The aristocratic nature of the British Government permitted reasonable power to intelligent leaders for assisting beneficial developments; the American idea was scattered responsibility and rough-and-tumble debates.

The request made of the Government was a reasonable one. It asked only for aid equal to that granted in England. The criticism at Washington concerned the British terminals of the cable and the wealth of some of the New York supporters, such as Peter Cooper, Moses Taylor, and Marshall Roberts. There was talk of laying a European cable directly from the shore of the United States. Field pointed out that such a line would have to be over a thousand miles longer than one from Newfoundland, and that the ocean bed to the south was deeper and more jagged. Despite his illness, he talked to nearly every member of Congress.

Finally the bill passed the House by a majority of nineteen votes. Two weeks later, on March 3, it passed the Senate by one vote, but was said to be unconstitutional. Field quickly sought the Attorney General and asked for a prompt decision on this point. It was favorable. On the morning of March 4, 1857, a few hours before he retired from office, President Pierce signed the bill.

The hard fight for government aid to a pioneering effort aimed to benefit the nation had been won by as narrow a margin as was the case fifteen years before, when Professor Morse had given up hope before Congress in its late session voted funds for trying out the telegraph that he had invented. Henry Field wrote of the difficulties in getting Congress to

help the cable project: "The Atlantic cable has had many a kink since, but never did it seem to be entangled in such a hopeless twist as when it got among the politicians."

Because of the light shed on the state of American intelligence of that period, it is interesting to review some of the arguments in Congress when the question of aid to the cable enterprise was debated. President Pierce was favorable to the bill when it was drawn up by Senator William H. Seward of New York, as was the Secretary of State. But, as Seward said afterward, "the jealousies of parties and sections in Congress forbade them to lend it their official sanction and patronage." It is the nature of politicians to make complications and to befog a clear issue. All kinds of objections can be manufactured against a new idea, especially by jealous and ignorant men.

The following extracts from the debate indicate the views of various members of the Senate of the time. Bayard of Delaware, speaking in favor of the bill, said: "It is a mail operation. It is a Post-Office arrangement. It is for the transmission of intelligence. . . . I hold it, therefore, to be as legitimately within the proper powers of the Government, as the employing of a stage-coach, or a steam-car, or a ship, to transport the mails." When the objection was raised that a subsidy of seventy thousand dollars a year was a large sum to guarantee, Bayard replied that England alone paid nine hundred thousand dollars a year for mail service to the United States.

As to the expense of furnishing a ship of war to help lay the cable, Senator Douglas of Illinois said: "Will it cost anything to furnish the use of one of our steamships? They are idle. We have no practical use for them at present. They are in commission. They have their coal on board, and their full armament." This point was emphasized further by Rusk of Texas, who though a Westerner was an active proponent of the bill. He said: "I think that is better than to keep them rotting at the navy-yards, with the officers frolicking on shore.

. . . I should be willing to vote two hundred thousand dollars" instead of "the very moderate subsidy asked for, only seventy thousand dollars a year."

Much of the opposition came from Southern members, such as Mason and Slidell, of whom more will be heard later. Butler of South Carolina exclaimed: "This is simply a mail service under the surveillance of Great Britain." Jones of Tennessee, in a patriotic outburst, said: "I do not want anything to do with England or Englishmen!" Hunter of Virginia asked: "What security are we to have that in time of war we shall have the use of the telegraph as well as the British Government?"

To this Seward of New York replied: "My own hope is, that after the telegraph wire is once laid, there will be no more war between the United States and Great Britain. I believe that whenever such a connection as this shall be made, we diminish the chances of war. . . . If we do not make it, the British Government has only to add ten thousand pounds sterling more annually, and they have the whole monopoly of this wire."

As to the possibility of war, another member, Hale of New Hampshire, pointed out that such undue fear of war might paralyze all improvements along the Great Lakes. "The city of Detroit will have to be abandoned, beautiful and progressive as it is, because in time of war, the mansions of her citizens there lie within range of British guns. What will the suspension bridge at Niagara be good for in time of war? If the British cut off their end of it, our end will not be worth much."

This favorable point was also emphasized by Benjamin of Louisiana, despite his Southern bias. He said: "Again, Sir, I say, if Great Britain wants it for war, she will put it there at her own expense. . . . I feel a glow of pride when I see these triumphs of science, by which mind is brought into instant communication with mind across the intervening

ocean. . . . Scarcely can a gun be fired in war on the European shore ere its echoes will reverberate among our own mountains."

Such were Congressional debates in the 1850's. Apparently politics change very little through the decades. In this case, the more distinguished and broad-minded members were in favor of the project; the sectional and narrow-minded ones were opposed. Senators Seward and Douglas were among the celebrated men of their time; Senators Hale and Rusk also were well known. It is interesting to note that when the bill asking for a charter was debated in the English House of Lords, criticism was made that it gave to the United States important advantages that properly should be reserved for Great Britain. Lord Redesdale, for example, stated that it would have been far better policy if the British had undertaken the whole guarantee themselves, rather than allow a foreign government to join it. To this Lord Granville said that this telegraph was intended to connect two great countries, and it seemed only reasonable that both should have the same rights.

The political and financial difficulties were finally smoothed out, and the stage was set for action on other problems that awaited solution. The technical aspects of the enterprise were underestimated at first. It was not appreciated that a small fault in the engineering or electrical procedure could nullify a splendid financial scheme or a cordial political agreement. As was later demonstrated by costly mistakes and depressing failures, a cable designed too small in diameter, or an electric current too strong and powerful, could wreck a year's work of a thousand men. Even a puncture in the cable by a nail or a piece of wire could set progress back discouragingly.

The initial attitude was to trust that nature would be kind. The favorable soundings of the ocean bottom had encouraged this trust. Between Ireland and Newfoundland the

ocean bottom was much smoother and more moderate in depth than to the south, for example around the Azores, where jagged peaks and valleys distorted the depths of the sea. The only sudden change in the bottom along the northern route was about two hundred miles off the coast of Ireland, where there was a "drop-off" from the shallow seas of the island to the depths of mid-ocean. Later, however, even this change in depth was found to be much less sudden than had been supposed, and no particular trouble was experienced in the cable-laying at this place, especially if the steamer proceeded slowly and allowance was made for slack in the cable. If all the technical factors had been as favorable as the bottom of the sea, the undertaking would have been much easier. For example, soft shells of microscopic animals covered the sharp rocks and rough sand of the ocean depths, as if put there by Providence. These shell-fish did not live in that enormous pressure but had dropped there after death in the shallower waters above—a quiet shower of minute shells to cushion the cable.

Among the technical difficulties, those relating to the electric impulses to be sent through a two-thousand-mile cable were highly-specialized problems. An electric impulse does not flow along such a long insulated conductor without complications; it is in fact very temperamental. There has to be perfect insulation to keep the current from dissipating itself in the salt water. The insulation thus lies between two good conductors—the copper wire within, and the salt water without. The cable, consequently, becomes a condenser, like a huge Leyden jar. Furthermore, such a long wire has great tendency toward self-induction, which acts to slow up the signals sent through it. A third disturbance comes from the irregular earth currents between widely-separated parts of the earth's crust. These were the problems on which Professor Thomson and Cromwell Varley worked and studied—problems of great scientific difficulty.

The Morse telegraph, so successful on land, was out of the question in the ocean, where stimulation by automatic relays was impossible. Even the Morse signals of dots and dashes could not be used, as they would not pass through so long a wire without relays to add impulse to the long line. For this reason, experts in land telegraphy were more or less helpless in advising on ocean problems, and much pioneer research had to be done.



TELEGRAPH HOUSE, TRINITY BAY, N. F., IN 1857

Chapter Four

ENGINEERING DIFFICULTIES

MOST OF THE technical work affecting the cable was done in England, where it was made. The question of how large the cable should be, and how it should be designed, was a critical one. In the limited experience of the British engineers with short submarine lines, too light a cable had been carried away by the tide, and too heavy a cable had been found difficult to unwind from its drum and to pay out over the side of a ship. The aim was to get flexibility and strength combined. A thick insulation was necessary to prevent the electrical impulse from being dissipated in the water, whereas a land telegraph line requires only glass supports to insulate it.

The short cable laid in 1856 between Newfoundland and Nova Scotia was the first to be composed of several small copper wires, instead of a single larger wire. This design was flexible and insured that a flaw in a single wire would not stop the operation of the cable. For the insulation, there was fortunately available from Asia a new vegetable gum called gutta-percha and believed superior to rubber.

It was known, however, that a gutta-percha covering tended to absorb some of the electricity flowing through the copper wires. Experiments had been made to overcome this static loss (which was due to induction) by a series of opposite currents or waves of electricity. The Bright brothers and Professor Thomson had worked on this problem. The matter was obviously not a simple one.

As for the size of the cable, Professor Morse reported that large coated wires beneath the water or the earth are worse conductors than small ones. The great Faraday had stated that the larger the wire, the more electricity is required, and

the greater is the retardation. These opinions induced the management to order a rather small cable, not so large in diameter as one used in the English channel or one in the Mediterranean.

Morse and Faraday were wrong in this respect; the engineer of the cable enterprise, Charles T. Bright (afterward Sir Charles Bright) was right, despite his youth, in advocating a heavier cable—as was afterward proved. One argument against too stiff a cable was that Brett had recently lost a cable in the Mediterranean between Sardinia and Algeria, when it became unmanageable in the laying because of its weight.

The cable as finally designed had seven copper wires in a strand at the center, each wire about the diameter of a darning needle. Around this strand of seven wires was insulation of gutta-percha sufficient to give a diameter of three-eighths of an inch to the core. Around this core was a layer of hemp saturated with a mixture of tar, pitch, linseed oil, and wax. All this was sheathed spirally with an armor of iron wires to protect against abrasion, and the completed cable was finally drawn through another mixture of tar. The diameter of the completed cable was between five-eighths and three-quarters of an inch. For the extra-heavy ends of the cable at the shore terminals, more insulation and heavier sheathing were used to protect against rocks and other disturbances. The cost of the 2500-mile cable was well over a million dollars. It was made in two halves at two separate factories in England, each half being taken by a different ship when finished. To test the electrical continuity, the halves were connected, when on the ships, by a short piece of cable and a current sent through the entire length. This test proved satisfactory.

It was decided to start laying the cable from Valentia bay, Ireland. To show Anglo-American good-will, the American ships would lay the British end, and the British ships the American end. The splendid American frigate, the *Niagara*,

which had been stripped of its guns, was to lay the first half from Ireland to the middle of the Atlantic. Then the other half of the cable was to be spliced on and laid to Newfoundland by the smaller British frigate, the *Agamemnon*, a screw-propelled, three-masted veteran of the Crimean War. This was still the day of wooden ships; the *Agamemnon*, for example, was of stout oak shaped in the old built-up style that had changed so little during the centuries. The *Niagara*, of over 5000 tons, was screw-propelled and could make ten or eleven miles an hour. The attending American ship, the *Susquehanna*, was an old-fashioned side-wheeler. These two ships were the pride of the American navy, and the *Agamemnon* was revered as a hero ship for its bombardment of Sebastopol in southern Russia. Another British ship, the *Leopard* attended the *Agamemnon*. All these ships used sails to supplement their steam power. Incidentally, while in England at this time, Field went down to Blackwall on the Thames to see a huge ship then being built. It was the *Great Eastern*, which eventually was to lay the cable; the 22,500 tons of this monster exceeded the tonnage of the entire cable fleet of 1857.

There were banquets, receptions, and speeches before leaving Ireland. Queen Victoria's representative, the Lord Lieutenant of Ireland, who was then the Earl of Carlisle, came down from Dublin and was entertained elaborately by the local Knight of Kerry, Peter Fitzgerald, who was lord of the manor for miles around the cable site. The harbor of Valentia was studded with smaller vessels, decked with bunting, as visitors flocked in to see the inception of so illustrious an event. It is interesting to note that the Ireland-Newfoundland route became similarly important several generations later for airplane flights, and that crowds then gathered to watch "take-offs" in much the same spirit as in 1857.

The speech of Lord Carlisle, representing the Queen, in response to a toast shows the spirit of the occasion. He said in part: "I am probably the first Lieutenant of Ireland who

ever appeared upon this lovely strand. . . . Whatever disappointments may possibly be in store, it would be criminal to feel discouragement. . . . However, upon this rocky frontlet of Ireland, at all events, today we will presume upon success. We are about to establish a new material link between the Old World and the New. . . . I do not compliment them with the idea that they are to efface or dim the glory of that Columbus, who, when the large vessels in the harbor of Cork yesterday weighed their anchors, did so on that very day three hundred and sixty-five years ago—it would have been called in Hebrew writ a year of years—and set sail upon this glorious enterprise of discovery. . . . Let us pledge ourselves to eternal peace between the Old World and the New."

The reference to possible disappointment and difficulties in the Lord Lieutenant's speech indicates that a large measure of skepticism about the project still remained in the consciousness of thoughtful men, despite the festivities and the cheers. The Lord Lieutenant spoke again and referred to the Irish in America in the following words: "Many of your dear friends and near relatives have left their native land to receive hospitable shelter in America. . . . If you wished to communicate some piece of intelligence straightway to your relatives across the wide world of waters—if you wished to tell those whom you know it would interest in their hearts of hearts, of a birth, or a marriage, or, alas, a death, among you, the little cord, which we have now hauled up to the shore, will impart that tidings quicker than the flash of lightning."

In accordance with the custom of the times, the vicar of the parish offered a prayer, in which he said: "Control the winds and the sea by thy Almighty power and grant us such favorable weather that we may be enabled to lay the cable safely and effectually." This had a faint resemblance to ancient invocations to the Greek gods, as recorded, for example, in the *Odyssey*. In fact, the gathering of the ships on the shore of this green island was not unlike such events as Homer had

chronicled three thousand years before, except that the purposes were different. The Greeks had sought the rescue of a beautiful woman and the satisfaction of a successful war with old military and commercial rivals; the Anglo-Americans were trying to facilitate the transmission of intelligence for effecting better understanding among nations. Curiously enough, the name *Agamemnon* of the principal British ship engaged in this work recalled the renowned attack on Troy in the imperishable story of Homer.

After an official of the Atlantic Telegraph Company had expressed the thanks of all present to the Lord Lieutenant for gracing the occasion with his presence, there were calls for Cyrus Field. With his customary generosity he said: "If ever at the other side of the waters now before us, any one of you shall present himself at my door and say that he took hand or part, even by an approving smile, in our work of today, he shall have a true American welcome." Naturally this kindly sentiment pleased the volatile Irish audience. The Knight of Kerry, good Peter Fitzgerald, wrote a personal note to Field saying that the latter had "stolen the hearts" of his wife and children and of every friend with whom he came in contact. There was obviously some blarney in the air.

The *Liverpool Post* described vividly the scene on the Irish shore: "For several hours the Lord Lieutenant stood on the beach, surrounded by his staff and the directors of the railway and telegraph companies, waiting the arrival of the cable, and when at length the American sailors jumped through the surge with the hawser to which it was attached, his Excellency was among the first to lay hold of it and pull it lustily to the shore." *The New York Herald* of three weeks later said that "never before was such a scene presented in Valentia bay; the face of the poorest spectator beamed with joy."

The London *Times* of a fortnight earlier had described the *fête champêtre* following the storage of half the cable on the British *Agamemnon* as it lay in the Thames: "All the details

connected with the manufacture and storage of the cable are now completed, and the conclusion of the arduous labor was celebrated yesterday with high festivity and rejoicing. . . . The festival was held in the beautiful park which had been obligingly opened by Sir Culling Eardley, near Erith. . . . The honorable baronet has all along evinced the liveliest sympathy with the undertaking. . . . The three centre tables were occupied by the crew of the *Agamemnon*, a fine, active body of young men, who paid the greatest attention to the speeches, and drank all the toasts with an admirable punctuality, at least so long as their three pints of beer per man lasted; but we regret to add that, what with the heat of the day and the enthusiasm of Jack in the cause of science, the mugs were all empty long before the chairman's list of toasts had been gone through. Next in interest to the sailors were the workmen and their wives and babies. The latter, it is true, sometimes squalled at an affecting peroration, but rather improved the effect. . . . It was a momentary return to the old patriarchal times." A later number of the *Times* reported satisfactory tests of the cable-laying machinery off the Isle of Wight on the way to Ireland.

Early on the morning of August 6, 1857, the squadron of ships sailed with flying flags out of the rocky bay. Before they had gone five miles the cable caught in the machinery and parted. The *Niagara* returned, repaired the damage, and resumed her course more slowly. The paying-out machinery, to which many anxious thoughts had been devoted, rumbled like "an old coffee-mill," as Henry Field said, but the miles ticked off as a thousand eyes watched the process carefully. "Stars came out on the face of the deep, but no man slept," continued this commentator.

Cyrus Field was on board with Professor Morse, the electrician of the American company. The United States navy regulations did not permit newspaper correspondents, but a *New York Herald* reporter, John Mullaly, was there in the capacity

of Morse's secretary. Two London papers were also represented. Mullaly later wrote a book about the expedition, *The Laying of the Telegraphic Cable*. He had also accompanied the Newfoundland party two years before.

Morse himself was seasick much of the time, as was also Field, who had been ill on shore. The young chief engineer of the British company, Charles T. Bright, was also on board, with Samuel Canning and other assistants. Dr. Whitehouse, the electrician of the British company, stayed at Valentia.

Continual telegraphic communication was maintained along the newly-laid cable between Valentia and the *Niagara*. At one stage, for some obscure reason, the cable messages stopped for two and a half hours, and the engineers were so disappointed that they almost cut the cable in despair. Then the electric impulses resumed as mysteriously as they had stopped, and everyone cheered up. But greater grief was in store, even though the "drop-off" two hundred miles out was passed successfully and deep water gave no trouble at first.

Four days out, when three hundred eighty miles had been laid to depths up to two miles, the cable snapped. The powerful brakes had been manipulated too suddenly as a wave rose under the ship, increasing the weight and strain. A cry of anguish ran through the squadron; the officials were stunned. Half a million dollars in material and labor had vanished beneath the waves.

The ships sorrowfully returned and discharged their cargoes. The *Niagara* sailed back to America. Any continuation of the project would have to be postponed for another summer. Before Cyrus Field left England, however, he persuaded the directors of the British company to increase the capital and to order seven hundred miles of new cable. Depressed at first, he was not a man to let one failure deter him from his aim; as the son of the Reverend David Dudley Field, he had inherited steadfast and unswerving resolution. Skepticism had increased, however, since the loss of the cable, and many

persons looked upon the whole affair as one of the unfulfilled dreams of the romantic life of the sea.

When Field arrived in New York, more bad news awaited him. His troubles had a habit of coming in battalions. The panic of 1857 had swept over the country, as the impetus from the California gold boom and the Crimean War brought reactions. While he was at sea, his mercantile firm had been forced to suspend, with debts of six hundred thousand dollars, although a sum of over half of that amount was due the firm from other bankrupt operators. Such unmerited rebuffs in business made him seem at times brusque and heartless in his mercantile policy. Often such an attitude was merely the consequence of his impatience and frustrated hopes.

He settled with his creditors by giving up goods from his store or signing notes at seven percent interest. Before two years elapsed, these notes were all retired. Given any kind of a chance, Field had quick powers of recuperation, and his firm enjoyed much good-will despite the criticism of his wasting time on a wild-goose chase across the Atlantic.

After a visit to Washington to ask the Government for the use of the naval vessels for another attempt, Field sailed for England early in 1858. Additional funds were raised with difficulty; a hundred thousand pounds were required. The Atlantic Telegraph Company, recognizing the need for unified leadership and for improvements in the apparatus, asked Field to act as general manager. Although he agreed to this, he declined remuneration. The minutes of the directors' meeting said on this point: "It was unanimously resolved to tender him, in respect to such services, the sum of one thousand pounds over and above his travelling and other expenses as remuneration."

Field had brought William E. Everett, formerly chief engineer of the *Niagara*, to devise less cumbersome machinery for laying the cable. With the cooperation of British engineers, a smaller and more flexible machine was perfected—a

design that weighed only a quarter of the former one. Field had to act as a dictator and undoubtedly offended some of the British associates but he was impatient for results.

It was gradually recognized that laying a cable two thousand miles long in water up to three miles deep was largely an engineering problem. The British engineers, overawed by the magnitude of the task, had originally designed a machine too heavy and ponderous in its action. Handling a cable that was actually too light and weak, this bulky apparatus had stopped progress and delayed matters a year. It is not strange, however, that technical mistakes were made at first; it is surprising that not more of them were made, when the pioneer nature of the work is considered. There was some working at cross purposes, but Field managed to bring together the various factions. He assumed a domineering attitude for the time.

To help improve the new cable-laying machine, a gentleman in London, named J. G. Appold, suggested self-releasing brakes similar to an apparatus used in jails and prisons. These could be adjusted to stand only a regulated strain before they released themselves. As adapted by Bright, this device prevented a sudden check and insured smoother operation. It was an important aid. When the new machine was demonstrated before a group of engineers, their opinion was that a great advance had been made.

As an instance of the unforeseen difficulties constantly arising in such an unprecedented undertaking, news came to London that the American steamer, the *Susquehanna*, which had assisted the *Niagara* during the first attempt, could not come again, as it was in the West Indies and yellow fever had broken out on board. Rising to the occasion, Field called a cab, drove to the British Admiralty, and sent in his card to Sir John Pakington, First Lord of the Admiralty. Admitted at once, he explained his predicament, saying that although he was ashamed to ask for more aid, another ship had to be

found quickly. Sir John, with genuine British courtesy, replied that his Government was pressed for ships to convey troops to Malta, but he would see what he could do. In an hour or two he sent word that Her Majesty's ship *Valorous* had been ordered to replace the *Susquehanna*. The *Gorgon* was replacing the *Leopard* of the year before in the British arrangements.

There was over three thousand miles of cable to load on the *Niagara* and the *Agamemnon*. This included a new length of seven hundred miles and a thirty-nine mile piece that had been recovered from the lost cable of the year before. Placing the cable on the two ships was a task of no small difficulty. A hundred and sixty men, divided into four groups to relieve one another, labored day and night during all of April and most of May. The cable had to be coiled carefully on large cones to avoid injuring the insulation.

Preliminary tests were conducted in the Bay of Biscay, including splicing and lowering the cable and electric continuity. The new mirror "galvanometer" invented by William Thomson was carefully tested. This replaced the Morse system with its familiar relays, and eliminated momentum and inertia by a delicate needle and a tiny mirror to reflect a ray of light. This was only one of the many services of Professor Thomson to the work. At this time, he insisted upon very pure copper being used in the cable and kept the tests to a high standard. Not only was he a good theorist; he had practical Scottish sense. Years later he invented the slender needle that is still seen in cable offices tracing ink-marks on a ribbon of tape, and which replaced the mirror galvanometer.

A new plan of procedure in the cable-laying was to be tried at this time. Instead of starting the work from the coast of Ireland, the two ships carrying the cable were to meet in mid-ocean, splice the two halves together, and sail apart, one for Ireland and the other for Newfoundland. This method had been favored by Bright the year before, but the other

officials had over-ruled him in order that constant communication could be maintained with the telegraph-office on the Irish shore. Such communication was not really necessary, but there was a reassuring novelty in being able to send messages from shore to a ship hundreds of miles out in the ocean during the work.

An early start was made this year in June, as the weather authorities considered that month the most favorable for calm seas. Like many of the other vicissitudes of the project, this prophecy proved wrong. On June 10, the "wire squadron" sailed from Plymouth "with fair skies and bright prospects." After two days of good weather, a terrific storm blew up and continued furiously for over a week. The *Agamemnon* in particular almost foundered. The great weight of cable was a serious handicap. A large coil on deck not only made the ship top-heavy but actually broke loose and threatened to hurtle through the side; the cable was badly snarled. Almost by a miracle the hard-pressed vessel, battered and leaking, kept from turning turtle and survived the terrible pounding. The crew were exhausted and many were incapacitated.

The storm finally ended, and fifteen days after leaving Plymouth the four ships came together at the appointed meeting-place on a sea so tranquil as to seem unnatural. After many repairs and adjustments the cable was spliced, and the ships separated. Only six miles had been paid out when the *Niagara's* end, which had become too slack, broke near the machine that was paying it out.

The two ships returned, made a fresh splice, and started again. Everything ran smoothly until about eighty miles had been laid. Then Professor Thomson of the *Agamemnon*, coming on deck just before dawn, reported something wrong in the electrical continuity. At the same time on the *Niagara* Cyrus Field discovered a similar fault. The cable had parted somewhere, but just what happened always remained a puz-

zling mystery. Probably the break was at the bottom of the sea. There was even another failure near the *Agamemnon* as the brakes were applied. These were discouraging conditions.

Their enthusiasm spoiled, the officials resolved to keep trying and to take the utmost precaution in every way. Once more the ships met, spliced ends, and sailed apart, proceeding slowly and carefully. Everyone on board was by this time in a chastened mood. Men went quietly about their duties with sober faces and measured steps. The fuel supplies were getting low, and the stale beef to which the meals were reduced was almost inedible.

On this attempt, conditions seemed more favorable. The weather was mild, and the machinery ran smoothly. But suddenly, when the ships were over two hundred miles apart and there was only a small load on the *Agamemnon*'s end, the cable broke close to the ship. There apparently had been some injury to the cable, due to the disturbances in the storm.

Despite qualms and fears, the distressed *Agamemnon* and the *Valorous* headed gamely once more for the place of rendezvous, after twenty days at sea. Through high seas and thick fogs, the two British ships sought for the others. It finally became evident that these had returned to Ireland; so the search was abandoned. The *Niagara* reached Queenstown on July 5, a week before the *Agamemnon*. Thus ended a difficult expedition against dangerous odds.

The most heroic of efforts had been made. The best technical authorities had cooperated. Knowledge, skill, and hard work had been contributed without stint; money had been spent freely. The result, after repeated trials, was failure. Most men would have recognized defeat and have admitted that the problem was too much for them. Cyrus Field was saddened, but not convinced that he was beaten.

Chapter Five

CYRUS THE GREAT

AFTER THESE REPEATED and heroic efforts to lay an Atlantic cable, in which several million dollars had been practically tossed into the ocean, the pessimists had their inning. Immediately after the *Niagara's* arrival in Queenstown, word spread that the expedition had failed. Cyrus Field landed and set out for London to meet the directors. The chairman, Sir William Brown, sent word from Liverpool to sell the cable and abandon the undertaking. The vice-chairman, who had formerly shown unusual enthusiasm, resigned his office and left the meeting. The prospect was anything but cheerful.

Undismayed, the remaining directors resolved, like Robert Bruce, to try once more and to do so at once. Thomson and Bright, the technical advisers, agreed that the feat was possible. There was still sufficient cable left for a successful laying. The order to go ahead was given. Curtis Lampson, who acted as deputy-chairman and stood firm for another trial, was eventually made a baronet by Queen Victoria for thus sticking so loyally.

On July 17, with no cheers, the ships sailed from Queenstown. They were to proceed individually, rather than as a squadron, to the rendezvous. This repeated attempt to conquer the Atlantic was generally regarded as a "mad freak of stubborn ignorance." Derision and pity were expressed by people who a few months before had sent good wishes and God-speed.

The ships arrived on different days at the rendezvous. The *Niagara* was there on July 23, the *Valorous* on the 25th, the *Gorgon* on the 27th, and the *Agamemnon* on the 28th. Experienced hands made the splice. The *Niagara*, with Cyrus

Field and William Everett on board, headed for Newfoundland; the *Agamemnon*, carrying Thomson and Bright, headed for Ireland. The contest was on again. This time there was to be better luck.

When the splice was made in mid-ocean, Field was hopeful but chastened. "I was standing on the deck of the *Niagara*," he said later. "The day was cold and cheerless. . . . When I thought of all that we had passed through, of the hopes thus far disappointed, of the friends saddened by our reverses, of the few that remained to sustain us, I felt a load at my heart almost too heavy to bear." His New England conscience troubled him; was it fair to his family to persist so stubbornly?

The *Niagara* steamed westward; but no games were played on her deck, as on previous trips. No telegraph stock was bought and sold, as reports came from the electrician, in an imitation stock-exchange. A short distance from the rendezvous the ship's compass began playing false, and it was necessary for the *Gorgon* to do the piloting. There was trouble with the electrical continuity, but messages to the *Agamemnon* were resumed after initial despair and some tinkering. A fault in the cable was detected and corrected before that portion was laid. As the ship approached Newfoundland, huge icebergs were sighted but successfully avoided.

On the *Agamemnon* there was more excitement. Early in the work, a large whale was seen approaching the ship headed straight for the cable. Luckily the great animal missed a contact. The suggestion was offered that perhaps the second mysterious break of the cable a month before had been caused by such an accident. Several days later an American three-masted schooner almost collided with the *Agamemnon* as it cut across the course. The *Valorous* steamed ahead and fired a gun as a warning. The Americans were puzzled but when they guessed what was going on, they gave a cheer. The escape, however, was too close to be comforting. Later the

Valorous had to fire gun after gun just before daybreak to ward off a large American bark which threatened to become entangled in the cable.

A portion of the cable on the *Agamemnon* was found to be damaged, and for a time there were fears that some of that already laid was similarly faulty. Two interruptions in the electrical continuity were overcome and found to be due to unimportant causes. Unfavorable winds added to the worries, and an undue amount of cable had to be paid out as a zigzag course was necessary.

Nevertheless, general conditions continued favorable. The luck was changing. At dawn on the morning of August 5, 1858, the rocky Irish coast was sighted, and by six o'clock anchor was dropped opposite Valentia. The crew sighed their relief; the officials were overjoyed. A signal came through the cable that the *Niagara*, which had sighted Newfoundland the day before, was landing its end, having evaded icebergs and fogs. Cyrus Field stepped ashore on the wild coast of Trinity bay on the evening of August 4, and before daybreak on the morning of August 5 he waked the sleeping operators in the telegraph-house with the words, "The cable is laid." They were astonished and incredulous; it was like a dream coming true.

The *Niagara* had laid 1030 nautical miles; the *Agamemnon* 1020, a total of 2050 nautical miles. This is equivalent to about 2360 land miles. A copper wire capable of bearing an electric current along the bed of the ocean connected the Old World with the New. By noon on August 5, the news began to spread over Europe and America. The Field family, gathered at Stockbridge, were startled on a quiet summer afternoon by a telegram from Cyrus announcing the glad tidings. They were overwhelmed with emotion; soon the little New England village was in a tumult. Bells were rung, and guns were fired. Children, released early from school, shouted: "The cable is laid! The cable is laid!" The home-town boy

from Stockbridge had aroused the world. As Henry Field phrased it, Cyrus Field woke up famous.

Part of the excitement arose from the unexpectedness of the news. If the success had come a year before, or even a month before, the public would have been somewhat prepared. But nearly everybody had concluded that the efforts were doomed to fail and that Field was pursuing a forlorn hope.

To show the impact of the glad news, in staid Boston a hundred guns were fired on the sacred Common, and the bells of the city were rung for an hour. In New York people flocked into the streets and broke into an uproar of rejoicing. These seaboard cities realized the immense advantages that an ocean cable to Europe would bring them. Similar outbursts of rejoicing took place in all parts of the country after Field's telegram from Newfoundland at noon of August 5 announced to the Associated Press in New York that the expedition had succeeded.

At that period, electricity was still a mysterious and wonderful force. People were awed by successful manifestations of it. Some of them, like Morse, looked upon it as a gift from God to aid man in his hard struggle here below. Others were suspicious of it as a factor unknown to their forefathers and not mentioned in the Bible; it was possibly a "trap of Satan." But now all qualms were forgotten, at least temporarily.

On the same day, August 5, Cyrus Field telegraphed President Buchanan that Queen Victoria would send an official opening message to him. The President, who was in Pennsylvania, replied next day, expressing his congratulations and his hope for perpetual peace between nations. An avalanche of congratulatory telegrams and letters began to pour in upon Field from all sides. The poet Longfellow wrote to a friend "the great news of the hour, the year, the century."

There was still incredulity among persistent doubters. The tone of an editorial in the *New York Evening Post* reflected

conservative opinion. Although the news headlines proclaimed: "Success of the Atlantic Telegraph Cable," the editorial said with the professional austerity characteristic of its noted editor, William Cullen Bryant, a friend of Field: "Such is the startling intelligence which reaches us just as we are going to press. We find it difficult to believe the report, for recent events have prepared us for a very different result, and yet the dispatch comes to us through our regular agent, who would not deceive us. He may have been imposed upon, but that is quite unlikely. If the few coming hours shall confirm the inspiring tidings and the cable is landed and in working condition, all other events that may happen through the world on this day will be trifles."

"To-morrow the hearts of the civilized world will beat to a single pulse, and from that time forth forevermore the continental divisions of the earth will in a measure lose those conditions of time and distance which now mark their relations one to the other. But such an event, like a dispensation of Providence, should be first contemplated in silence."

The rise in the fortunes of the telegraph company is graphically indicated by the quotations of the stock of the Atlantic Telegraph Company in London. Before the successful completion of the cable-laying, the thousand-pounds shares sold at three hundred fifty pounds; after the good news arrived, the price jumped to nine hundred pounds. A few weeks later, unfortunately, they were to sink again.

An interesting article in the *New York Herald* of August 9 summarizes the alteration in popular feeling about Cyrus Field and furnishes a philosophical sermon on historical fame. The article said:

"Many terse and witty things have been said and written in all ages to show the difference with which the same enterprise is viewed when it results in success and when it results in failure. We have never had any better illustration of this than we now have in connection with the great enterprise of

the age. After the first and second attempts to lay the Atlantic cable had failed, wiseacres shook their heads in sympathetic disapprobation of Mr. Field and said, 'What a fool he was!' It was evident to them all along that the thing could never succeed, and they could not understand why a sensible, clear-headed man like Field would risk his whole fortune in such a railroad-to-the-moon undertaking. If he had ventured a third of it or a half, there might be some excuse for him, but to have placed it all on the hazard of a die where the chances were a hundred to one against him—worse even than the Wall Street lottery conducted under the name of the Stock Exchange—was an evidence of folly and absurdity which they could not overlook and for which he deserved to suffer.

"Now all that is changed. Midnight has given place to noon. The sun shines brightly in the heavens and the shadows of the night have passed away and are forgotten. Failures have been only the stepping-stones to success the most brilliant. The cable is laid; and now the most honored name in the world is that of Cyrus W. Field, although but yesterday there were 'None so poor to do him reverence.'

"The wiseacres who shook their heads the other day and pitied while they condemned him are now among the foremost in his praise, and help to make his name a household word. Bells are rung and guns are fired and buildings are illuminated in his honor throughout the length and breadth of the land; and prominent among all devices and first on every tongue and uppermost in every heart is his name. Had he not, like the great Bruce, persevered in the face of repeated failures until his efforts were at length crowned with success, he would have been held up to the growing generation as an illustration of the danger of allowing our minds to be absorbed by an impracticable idea, and his history would have been served up in play and romance, and used 'To point a moral or adorn a tale.' As it is, the nation is proud of him, the world knows him, and all mankind is his debtor."

Typical of the extravagant praise showered on Field was an impressive oration by a famous preacher, the Reverend Henry Ward Beecher, on the evening of August 9 at Fishkill-on-the-Hudson. This master of eloquence reviewed briefly the coming of the steamboat, the railroad, and the telegraph—all within the memory of men of the day. He continued in his vivid style:

“I thought all the way in riding down here to-night how strange it will seem to have that silent cord lying in the sea, perfectly noiseless, perfectly undisturbed by war or by storm, by the paddles of steamers, by the thunders of navies above it, far beyond all anchors’ reach, beyond all plumbing interference. There will be earthquakes that will shake the other world, and the tidings of them will come under the silent sea, and we shall know them upon the hither side, but the cord will be undisturbed, though it bears earthquakes to us. [Earthquakes have broken the cables on several occasions.] Markets will go up and fortunes will be made down in the depths of the sea. The silent highway will carry it without noise to us. Fortunes will go down and bankruptcies spread dismay, and the silent road will bear this message without a jar and without disturbance. Without voice or speech it will communicate thunders and earthquakes and tidings of war and revolutions, and all those things that fill the air with clamor. They will come quick as thought from the scene of their first fever and excitement, flash quick as thought and silent on their passage, and then break out on this side with fresh tremor and anxiety. To me the functions of that wire seem, in some sense, sublime. Itself impassive, quiet, still, moving either hemisphere at its extremities by the tidings that are to issue out from it. . . .

“We are called, and shall be increasingly so, to mark the advantages which are to be derived from the connection of these continents by this telegraphic wire. To my mind the prominent advantage is this: it is bringing mankind close to-

gether, it is bringing nations nearer together. And I augur the best results to humanity from this. The more intercourse nations have with each other, other things being equal, the greater the tendency to establish between them peace and good-will, and just as they are brought together will they contribute to advance the day of universal brotherhood. . . .

"That which is spoken at twelve o'clock in London will be known by us at eight o'clock in the morning here, according to our time. . . . It is no longer in her own bosom that France can keep her secrets. It is no longer in her own race that Russia can keep her thoughts and plans. It is no longer in the glorious old British Islands that their commercial intelligence can be confined. It is wafted round and round the globe. In less than an hour, whenever this system shall be completed, the world will be enlightened quicker than by the sun; quicker than by the meteor's flash. What is known in one place will be known in all places; the globe will have but one ear, and that ear will be everywhere."

The foregoing speech sounds strange to modern ears. The splendid advantages that Beecher foresaw in the use of ocean cables have become so common that today they are taken for granted. It is difficult now to realize a world in which news from Europe arrived three weeks old. Readers of twentieth-century newspapers have little comprehension what the European news letters looked like a century ago, when short summaries about wars, kings, and finances seemed like stale readings in history.

One of the congratulatory letters that Field appreciated most came from the secretary of the Atlantic Telegraph Company, George Saward of London. This said in part: "At last the great work is done. . . . I congratulate you upon this happy termination to the fearful anxiety, the continuous and oppressive labor, and the never-ceasing, sleepless energy which the successful accomplishment of this vast and noble enterprise has entailed on you. . . . If the contemplation of future fame

has a charm for you, you may well indulge in the reflection, for the name of Cyrus Field will now go onward to immortality as long as that of the Atlantic telegraph shall be known to mankind. It has been such a shock to us here that we have hardly realized it at present. I really think that some of the people who come here don't believe it yet."

This discerning appreciation from a fellow official, who knew what anxieties and labors Field had gone through, was generous and comforting, especially coming from a Londoner. In later years the British claimed much of the honor of the achievement, since, as they said, they did most of the technical work and supplied most of the money. Another respected colleague, George Peabody, the American capitalist of London, wrote, "Your reflections must be like those of Columbus, after the discovery of America." Even Archbishop Hughes in New York mentioned the cable in placing an inscription under the corner-stone of St. Patrick's Cathedral, although materialistic achievements are rarely referred to in such Catholic ceremonies.

Nearly two weeks passed before Field arrived in New York from Newfoundland. The public became impatient at the delay in getting the cable to function. Field sent a message to the Associated Press on August 7 from Trinity Bay, saying: "We landed here in the woods, and until the telegraph instruments are perfectly adjusted, no communications can pass between the two continents; but the electric currents are received freely." President Buchanan had said in his message to Field of August 6, "I have not yet received the Queen's despatch."

As the public criticism grew more insistent, Field telegraphed from St. John's on August 11 saying that the directors of the Atlantic Telegraph Company had ruled that the cable should be given over for several weeks to the experiments of Dr. Whitehouse, Professor Thomson, and the other electricians "to enable them to test thoroughly their several

modes of telegraphing, so that the directors might decide which was the best and most rapid method for future use."

On the sixteenth, however, before the *Niagara* had arrived in New York, the public was informed that Queen Victoria's message officially opening the cable had been received, and that President Buchanan's reply had been dispatched. The wording of the Queen's message was a formal congratulation "upon the successful completion of this great international work . . . an additional link between the nations, whose friendship is founded upon their common interest and reciprocal esteem." The Queen used the term "electric cable," a new designation for it.

President Buchanan reciprocated the congratulations "on the success of the great international enterprise accomplished by the science, skill, and indomitable energy of the two countries." He continued: "It is a triumph more glorious, because far more useful to mankind, than was ever won by conqueror on the field of battle. . . . Will not all nations of Christendom spontaneously unite in the declaration that it shall be for ever neutral . . . even in the midst of hostilities?"

The public announcement of these official messages, formally opening the underseas cable, aroused enormous enthusiasm. On the morning of August 17, the people of New York were awakened by the thunder of a hundred cannon fired in City Hall Park at daybreak. At noon the salvo was repeated, and bells were rung in the principal churches. Flags were flying from the public buildings; factories blew their whistles; triumphant placards appeared in the windows of stores and business houses.

The placards displayed quaint phrases that bespoke a naive point of view. One of them was as follows: "Queen Victoria, your despatch received; let us hear from you again." Another was: "The Old Cyrus and the New. One Conquered the World for Himself, the Other the Ocean for the World."

Near this was a witty one as follows: "Our Field is the Field of the World."

As evening came on, the buildings were illuminated in special effects, which, before the day of the electric light, were difficult to accomplish. In that period, lighted signs called "transparencies" were made by placing lamps behind cloth or paper. One of these on the front of a Broadway hotel was eighteen feet by thirty-one, and had blue and white letters. It said: "All Hail to the Inventive Genius and Indefatigable Enterprise of John and Jonathan, that has succeeded in consummating the Mightiest Work of the Age; May the Cord that binds them in the Bonds of International Friendship never be severed, and the Field of its Usefulness extend to every part of the Earth." At the top of the sign was the word "Victoria" in large capital letters; at the bottom the word "Buchanan"; at the left the word "Agamemnon"; at the right the word "Niagara." Also at the bottom, in small type were two lines of verse:

*Let nations' shouts, 'midst cannons' roar,
Proclaim the event from shore to shore.*

Another prominent hotel was decorated with colored lights and flags of several nations. On a transparency was the inscription: "Married, August, 1858, by Cyrus W. Field, Old Ireland and Miss Young America. May their honeymoon last forever." The *New York Sun* displayed this gas-lighted sign: "S. F. B. Morse and Cyrus W. Field, Wire-Pullers of the Nineteenth Century."

A placard that reviewed history proclaimed: "Lightning, caught and tamed by Franklin, taught to read and write and go on errands by Morse, started in foreign trade by Field, Cooper & Co., with Johnny Bull and Brother Jonathan as special partners."

The *New York Tribune*, then under the sway of the famous

Horace Greeley, a friend of Field, graphically described the procession in the streets. It said: "The workmen upon the Central Park and the workmen on the new Croton reservoir made a novel parade, and after marching through the principal streets were reviewed by Mayor Tiemann in front of the City Hall. The procession was headed by a squad of the Central Park police in full uniform; then came a full brass band and a standard-bearer with a white muslin banner on which was inscribed, 'The Central Park People.'

"The workmen, attired in their every-day clothes, with evergreens in their hats, next marched in squads of four, each gang carrying a banner with the name of their boss-workmen inscribed thereon. In the line of the procession were several four-horse teams drawing wagons in which were the workmen in the engineer's department. On the sides of the vehicles were muslin banners with the words, 'Engineer Corps.' The reservoir workmen were a hardy-looking set of men, and were fair specimens of the laborers of New York.

"The procession filled Broadway from Union Square to the Park, and, as it was altogether unexpected, it created no little excitement and inquiry. If all the men and teams in this turnout are kept at the city's work we shall soon see great improvement in the new park."

Similar demonstrations were held in other cities throughout the country. These were informal outbursts, rather than officially-planned ceremonies.

So great was the excitement in New York that it continued until next day, when the City Hall caught fire and was narrowly saved from destruction. On that morning, August 18, the *Niagara* steamed into the harbor, bringing Cyrus Field from Newfoundland. Although he had already resigned as general manager of the Atlantic Telegraph Company, he gave two receptions for the officers and sailors of the *Niagara*. Field was popular with the crew, and they cheered loudly when he addressed them after an evening procession in the

streets. He sold the remnants of the cable to Tiffany & Company, Broadway jewelers, to cut up and sell as souvenirs to eager buyers.

All these festivities and high jinks had been spontaneous and unofficial. It was now planned to hold in New York "A General Celebration of the Laying of the Atlantic Telegraph Cable." This was to last two days, and September 1 and 2 were designated for the momentous occasion.

The celebration began appropriately on the morning of September 1 with a service at Trinity Church. The Church was decorated with the flags of all nations, the Stars and Stripes and the Union Jack being most prominent. In the absence of Bishop Potter, the service was conducted by Bishop Doane of New Jersey. The latter had written some verses for the occasion. They began:

*Hang out that glorious old Red Cross;
Hang out the Stripes and Stars;
They faced each other fearlessly
In two historic wars;
But now the ocean-circlet binds
The Bridegroom and the Bride;
Old England, young America,
Display them side by side.*

At one o'clock the procession formed at the Battery and started up the route later to be familiar to heroic aviators. The destination was Forty-Second street at Sixth Avenue, where stood the grandiose Crystal Palace—a large glass-and-iron building designed in imitation of the famous Crystal Palace in London. The following account from the *New York Herald* of September 2 indicates the elaborate display.

The *Herald's* headlines were resplendent. They announced: "The Cable Carnival. . . . Achieved is the Glorious Work. . . . The Metropolis Overwhelmed with Visitors. . . . Over Half a Million of Jubilant People. . . . Broadway a Garden of Female Beauty. . . . A Bouquet in Every Win-

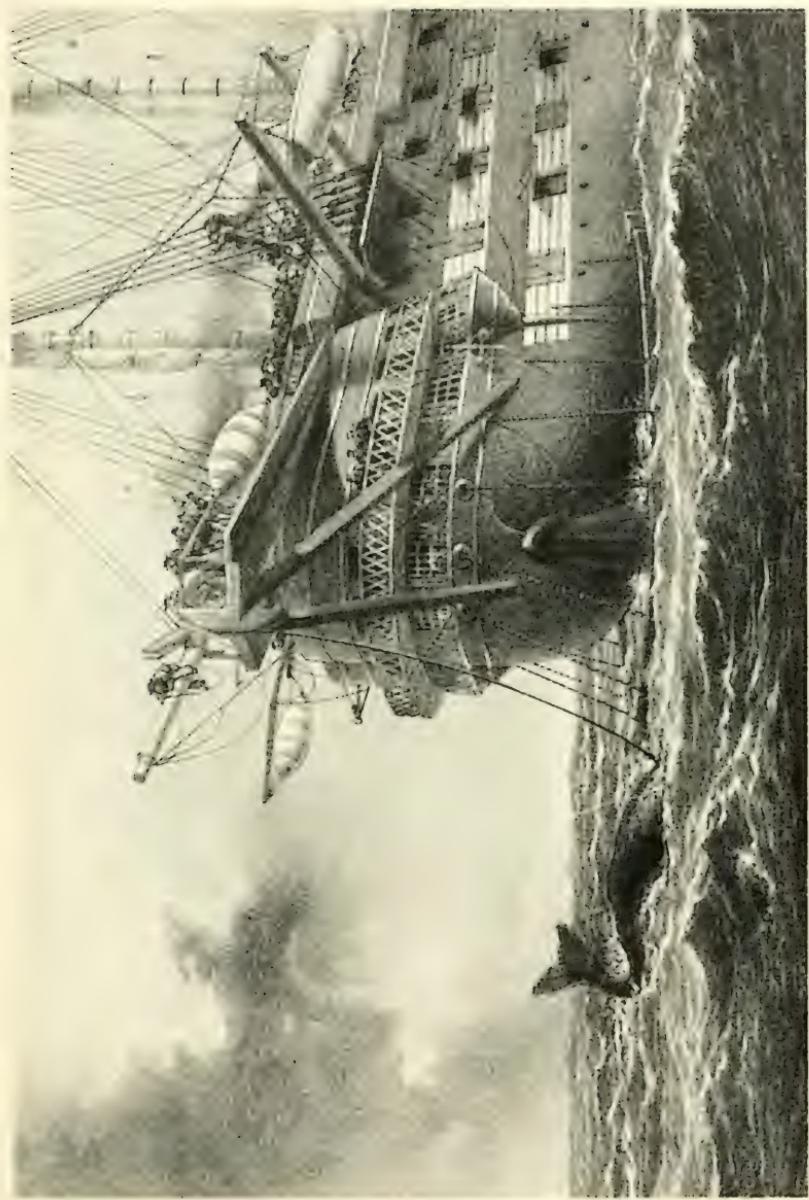
dow. . . . Glorious Recognition of the Most Glorious Work of the Age. . . . Reunion of All the Nationalities. . . . The Cable Layers. . . . The British Naval Officers in Town. . . . The Jack Tars of the *Niagara* on Hand. . . . The Big Coil of Cable. . . . Scenes at the Crystal Palace. . . . The City at Night. . . . The Fireworks in the Park. . . . The City Hall Safe. . . . Torch-Light Procession of the Firemen. . . . Illuminations. . . . The Colored Lanterns à la Chinois."

The article then went on to say: "The scene presented along Broadway altogether transcends description. Every available and even unavailable place was secured long beforehand, and from the Battery to Union Place one was obliged to run a gantlet of eyes more effective and more dangerous than any artillery battery. This display of female beauty, conjoined to the great array of flags, banners, and mottoes, made us think of a Roman carnival. . . .

"The hour appointed for the interesting ceremonies inside the Palace to commence was half-past four o'clock, but the procession did not arrive there till within a few minutes of six. By that time there were about ten thousand persons in the building anxiously awaiting the arrival of the celebrities, whom all were desirous to see and hear. . . .

"The crew of the *Niagara*, with a model of that ship, entered by the front door, and, marching up the centre aisle, took their place in front of the platform. They were loudly cheered, and they responded in true sailor fashion by cheering lustily for Captain Hudson, Mr. Field, the mayor, and almost every one they recognized on the platform. . . .

"At night one would suppose the crowd would lessen. Not so. The illuminations, the fireworks, the many-colored lanterns, and the general gas and spermaceti demonstrations gave to Broadway a carnavalesque appearance which it is almost impossible to describe. . . . The great bazaars vied with each other in the number and variety of their mottoes and



A WHALE INTERFERES WITH CABLE LAYING

designs, both for day and night; but, passing by all of them, we were especially struck with the following distich on the side of a car:

*With wild huzzas now let the welkin ring,
Columbia's got Britannia on a string.*

. . . The fact is, that an avalanche of people descended upon us, and New York was crushed for once; but we do not lay Atlantic cables every day."

New York was resolved to outdo even the memorable celebration at the completion of the Erie canal over thirty years before. As Henry Field afterward remarked, "It seems strange now to sit down in cold blood and read what was published in the papers of that day." Among the many poems composed during the enthusiasm of the time was one of twelve stanzas by John G. Saxe published in *Harper's Weekly*. The last two stanzas were as follows:

*Now long live James, and long live Vic,
And long live gallant Cyrus
And may his courage, faith, and zeal
With emulation fire us.*

*And may we honor evermore
The manly, bold, and stable,
And tell our sons, to make them brave,
How Cyrus laid the cable.*

In the 1870's this jingle was printed in hundreds of thousands of "fourth readers" and recited on school platforms throughout the country. Field was not to blame for this. It was a consequence of the taste of the period. One of the worst stanzas went as follows:

*Bold Cyrus Field he said, says he,
"I have a pretty notion,
That I can run a telegraph
Across the Atlantic Ocean."*

The two-day carnival in New York concluded with a "Municipal Dinner by the Common Council of the City of New York to Cyrus W. Field, and Officers of H. B. M. Steamship *Gorgon* and U. S. Steam Frigate *Niagara* in Commemoration of the Laying of the Atlantic Cable." The bill of fare of this epicurean banquet, served to six hundred guests, puts to shame even the kingly feasts of the courts of Louis the Fourteenth or Emperor Charles the Fifth. A modern reader of the extended courses and heavy foods is likely to wonder how any man could eat them and survive. Apparently New Yorkers felt that, having shown scant faith in the cable during its laying, they must atone by the richness and sumptuousness of this dinner to Field.

The affair began with oysters on the half shell, after which there were green turtle soup and gumbo with rice. Then came boiled fresh salmon with lobster sauce, and broiled Spanish mackerel with steward's sauce. The boiled meats were turkey with oyster sauce, and leg of mutton with caper sauce. The roasts were young turkey, ribs of beef, ham with champagne sauce, lamb with mint sauce, and chickens with English sauce.

Well launched now, the hungry guest could have under "cold dishes" such dainties as boned turkey with jelly, chicken salad with lobster sauce, patties of game with truffles, and ham *sur socle* with jelly. The entrées were numerous: tenderloin of beef larded with mushroom sauce, lamb chops with green peas, chartreuse of partridges with Madeira sauce, forms of rice with small vegetables, timbale of macaroni in Milanaise style, wild ducks with olives, breasts of chicken with truffle sauce, soft-shell crabs fried plain, stewed terrapin in American style, braised squabs with gardener's sauce, larded sweetbreads with string beans, larded fricandeau of veal with small carrots, flounders stuffed with fine herbs, reed birds with steward's sauce, broiled turtle steaks with tomato sauce, croquettes of chickens with fried parsley, larded tenderloin

of lamb with poivrade sauce, and pluvier on toast in Italian sauce.

The relishes were raw tomatoes, Spanish olives, pickled oysters (a favorite dish then), currant jelly, and celery. If the guest desired still more meat, there were under "game" such trifles as partridges with bread sauce, and broiled English snipe. The vegetables were relatively scarce (as in the diet of Louis the Fourteenth). They were boiled and mashed potatoes, stewed tomatoes, sweet potatoes, and lima beans.

Pastry was well represented by pies of apple, plum, peach, pineapple, custard, and pumpkin. Also plum pudding and cabinet pudding, fancy blanc mange, Spanish cream, pineapple salad, Swiss meringues, fancy ornamented charlotte russe, *gateaux* in Neapolitan style, and jellies of maraschino, of Madeira, of punch, of champagne, and of fancy fruits.

Under "confectionery" were listed: canilla meringues *à la crème*, rose almonds, fancy lady's cake [sic], quince soufflé, vanilla sugar almonds, ornamented macaroons, mint cream candy, butterflies of Vienna cake, Savoy biscuit, variety glacé fruit, dominos of biscuit, fancy variety candy, roast almonds, conserve kisses, chocolate biscuit, fancy diamond kisses, preserved almond kisses, and vanilla ice cream [only one flavor].

If the guest was still hungry, there were "desserts" as follows: almonds, peaches, pecan nuts, Grenoble nuts, hot-house grapes, citron melons, Bartlett pears, raisins, filberts, and coffee. The other drinks were not listed, but many toasts were drunk, including one to Cyrus W. Field: "To his exertions, energy, courage, and perseverance are we indebted for the ocean telegraph; we claim, but Immortality owns him." Lord Napier, the English minister, expressed the appreciation of the British Empire in cordial words.

The bill of fare also listed the ornaments of the tables, designed especially for the occasion. They were as follows: Queen Victoria of Great Britain (represented as a young woman, as she was then under forty); President James Bu-

chanan of the United States; Cyrus W. Field with his cable; Professor Morse, inventor of the telegraph; Dr. Benjamin Franklin; the telegraph instrument of the Metropolitan Hotel, where the dinner was served; the United States man-of-war *Niagara*; the *Agamemnon* and the *Niagara* paying out the cable; Cyrus W. Field surrounded by flags of all nations; the coats of arms of all nations, on a pyramid; Pocahontas with "real American design"; a temple of liberty; a grand ornamental fruit vase; a temple of music; a frosting tower; a sugar tower with variety decorations; a flower pyramid; a white sugar ornament; a fruit basket supported by dolphins; a fancy decorated flower vase; a tribute temple; a pagoda pyramid; a mounted Scotch warrior; an Ethiopian tower; a floral vase decorated; a frosting pyramid; a mounted church; a pyramid of cracking bonbons; a Chinese pavilion; a triumphant temple; a sugar harp with flower decorations; a variety pyramid; a fancy sugar temple; an ornamented sugar tower; a temple of art; and a lyre surmounted with cornucopia of flowers.

A study of this truly gorgeous banquet, feting a man who a month before had been ridiculed and pitied, reveals not only the spirit of the times, but something of the spirit of all time. The banquet itself reveals the naive desire for display and for the superlative that then characterized society. It also reveals something about the dietary on which Americans subsisted.

Chapter Six

HARD LUCK AND HUMAN NATURE

TO UNDERSTAND FULLY the relation of Cyrus Field to his times, and something of the nature of his fame, it is well to stop and survey his career to this point. In 1835 he had come to New York at the age of fifteen—a country boy with no particular advantages. His education had been limited; the experience acquired in a backwoods village dominated by puritanical standards had not particularly fitted him to be a world figure.

Nevertheless, twenty-three years after his arrival as a green youngster, he was the toast of Broadway and a hero of the civilized world. This eminence had not been obtained easily. During much of his twenty-three years since leaving home, he had been in debt or financial straits. The achievement that made him famous had proved to be one of the most difficult and discouraging tasks ever attempted. He had contended with repeated crises of both nature and human nature. Financial and engineering problems of unprecedented variety had confronted a young man whose training had been provincial and narrow.

Cyrus Field was naturally a likable man, though his progressive ways sometimes offended stodgy or jealous persons. By nature he was frank and optimistic, with engaging manners and persuasive conversation. It was these attractive characteristics, coupled with the reliability and determination bred in him, that won him early success. It was, unfortunately, this same trustfulness and simplicity that eventually brought sorrow to his home. For a full picture of the man, it should be added that his health was never robust and that, being sensitive, he was often discouraged; but he revived quickly.

When the grand celebration was given in his honor, he was thirty-eight years old. Charles Bright, the British hero of the occasion, was but twenty-six; he was knighted a few days after landing the cable in Ireland and was feted and praised somewhat as Field was. As indicative of the British attitude at this time, the leading article in the *London Times* on the day after the completion of the line said: "Mr. Bright, having landed the end of the Atlantic cable at Valentia, has brought to a successful termination his anxious and difficult task of linking the Old World with the New, thereby annihilating space. Since the discovery of Columbus, nothing has been done in any degree comparable to the vast enlargement which has thus been given to the sphere of human activity." As this typical comment indicates, the British looked upon the victory as theirs and Bright as the man who had achieved it.

But all this rejoicing was premature. Sad news was on its way. Something was wrong with the cable. At the very time when the official celebration was being held in New York, the cable ceased to operate properly. As Henry Field said: "Alas for all human glory! Its paths lead but to the grave. Death is the end of human ambition. The very day that a whole city rose up to do honor to the Atlantic telegraph and its author, it gave its last throb, and that first cable was henceforth to sleep for ever silent in its ocean grave."

This is not strictly accurate, because confused signals could still be sent through the cable until October 20. On the first day of the official celebration, a message was delivered to Cyrus Field in New York which had come that morning from the British officials of the Company. This message said: "The directors are on their way to Valentia to make arrangements for opening the wire to the public." That was one of the last clear messages transmitted over the cable.

Several hundred successful messages had been sent during the weeks of testing and trial, but now only vague murmurs

were received. In the words of Henry Field: "The Atlantic cable was dead! That word fell heavy as a stone on the hearts of those who had staked so much upon it. . . . Vain is all human toil and endeavor. The years thus spent are fled away. . . . So was it here. Years of labor and millions of capital were swept away in an hour into the bosom of the pitiless sea. Of course the reaction of the public mind was very great. As its elation had been so extravagant before, it was now silent and almost sullen. People were ashamed of their late enthusiasm, and disposed to revenge themselves on those who had been the objects of their idolatry. It is instructive to read the papers of the day. As soon as it was evident that the Atlantic cable was a dead lion, many hastened to give it a parting kick. There was no longer any dispute as to who was the author of the great achievement. Rival claimants quietly withdrew from the field [sic], content to leave him alone in his glory." At each end of the cable discouraged operators vainly tapped their keys, adjusted fresh batteries, and attempted new combinations—but the useless wire was dumb.

A curious aftermath of the official celebration in New York was that, nearly a year later, Cyrus Field received a note from the Mayor granting him the freedom of the City. The delay was partly caused by the manufacture of a gold snuff-box, also voted him by the City at that time. These testimonials came like an anticlimax. A somewhat similar delay was to occur years later when Congress gave him a gold medal.

A letter, dated September 6, 1858, from the secretary of the Atlantic Telegraph Company was published in the *London Times*. It said: "I am instructed by the directors to inform you that owing to some cause not at present ascertained, but believed to arise from a fault existing in the cable at a point hitherto undiscovered, there have been no intelligible signals from Newfoundland since one o'clock on Friday, the 3d inst. The directors are now at Valentia, and aided by various scientific and practical electricians, are investigating the cause of

the stoppage, with a view to remedying the existing difficulty. Under these circumstances no time can be named at present for opening the wire to the public."

The Company's directors had gone hopefully to Valentia with the idea of opening the line to the public. They found a sad disappointment. From the apex of success, their spirits dropped to the depths.

Said Henry Field: "Many explanations were offered of this sudden suspension of life. One writer argued that the Telegraphic Plateau was only a myth; that the bottom of the ocean was jagged and precipitous; that the cable passed over lofty mountain chains, and hung suspended from the peaks of submarine Alps, till it broke and fell into the tremendous depths below. But others found a readier explanation. With the natural tendency of a popular excitement to rush from one extreme to the other, many now believed that the whole thing was an imposition on public credulity, a sort of 'moon hoax.' An elaborate article appeared in a Boston paper, headed with the alarming question, 'Was the Atlantic cable a humbug?' wherein the writer argued through several columns that it was a huge deception. A writer in an English paper also made merry of the celebration in Dublin, where a banquet was given to Sir Charles Bright, in an article bearing the ominous title: 'Very like a whale.' This writer proved not only that the Atlantic cable was never laid, but that such a thing was mathematically impossible."

But there were uglier rumors than these, so far as Cyrus Field was concerned, for he bore the brunt of the execration. As his brother wrote: "But others there were—sharp, shrewd men—who thought they could see through a mill-stone farther than their neighbors, who shook their heads with a knowing air, and said, 'It was all a stock speculation.' One writer stepped before the public with this solemn inquiry, 'Now that the great cable glorification is over, we should like to ask one question, How many shares of his stock did Mr.

Field sell during the month of August?" "The answer to this insinuating question was that Cyrus Field had sold only one share since the cable was laid. The sale brought nine hundred pounds; it had originally cost him more than that. He had not found the project a money-making scheme.

Of course, it would have been possible for a group of clever manipulators to forge the messages exchanged between Queen Victoria and President Buchanan. But those who believed such a story overlooked the news of unexpected events that the cable had transmitted. These included the report of the collision of two steamships off Newfoundland. This news was sent promptly to the Cunard company in London. Again, the news of the end of warlike troubles in China was sent from London to America and took the public by surprise. Most convincing of all, messages were sent by British military authorities, after the quelling of the Indian mutiny, to stop two regiments that were to sail from Canada to England. This news saved a substantial sum of money for the British Government by halting the unnecessary transportation of troops.

There were other instances of this kind to prove that the cable had actually functioned for about three weeks, during which the testing and tuning-up were in progress. But the public was not disposed to be judicial in its comments. It had praised extravagantly; the cable was dead; there must have been fraud or deception.

It was true that the cable had never worked with entire satisfaction; it had been slow and erratic, as different methods of operating were tried. One curious reaction from the episode of this failure was that a prominent New York lawyer of the time, Charles O'Conor, continued for years to instance the belief that messages had been flashed across the Atlantic as an extreme example of human credulity. This O'Conor later encouraged Field to reorganize New York's elevated railways —a change of heart.

The actual conditions were as follows, in the words of the son of Sir Charles T. Bright, engineer for the Atlantic Telegraph Company, who of course understood the technical procedure: "Unfortunately for the life of the cable, Mr. Whitehouse [the official electrician] was imbued with a belief that currents of very high intensity, or potential, were the best for signaling; and he had enormous induction-coils, five feet long, excited by a series of very large cells, yielding electricity estimated at about 2000 volts potential. The insulation was unable to bear the strain, and thus the signals began to gradually fail."

This was at the beginning of the tests made, as soon as the cable had been laid. The mistake of Dr. Whitehouse in assuming that a high voltage was best suited for sending a message through the cable was similar to the other serious mistake of the British technical staff when they assumed, in the previous year, that a ponderous machine was best for laying the cable. They tended to overdo the idea of power. This is a common mistake in the early stages of invention and design; later procedure is likely to simplify and tone down the clumsy tendencies of pioneer work.

"For something like a week," said the younger Bright, "the efforts to work through the cable with the above apparatus proved ineffectual, the power being constantly increased to no purpose. Professor Thomson's reflecting galvanometer, which had worked so well during the voyage, was then used again with ordinary Daniell cells."

By this latter method the cable was made to function. The first clear message came through on August 13, eight days after the landing. Toward the end of the month, several itemized news dispatches were successfully sent. The results, however, were erratic, and there was little reliability. Sometimes several hours were required to send a single dispatch, although on one occasion a message was sent and answer received in two minutes.

In the words of Bright's son: "But the insulation of the precious wire had, unhappily, been giving way. The high-potential currents from Mr. Whitehouse's enormous induction-coils were too much for it; and the diminishing flashes of light proved to be only the flickering of the flame that was soon to be extinguished in the external darkness of the waters. After a period of confused signals, the line ultimately breathed its last on October 20th, after 732 messages in all had been conveyed." Just to indicate how little voltage was actually required: after the 1866 cable was laid, an experiment was made in which a message was sent successfully from Newfoundland to Ireland by an improvised apparatus consisting of a small copper percussion-cup and a tiny strip of zinc, activated by a drop of acidified water—a truly pigmy battery. The superior insulation made this possible.

The mistakes that had been revealed about the cable were, that it was too light and the insulation too thin. Bright had been correct in his original recommendation for a heavier cable; and Faraday, Whitehouse, and Morse had been wrong. Dr. Whitehouse, who had been a physician before he turned electrician, was a painstaking technician and an ingenious experimenter; but he did not know enough about electricity. The moderate power from the batteries used on the ships, helped out by Thomson's sensitive reflecter, would have been better for sending messages than Whitehouse's enormous induction-coils. He wished to standardize a sturdy apparatus, with a special relay and the Morse recorder, but he overdid his part. He sent a stroke of lightning over the cable, which required only a spark.

Consulting electricians were called in and distinguished advice was asked. Various devices were tried to enliven the dead cable. None of them gave any promise. Efforts were also made to raise the cable, but the grappling-tools of that period were of slight consequence, so that very little was accomplished. Sir Charles Wheatstone and Professor David Hughes,

both high authorities, agreed that the cable had been ruined by too intense currents, which had burst through the gutta-percha covering. One simile suggested was that, in engineering terms, high-pressure steam had been used in a low-pressure boiler. Not enough was understood about electricity at this time.

These unexpected slips of science indicate the odds that handicapped Cyrus Field's efforts to lay and operate an Atlantic cable. He had persuaded capitalists to invest large sums of money in the belief that a cable could be made strong enough to be paid out from a ship into water three miles deep; and that electricians could then send signals through two thousand miles of this cable, which could not be relayed or maintained as a land wire could. His plans assumed that, as Lieutenant Maury had reported, the bed of the ocean in this place was more level and moderate in depth than elsewhere, and that there would be little disturbance or abrasion to a cable laid on the bottom. All these assumptions depended upon a conquest of nature by a knowledge of science that had not yet been established. Cyrus Field was downcast by this failure. He was disappointed, but not beaten. Peter Cooper helped to cheer him up; Wilson Hunt was also hopeful; Taylor and Roberts were pessimistic.

Undismayed by repeated blows of fate, he was in London next spring and urged the directors of the British Company to raise six hundred thousand pounds for laying a new cable and perhaps repairing the old one. But subscriptions to the new stock came in very slowly. The idea was gaining ground that the enterprise was too difficult for a private corporation, and that the British Government should take it over. The Company finally asked the Government to guarantee the interest on part of the stock even if the next attempt failed.

This request might have been granted except for an unfavorable development in another submarine telegraph, which deepened the public pessimism about cables in general.

The British Government had recently assisted in the laying of a cable in the Red Sea, in order to facilitate communication with India. But the cable was improperly designed and soon ceased to function. Things began to look as though such enterprises were impracticable.

Nevertheless, the British Government made a sporting offer. It agreed that if an Atlantic cable could be made to operate, it would increase its annual subsidy for official messages from fourteen thousand to twenty thousand pounds, and it would guarantee eight percent interest on six hundred thousand pounds of new capital for twenty-five years. Still further help was given by the Government in its soundings off Ireland and in its organization of an official committee to clarify the technical problems. This Committee, composed of eminent authorities, worked for nearly two years and finally reported favorably on the feasibility of an Atlantic cable. This long delay retarded the active prosecution of the cable-laying, although valuable data were gathered that would eventually bring success. The technical features of the undertaking were at last being recognized and solved.

These were difficult years for Cyrus Field. His life seemed destined to be a succession of ups and downs. At the close of 1859, after his firm had finally succeeded in paying off the debts incurred in the panic of 1857, another misfortune fell upon them. The firm's office and warehouse on Beekman street were destroyed by fire. There was a large loss of goods beyond the amount covered by insurance, and valuable papers were burned. It is no wonder that at times Field appeared hard and implacable in business. Fresh efforts had now to be made to resuscitate the firm.

When the Republican Party's national convention to nominate a candidate for president was held in the summer of 1860, Field (unlike his brother David and his friend Horace Greeley) favored the selection of William H. Seward of New York, who had helped the cable subsidy in the Senate. He had

not heard much that was favorable about a gawky and vulgar Westerner called Abe Lincoln. Nearly everyone realized, however, that national affairs were approaching a crisis. As events afterwards proved, Seward would have been a dangerous man in the presidency because of his grandiose and egotistical ideas. How different things look at the time they happen from the way in which history later evaluates them. David Dudley Field and Horace Greeley were influential in defeating the nomination of Seward, which made possible the choice of Lincoln. In later years a statue of Seward was erected in Madison Square, near Greeley's and Field's homes.

New York's political apprehensions were somewhat overshadowed during the fall of 1860 by the visit of no less a personage than the Prince of Wales, the nineteen-year-old son of Victoria, afterwards Edward the Seventh. Because of his overseas connections and international fame, Field was able to assist the British consul, his old friend Archibald, in the entertainment of the august visitor. Peter Cooper, another old friend, was chairman of the General Committee of Arrangements; Morse also assisted. Unfortunately the floor of the Academy of Music collapsed during the grand ball given for the Prince. The committees gave a sigh of relief when the royal party departed and the socially pretentious had put away their fans and furbelows. Incidentally the skirts of the ladies at the ball in the Academy of Music were so voluminous that one such lady would fill a modern elevator. The period was mid-Victorian and the costumes grotesque.

Chapter Seven

CYRUS FIELD CARRIES ON

MORE TROUBLE WAS in store for Cyrus W. Field & Company. Another of America's recurrent panics swept the country. The firm made a brave fight but in December, 1860, was obliged to suspend payment once again. Two days after Christmas, Field addressed a frank letter to his creditors, offering to give up "every dollar of property I have in the world." The creditors accepted twenty-five cents on the dollar and permitted him to manage the firm, rather than call in trustees.

In order to make this payment and continue his subscriptions due upon stock in the two telegraph companies, he placed a mortgage upon everything he owned, including even the portraits of his father and mother. His chief assets were the house in Gramercy Park, the equity in his firm, and the stock holdings in the two telegraph companies. He even listed among his assets a pew in the Madison Square Presbyterian Church. While he arranged these matters, the Civil War flamed on the horizon—a new interruption to cable-laying, but destined to be an ultimate stimulus. David Dudley Field, who was influential in politics, worked to prevent the war. When Lincoln, as a candidate for president, spoke in New York, he appeared on the platform at Cooper Union with David Dudley Field and William Cullen Bryant as escorts.

During the course of the War, Cyrus Field was often in Washington. He assisted the Government officials by advice and suggestions, particularly in regard to telegraphic information and spying. He emphasized the need for telegraphic or cable communication to forts and military posts,

so that Washington headquarters could direct the campaign more intelligently. Another recommendation of his was the purchase of improved British gunboats to protect Northern commerce and blockade Southern ports. President Lincoln relied greatly upon telegraphic news.

Among other officials whom Field assisted were Secretary of State William H. Seward, Assistant Secretary of War Thomas A. Scott (who had charge of the railroads), General George B. McClellan, Colonel Thomas W. Sherman, and General U. S. Grant. On several occasions he visited the armies at the front, where he was helpful and welcome. The methods of conducting war at that time were more informal than today, and an intelligent civilian who understood such an important subject as telegraphy could make himself useful and sometimes act as intermediary between Washington headquarters and the officers in the field. Field's tact and disarming manners enabled him to achieve several helpful services for the hard-pressed officers with whom he conferred. Later Field's daughter Alice also visited the front in Virginia and wrote an interesting letter of her impressions.

Something of Field's character and standing can be understood by reference to a typical correspondence during the War. On December 4, 1861, he wrote from a hotel in Washington to Major-General McClellan suggesting that the "Government establish at once telegraphic communication between Washington and Fortress Monroe by means of a submarine cable from Northampton County to Fortress Monroe; that Forts Walker and Beauregard be connected by a submarine cable; that a submarine cable be laid between Hilton Head and Tybee Island; that the forts at Key West and Tortugas be brought into instant communication by means of a telegraph cable; that a cable be laid connecting the fort at Tortugas with Fort Pickens."

General McClellan approved these suggestions in the following notation: "I most fully concur in the importance of

the submarine telegraph proposed by Mr. Field, and earnestly urge that his plans may be adopted and he authorized to have the plans carried into execution. More careful consideration may show that a safer route for the cable from Fernandina to Key West would be by the eastern shore of Florida. This will depend on the strength of our occupation of the railroad from Fernandina to Cedar Keys."

Several days later, Colonel Thomas W. Sherman wrote to Field as follows: "It was but the other day I was discussing the very subject you mention. We want very much a telegraphic communication between Beaufort, Hilton Head, and the Tybee. How can we get it promptly?" Obviously Field's suggestions were taken seriously, and his practical knowledge of telegraphy was useful to the military authorities.

Because of his friendship with William H. Seward, the Secretary of State, Field was in a position to write to him freely, as indicated in the following extracts from a letter of January 1, 1862: "The importance of the early completion of the Atlantic telegraph can hardly be estimated. What would have been its value to the English and United States governments if it had been in operation on the 30th of November last, on which day Earl Russell was writing to Lord Lyons, and you at the same time to Mr. Adams, our minister in London? A few short messages between the two governments and all would have been satisfactorily explained. I have no doubt that the English government has expended more money during the last thirty days in preparation for war with this country than the whole cost of manufacturing and laying a good cable between Newfoundland and Ireland. . . . Will you pardon me for suggesting to you the propriety of opening a correspondence with the English government upon the subject, and proposing that the Atlantic Telegraph Company should be aided or encouraged to complete their line, and that the two governments should enter into a treaty that in case of any war between them the cable should not be molest-

ed?" Seward and Field later discussed this matter in person at Washington with the approval of President Lincoln and his cabinet.

The Lord Lyons referred to was the British minister at Washington, as Charles Francis Adams (son of John Quincy Adams) was minister at London. There had been dangerous repercussions over the high-handed seizure of two Confederate emissaries, Mason and Slidell, from the *Trent*, an English steamship, by the captain of a Northern frigate. War came perilously near between the Northern States and England. This would have been a catastrophe for the North.

To Field, such international flare-ups seemed chiefly the consequence of lack of quick communication that would allow a reasonable exchange of opinions. The long delays in sending letters by steamers, requiring several weeks to get an answer to an inquiry, bred misunderstandings based upon lack of information, and the impatience of human nature. He looked forward to prompt explanations between nations, with more give-and-take than the rigid documents of slow diplomacy permitted.

The suggestion in Field's letter prompted Secretary Seward a fortnight later to write to Adams that when opportunity presented itself, he might mention to Lord Russell, the British Foreign Minister, that President Lincoln thought very favorably of the plan for an Atlantic cable and would be glad to cooperate with the British Government in securing its successful execution. Lord Russell later talked with Field in person at the Foreign Office about the prospects of the Atlantic Telegraph Company and its requirements for laying a new cable. To strengthen his argument, Field referred to the two official messages that had been sent for the British Government over the cable of 1858, and of the large saving in money effected when the Oriental news had arrived in Canada so promptly. Lord Russell finally decided, however, that because

of the difficult complications of the war, it would be best to defer cable-laying for the time.

While in London, Field acquainted himself with the latest developments in submarine telegraphy. The British firm of Glass, Elliott & Company, which had made half the first cable, had recently laid successfully for the French Government a cable in the Mediterranean between France and Algeria. This was in water over two miles deep. The same firm had also laid a still longer Mediterranean cable between the island of Malta and the city of Alexandria in Egypt. This latter cable was nearly as long as the one between Ireland and Newfoundland, being over fifteen hundred miles in length. Still another successful cable was soon to be under way—the first cable to India, laid in sections along the Persian Gulf by Sir Charles Bright, former engineer of the Atlantic Telegraph Company. These successes helped to offset in the public mind the failures of the Newfoundland and the Red Sea lines.

Before leaving London, Field asked the firm of Glass, Elliott & Company to compute their terms for undertaking the laying of a cable from Ireland to Newfoundland. After several months of calculation, they wrote to him stating their estimates and their confidence in its success. Meanwhile, Field had been trying to raise funds in America for a new attempt. He visited Boston, Providence, Albany, Buffalo, and Philadelphia, besides canvassing commercial organizations in New York. Small contributions rewarded his earnest exhortations, but the general attitude was to listen with interest and encourage him verbally, but not to buy any stock. The cable scheme was considered a sort of South Sea Bubble! The audience were impressed by Field's glowing arguments and agreed that in theory it was a wonderful idea, but they were hard-headed Americans not inclined to risk hard-earned dollars.

At various times in his career, Field was accused by "pa-

triotic" Americans of being pro-British. While he was in England at this time, some enemies circulated stories about him designed to injure his reputation. Like all individuals of original ideas and determined character, he had antagonized jealous and unprincipled men. They started rumors about his "treasonable proceedings with the public enemy" and even managed to obtain mention of such scandal in two London newspapers. A complaint was made against him before the United States Grand Jury and some testimony presented, but it was later dropped. Several letters were written to entrap him. His answer to all this was to lay the facts before the Attorney General and his two good friends, the Secretary of State and the Secretary of the Treasury. There was, of course, no thought of treason in his activities and travels, most of which were devoted to the advancement of the cable project. American relations with England, however, were acute at this stage of the war.

Shortly after his return from England in the spring of 1862, Field delivered an address before the American Geographical and Statistical Society. He quoted the recent statement in the London *Times* that "We nearly went to war with America because we had not a telegraph across the Atlantic." Continuing he said: "And here I may mention a fact not generally known—that during the excitement of the *Trent* affair a person connected with the English government applied to Messrs. Glass, Elliott & Company, of London, to know for what sum they would manufacture a cable and lay it across the Atlantic; to which they replied that they would both manufacture and lay it down for £675,000, and that it should be in full operation by the 12th day of July of this year. Well might England afford to pay the whole cost of such a work; for in sixty days' time she expended more money in preparation for war with this country than the whole cost of manufacturing and laying several good cables between Newfoundland and Ireland."

This argument about the enormous sums spent for military purposes, as compared with the aid given to scientific projects, is true even today. Congress begrudged small subsidies to Morse and Field, who worked to facilitate the transmission of intelligence. During the Civil War, the benefits of telegraphy were too great to be measured. In fact, vast sums were lost because the Government did not encourage the invention more generously. Governments were slow in recognizing the possibilities of scientific aid, as they are even today.

In England, there was more understanding of the need for an Atlantic cable than in the United States. An island with far-flung colonies and world-wide interests naturally comprehended the advantages of prompt transmission of important news more readily than a self-contained republic not yet fully settled. It was only Field's personal magnetism that won financial support in America; in England the sporting habit of speculating on maritime ventures reinforced the far-seeing sagacity that recognized ocean cables as a factor of unusual significance. The British governing class was intelligent and inclined to encourage new ventures that were well recommended.

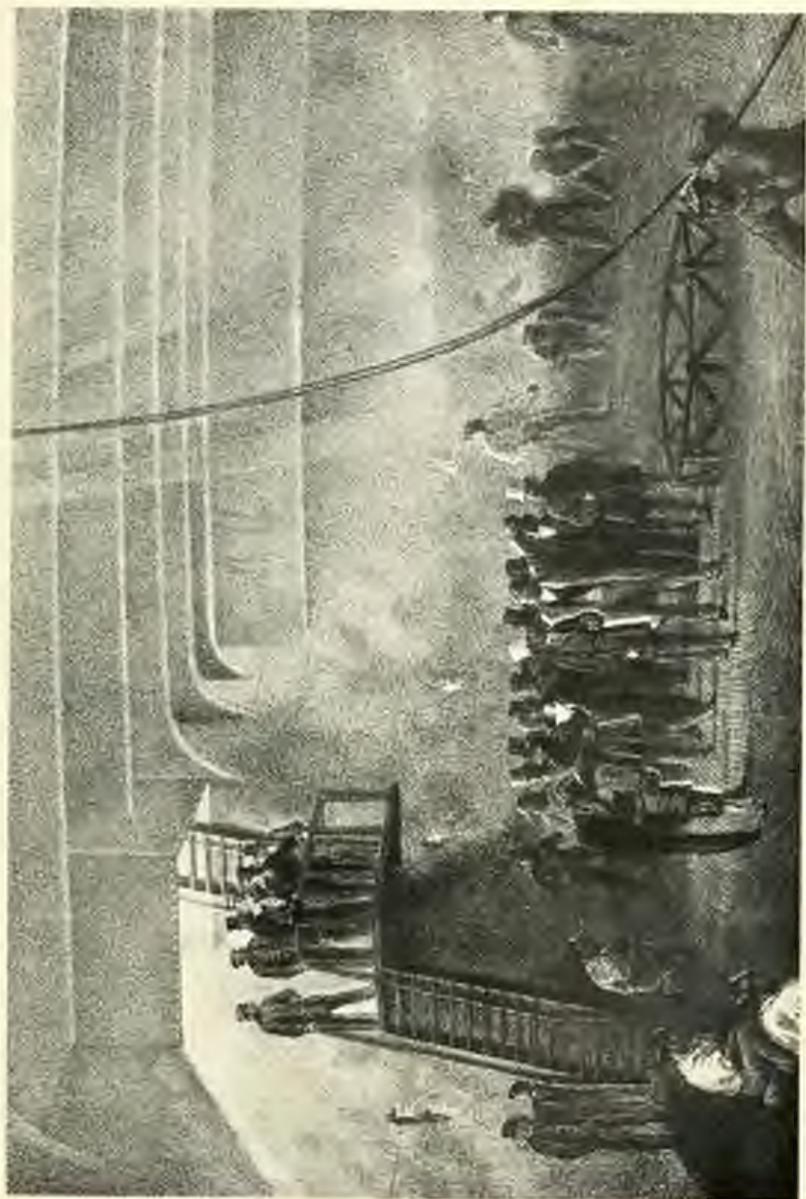
During the spring of 1862 the directors of the Atlantic Telegraph Company tried persistently to persuade the Prime Minister, Lord Palmerston, to realize the need for an Atlantic cable. Lord Palmerston had sporting proclivities but was getting old. Furthermore the pronounced sympathy of most aristocratic Englishmen for the Confederate cause militated against such an alliance with the Northern States as the cable project would imply. Palmerston himself had attempted to bully the American Government on several occasions before the war began.

There was intense feeling against England in New York and Washington. Field wrote to his friend Thurlow Weed, a prominent American journalist who was in London, saying:

"I regret exceedingly to find a most bitter feeling in this country against England. Mr. Seward is almost the only American that I have heard speak kindly of England or Englishmen since I arrived."

A few days later, Field wrote to Seward as Secretary of State, asking him to direct Adams in London to press again upon the British Government the importance of an Atlantic cable. He was now convinced that the laying of the cable was his life work. In his early forties, he was at the height of his powers, and he lost no opportunity to advance his arguments. Writing to one of the directors of the Company in London, he said in part: "Four weeks ago this evening I arrived from England, and almost every moment of my time since I landed has been occupied in working for the Atlantic Telegraph, either in seeing the President of the United States, or one of his Cabinet, or some member of the Senate or House of Representatives, or an editor of one of our papers, or writing to the British provinces, or doing something which I thought would hasten on the time when we should have a good submarine telegraph cable working successfully between Ireland and Newfoundland, and if we do not get it laid in 1863 it will be our own fault. Now, now is the golden moment, and I do beg of you and all the other friends of the Atlantic telegraph to act without a moment's unnecessary delay. . . . I hardly think of anything but a telegraph across the Atlantic."

Field's association with President Lincoln and his cabinet was not based entirely on his advocacy of an ocean cable, or on his advice about telegraphy for the military operations of the war. Because of his acquaintance with the leaders of thought and national policy in England, he was able to inform the cabinet members in Washington what London opinion was likely to be on any particular question. Similarly when in England, he explained American conditions to influential leaders there. His version of diplomacy included a wide extension of such personal exchanges of ideas through the medium



COILING THE CABLE AT SHEERNESS, MAY, 1866

of an Atlantic cable. Like many other thoughtful men, he believed that most of the controversies and bitternesses of life arise through lack of understanding of the views of others.

At that time, the transmission of accurate and complete news between America and Europe was so faulty or neglected that the British were not properly informed of the policy of the Northern States or of the favorable operations of their armies in the field. From the beginning of the war, Field urged the need for accurate dispatches being sent to Europe by each steamer. His daughter Isabella recalled that one sultry summer day of 1862 he made a trip to New York from the pleasant resort of Long Branch on the New Jersey coast in order to make sure that a steamer sailing for Europe next morning carried favorable news of the movements of the Northern armies.

From his knowledge of the powerful resources of the British at that time, he realized what a calamity it would be if they should align themselves with the Confederacy, as their upper classes were inclined to do. Since England did not officially espouse the cause of the South, thanks are certainly due to men like Field who used their special knowledge to explain conditions, and their influence to dissuade the British leaders from rash action. The course of American history might have been decisively changed had England been swayed by her dominant statesmen to render official aid to the Southern States. It should be recalled that England at that period was the strongest nation in the world, whereas the Northern States were relatively weak.

In the autumn of 1862, Field was again in London. Reluctantly he had made up his mind that neither the American or British Government was disposed to do much more for the Atlantic Telegraph Company. He had written hopefully to one of the directors: "We can succeed without further assistance from either government, as I believe that an appeal to the public will now get us all the money that we can want,

provided the business is pressed forward in a proper manner." Lord Palmerston, the Prime Minister, finally returned a disappointing answer to the Company and the Washington Government was so involved in the war that it could scarcely be expected to spare any funds. The British Government did, however, signify its willingness to increase its financial aid if a cable was successfully laid.

Arrived in London, Field, with the secretary of the Company, George Saward, went to hear the eminent Baptist preacher, Charles H. Spurgeon. He then sent some news and documents about the war to the humanitarian philanthropist, Lord Shaftesbury. A business colleague, the Right Honorable James Stuart Wortley, arranged an audience for Field with William E. Gladstone, at that time a leading statesman but not yet at the height of his career. Gladstone was so sympathetic with the cause of the Confederacy that he had said that "Jefferson Davis had made an army, had made a navy, and, more than that, had made a nation."

Understanding Gladstone's liking for human documents, Field secured a copy of an illuminating book called *Thirteen Months in a Rebel Prison* to give the great parliamentarian. Gladstone, then Chancellor of the Exchequer, was fifty-three years old and was approaching his first term as Prime Minister. He had not been anxious to meet Field at first, sensing an appeal for financial aid, but the chat impressed him so deeply that next day he wrote a long letter to the engaging American who had so frankly expressed the views of the Washington Government. It was somewhat unusual for a busy statesmen —one of the three or four most important officials in England —to write at such great length to a foreigner whom he had just met.

The letter has historical value because it shows the state of mind of an influential British leader concerning the American Civil War. It was written in Gladstone's own handwriting, with an occasional word crossed out. The letter's refer-

ence to "this destructive and hopeless war" and "your frightful conflict" reveal how deeply sober Englishmen were impressed by the bitter and protracted struggle in a country so closely linked with their own; as does also the reference to the "amount of misery inflicted upon Europe such as no other civil war in the history of man has ever brought upon those beyond its immediate range."

Somewhat strange to modern readers is Gladstone's conviction that victory for the North was impossible, that the spirited and determined Southerners could never be "conquered and kept down." As the letter phrases it, "You have failed because you resolved to do what men could not do." Gladstone did not believe in slavery, which he called "the terrible calamity and curse," but he agreed with General Winfield Scott, the outspoken American who had said to the South: "Wayward sisters, go in peace." Finally, the letter concluded: "Laws stranger than human will are on the side of self-defence; and the aim at the impossible . . . is not only folly, but guilt to boot."

The letter in full is as follows:

11 Carlton House Terrace,
November 27, 1862.

My dear Sir,—I thank you very much for giving me the *Thirteen Months*. Will you think that I belie the expression I have used if I tell you candidly the effect this book has produced upon my mind? I think you will not; I do not believe that you or your countrymen are among those who desire that any one should purchase your favor by speaking what is false, or by forbearing to speak what is true. The book, then, impresses me even more deeply than I was before impressed with the heavy responsibility you incur in persevering with this destructive and hopeless war at the cost of such dangers and evils to yourselves, to say nothing of your adversaries, or of an amount of misery inflicted upon Europe such as no other civil war in the history of man has ever brought upon those beyond its immediate range. Your frightful conflict may be regarded from many points of view. The competency of the Southern States to secede, the rightfulness of their

conduct in seceding (two matters wholly distinct and a great deal too much confounded), the natural reluctance of Northern Americans to acquiesce in the severance of the Union, and the apparent loss of strength and glory to their country; the bearing of the separation on the real interests and on the moral character of the North; again, for an Englishman, its bearing with respect to British interests—all these are texts of which any one affords ample matter for reflection. But I will only state, as regards the last of them, that I, for one, have never hesitated to maintain that, in my opinion, the separate and special interests of England were all on the side of the maintenance of the old Union; and if I were to look at those interests alone, and had the power of choosing in what way the war should end, I would choose for its ending by the restoration of the old Union this very day. Another view of the matter not to be overlooked is its bearing on the interests of the black and colored race. I believe the separation to be one of the few happy events that have marked their mournful history; and although English opinion may be wrong upon this subject, yet it is headed by three men perhaps the best entitled to represent on this side of the water the old champions of the anti-slavery cause—Lord Brougham, the Bishop of Oxford, and Mr. Buxton.

But there is an aspect of the war which transcends every other: the possibility of success. The prospect of success will not justify a war in itself unjust, but the impossibility of success in a war of conquest of itself suffices to make it unjust; when that impossibility is reasonably proved, all the horror, all the bloodshed, all the evil passions, all the dangers to liberty and order with which such a war abounds, come to lie at the door of the party which refuses to hold its hand and let its neighbor be.

You know that in the opinion of Europe this impossibility has been proved. It is proved by every page of this book, and every copy of this book which circulates will carry the proof wider and stamp it more clearly. Depend upon it, to place the matter upon a single issue, you cannot conquer and keep down a country where the women behave like the women of New Orleans, where, as this author says, they would be ready to form regiments, if such regiments could be of use. And how idle it is to talk, as some of your people do, and some of ours, of the slackness with which the war has been carried on, and of its accounting for the want of success! You have no cause to be ashamed of your military character

and efforts. You have proved what wanted no proof—your spirit, hardihood, immense powers, and rapidity and variety of resources. You have spent as much money, and have armed and perhaps have destroyed as many men, taking the two sides together, as all Europe spent in the first years of the Revolutionary war. Is not this enough? Why have you not more faith in the future of a nation which should lead for ages to come the American continent, which in five or ten years will make up its apparent loss or first loss of strength and numbers, and which, with a career unencumbered by the terrible calamity and curse of slavery, will even from the first be liberated from a position morally and incurably false, and will from the first enjoy a permanent gain in credit and character such as will much more than compensate for its temporary material losses? I am, in short, a follower of General Scott. With him I say, ‘Wayward sisters, go in peace.’ Immortal fame be to him for his wise and courageous advice, amounting to a prophecy.

Finally, you have done what men could do; you have failed because you resolved to do what men could not do.

Laws stronger than human will are on the side of earnest self-defence; and the aim at the impossible, which in other things may be folly only, when the path of search is dark with misery and red with blood, is not folly only, but guilt to boot. I should not have used so largely in this letter the privileges of free utterance had I not been conscious that I vie with yourselves in my admiration of the founders of your republic, and that I have no lurking sentiment either of hostility or of indifference to America; nor I may add, even then had I not believed that you are lovers of sincerity, and that you can bear even the rudeness of its tongue.

I remain, dear sir, very faithfully yours,

W. E. Gladstone.

Cyrus Field, Esq.

In answer to this long letter, Field sent some documents on conditions in America and a small book called *Among the Pines*. He felt a conscientious duty to acquaint the leaders of British thought with the exact situation in America, so that they could draw correct conclusions. Gladstone read the book “with great interest” and gave permission for a copy of

his "officious letter," as he called it, to be sent to the Secretary of State at Washington; President Lincoln was interested in it also. Of *Among the Pines*, Gladstone said in a later letter, that "it seems to open to view more aspects of society and character in the slave States than *Uncle Tom's Cabin*, and to be written without any undue and bewildering predominance of imagination."

In a somewhat pompous closing sentence, Gladstone added: "We all vie with one another in fervently desiring that the Almighty may so direct the issue of the present crisis as to make it effective for the mitigation and even for the removal of a system which ever tends to depress the blacks into the condition of the mere animal, and which among the whites at once gives fearful scope to the passions of bad men and checks and mars the development of character in good ones." Gladstone's liberal mind believed in the legal right of the Southern States to secede, although he deprecated slavery and its evils.

While in England, Field was hospitably received by many prominent personages. Although he was known to be a retired merchant—to have been "in trade"—his services in behalf of an Atlantic telegraph were recognized as disinterested and distinguished. The British had heard that when the Atlantic Telegraph Company asked him to act as general manager for laying the cable of 1858, "it was unanimously resolved," as the minutes of the Board of Directors stated, "to tender him, in respect to such services, the sum of £1000 over and above his travelling and other expenses, as remuneration." When he promptly declined this sum, accepting only his expenses, the action did not seem typical of the crass Americans against whom the British aristocracy had been warned. They found Field an interesting and modest man.

The Dowager Duchess of Sutherland invited him to her home frequently and was a cordial friend. Others who enter-

tained him included Sir Culling Eardley (who had given the *fête champêtre* for the crew of the *Agamemnon*), Russell Sturgis (the American architect), Julius Reuter (of the telegraph agency), and Lady Franklin. He also met Sir Charles Wheatstone (the scientist), Captain Douglas Galton (the engineer), Charles Francis Adams (the American minister), and John Bright (the great liberal statesman, not the telegraph engineer), and Bright's colleague, Richard Cobden, renowned exponent of free trade.

Shortly after his return home in the winter of 1863, he received a letter from John Bright, who was one of the few Englishmen in strong sympathy with the North and to whom Field had sent documents and books explaining the Northern stand in the war. This letter from the famous English champion of the middle classes expressed anxiety for the disturbed conditions in America but told of a change of British sentiment in favor of the Northern cause. Such a change in sympathy was what Field had been working for; in fact he was an important influence in bringing it about. Bright's letter was as follows:

London, February 27, 1863.

My dear Sir,—I have to thank you for forwarding to me Mr. Putnam's four handsome volumes of the *Record of the Rebellion*. I value the work highly, and have wished to have it. I shall write to Mr. Putnam to thank him for his most friendly and acceptable present.

We are impatient for news from your country. There is great effort without great result, and we fear the divisions in the North will weaken the government and stimulate the South. Sometimes of late I have seemed to fear anarchy in the North as much as rebellion in the South.

I hope my fears arise more from my deep interest in your conflict than from any real danger from the discordant elements among you. If there is not virtue enough among you to save the State, then has the slavery poison done its fearful work. But I will not despair. Opinion here has changed greatly. In almost

every town great meetings are being held to pass resolutions in favor of the North, and the advocates of the South are pretty much put down.

This is a short and hasty note . . .

Believe me always

Very truly yours,

John Bright.

It is significant of Field's character and ideals that he was on intimate terms with the more liberal element in British public life. Gladstone, Cobden, and Bright were typical in their time as marking the rise to power of the industrial classes associated with trade and democratic standards, as opposed to the landed gentry and hereditary legislators of the conventional English pattern. Yet Field had also an aristocratic element in his nature and had friends in England among the conservative classes. Had he been an Englishman, it is likely that his flair for public service and his faculty for winning support by persuasive argument would have led him to enter politics. Unfortunately for our national welfare, political life in the United States was, and is, less attractive than in England to a man of ability and integrity.

It is interesting to note that John Bright became a supporter of the scheme for an Atlantic cable partly because of his advocacy of free trade. In particular, he and his colleague Cobden wished to make it possible to import inexpensive grain and other foods for the British working man. To buy grain at low prices, knowledge of foreign markets and crop reports was helpful. An ocean cable would facilitate this.

Chapter Eight

WAR AND DISCOURAGEMENT

DESPITE THE APATHY of governments and capitalists, Field had now become a sort of crusader; the indomitable spirit of his father seemed to animate him. Upon his return to the United States early in 1863, he set himself more seriously than ever to the uphill task of raising additional funds for a new cable. There had been financial stringency due to the war, and the rate of exchange of American currency as compared with the British, was unfavorable; the dollar sank to sixty-two cents in gold value in 1863, and below forty cents in 1864. His own firm was having its troubles in common with others. It was necessary, for example, for the firm to sell paper supplies only for cash; even a few days' credit could not be allowed, because of the confused conditions. The general situation made it necessary for Field to take a hard-hearted view of business.

Nevertheless, he continued to address chambers of commerce and associations of merchants and brokers on behalf of an Atlantic cable. He visited Boston, Providence, Albany, and Buffalo and talked so eloquently that small subscriptions for the stock were made. At that time he wrote in a letter: "I never worked so hard in my life." In localities where there were men with capital, he literally canvassed from door to door.

At the end of May, when he sailed for England again, he was able to say: "The total subscriptions in America to the Atlantic telegraph stock to date are £66,615 sterling. Every single person in the United States and British North American provinces that owns any of the old stock of the Atlantic telegraph has shown his confidence in the enterprise by sub-

scribing to the stock." This was a very creditable performance when it is recalled that in the prosperous year of 1856 before any failure of the cable had spoiled the initial enthusiasm, he had been able to dispose of less than a tenth of the original capital of the Atlantic Telegraph Company in America; in fact, of the eighty-eight shares of a thousand pounds each which he brought from London at that time, he was able to sell only twenty-seven shares, and had to pay for the remainder from his own funds. American capitalists were not disposed to speculate in foreign companies and were engrossed in home affairs.

When Field sailed for England at the end of May, 1863, he was so worn by his campaigns that he slept almost continuously for the first few days out of New York, only getting up for an occasional meal. He had become a familiar figure on Atlantic steamers, having made over two dozen crossings of the Atlantic. Later in his career he said that he had made over sixty crossings, on most of which he was seasick. He needed this rest that the ocean interlude gave him, for when again in London he was out early and late, working for the new cable and enlightening the British about conditions in America.

Reports from New York were disturbing as the crisis of the war approached. His firm advised him that when Lee's army advanced into Pennsylvania, business was almost suspended. The English felt that the South was about to win the struggle, and many of them were exultant. The Northern cities were threatened by Confederate audacity, and their people were fearful of the future until the battle of Gettysburg early in July. Field was full of apprehension and very nervous while awaiting news from America, which was delayed in coming.

Shortly after the crisis of Gettysburg, letters from New York told of the disorderly draft riots that disgraced the Northern conduct of the War. These riots raged for four days in the streets of New York, endangering seriously the lives and

property of residents. The end came in a bloody encounter within a block of Field's home at Gramercy Square, when a detachment of soldiers met a mob of rioters at Twenty-First street and Third Avenue. Thirteen men were killed, eighteen wounded, and many were taken prisoners.

The wife of David Dudley Field, whose residence adjoined that of his brother, wrote of this terrifying experience: "My husband got back just in time to save, by prompt and vigorous action, our property. Our poor servants were terribly alarmed; they were threatened by incendiaries who warned them to leave the premises. . . . Think of one hundred and eighty soldiers sleeping in our stable, the officers being fed in the basement. . . . As the rioters approached our house they were met by a company of soldiers that Dudley had just sent for; their glittering bayonets and steady march soon sent them back before they had time to effect their demoniacal purpose." Isabella Field Judson, daughter of Cyrus, recalled that when the rioters approached their home, the servants fled, excitedly taking the cat and a box of tea but leaving silver, ornaments, and other valuables.

The suspense that Field suffered while awaiting news from home was convincing illustration of the need for an ocean cable. His anxiety began on July 16 when a letter dated July 1 arrived from his firm telling of Lee's raid into Pennsylvania. The battle of Gettysburg was fought from July 1 to July 3, and with a cable the news would have been in London on July 4. Instead of that, Field began worrying intensely on July 16—thirteen days after the battle was over. A ship was due on July 18, and Southern sympathizers among the British expected it to bring news of the critical defeat of the Northern army. The steamer was delayed, however, and did not arrive on the day it was due. The next day was Sunday, and no news was forthcoming.

Field was too restless to attend church. Hailing a cab, he drove to the house of the American minister, but Adams was

at church. Going next to the rooms of a friend, Field found him shaving but induced him to come along to the financial district. They drove to Reuter's telegraph agency and overwhelmed the attendant with demands for American news. Although the attendant was under orders not to divulge such early reports from Ireland and feared for his job if he did so, they promised to find him a better place if discharged. With his foot in the door, Field refused to move until he was satisfied. The harassed attendant finally capitulated and announced: "There has been a three days' fight at Gettysburg; Lee has retreated into Virginia; Vicksburg has fallen."

Smiling happily, the two hurried away. Field gave the glad tidings to Adams and others. He took particular delight in informing certain prophets who had been sure that the Northern army could not stop Lee. Indications now were that the worst was over, but a letter dated July 15 told of the beginning of the draft riots in New York and there was more suspense. When Field finally heard that his family was safe, he breathed a sigh of relief. He had sorely needed the services of a cable. How many such cases must have occurred before cable service was established!

His fears allayed, Field resumed his patriotic services to his country by acting as intermediary for a closer understanding between the statesmen of the United States and England. He had shown an informal letter addressed to himself from John Bright, to the Secretary of the Treasury, Salmon P. Chase, who replied to Field at length. Field showed Chase's letter to Gladstone. In this manner, he got these leading men acquainted with the informal views of one another without the pomposity and circumlocution of official communications. He believed that if the statesmen of each country understood the convictions, the difficulties, and the human qualities of the others, they would be less belligerent and more tolerant, and that diplomatic exchanges would be smoothed over.

Chase's letter of August 21, 1863, commenting upon that

of Bright said: "It is marked by the comprehensive sagacity which distinguishes his statesmanship. . . . A letter expressing the same general ideas as are contained in that addressed to you was lately sent by Mr. Bright to Mr. Aspinwall. This letter Mr. Aspinwall kindly enclosed to me, and I read it to the President. I had repeatedly said the same things to him, and was not sorry to have my representations unconsciously echoed by a liberal English statesman. The President said nothing, but I am sure he is more and more confirmed in the resolution to make the proclamation efficient as well after peace as during rebellion. My own efforts are constantly directed to this result. . . . I never admit in conversation or otherwise the possibility that the rebel States can cease to be rebel states and become loyal members of the Union except through the recognition of the condition created by the proclamation, by the establishment of free institutions under slavery-prohibiting constitutions. I not only labor for these ends, but hope quite sanguinely that they will be secured. The public sentiment of the country has undergone a great change in reference to slavery. Strong emancipation parties exist in every slave State not affected by the proclamation, and a general conviction prevails that slavery cannot long survive the restoration of the republic. . . . I do not care to sketch the picture of the great and powerful nation which will then exhibit its strength in America. . . . The war moves too slow and costs too much; but it moves steadily, and rebellion falls before it. Our financial condition remains entirely sound. The new national banks are being organized as rapidly as prudence allows. . . . Whatever else may happen, we shall have gained, through the rebellion, an opportunity, not unimproved, of establishing a safe and uniform currency for the whole nation. . . . I trust you are succeeding well in your great scheme of the inter-continental telegraph. . . . If I had the wealth of an Astor you should not lack the means of construction."

This letter by one of the inner government at Washington during the Civil War makes possible a glimpse behind the scenes. The tone is reassuring and steadfast; not many persons in the country were so calm and far-seeing as the Secretary of the Treasury. It is difficult to realize now that emancipation of the slaves was a subject of such difference of opinion in the North, but history shows that the Washington government fearfully evaded the issue of slavery during the early stages of the War. The emancipation of the slaves as a war measure, however, was followed later by amendments to the Constitution making their freedom permanent.

When Gladstone, Chancellor of the Exchequer, had read Chase's letter, he wrote to Field: "As respects Mr. Chase, he is, if I may say so, a brother in this craft; and I have often sympathized with his difficulties, and admired the great ability and ingenuity with which he appears to have steered his course." In the same letter, Gladstone acknowledged with interest a letter "full of feeling" which Field's daughter Alice had written her mother concerning a visit to the headquarters of the Army of the Potomac. Gladstone liked such unconventional descriptions. The letter is interesting even today, as the fresh impressions of a naive girl impressed by uniforms and flags but saddened by the realities of war.

Alice Field had spent two days and nights at the front in view of the enemy's signals, not far from Bull Run in Virginia. "The whole country is desolated," she wrote. Her party lunched with a general, who was very courteous. "This tent is charming. . . . Our lunch consisted of ham sandwiches, pickles, jelly, ale, and tea." Her quarters one night were in an old mansion still occupied by two saddened Virginia ladies, one of whom had lost a son in the Confederate army. She wrote: "We felt so much for these proud women, obliged to receive Northern strangers, and unable to conceal their fallen fortunes, that we did our best to heal their wounded self-love. After tea we dressed for the ball. I wore the blue tissue, the

white lace waist, and a blue ribbon only in my hair." They drove to the ball in an ambulance; the ball-room was decorated with ragged flags full of bullet holes. General Meade condescended to speak to her twice and next day invited her party to dinner. At the military review, the realistic cavalry charge by yelling soldiers frightened the ladies. They were touched by the appearance of veteran regiments that had but two or three hundred men left. "They march so firmly," she wrote, "carrying their torn banners, with the names of the battles in which they have fought written upon them." Such a letter, as Gladstone noted, brings clearly to the reader something of the pathos of the war. Alice was the only one of Field's four daughters who did not marry; unfortunately she became an invalid in later life and eventually suffered from hallucinations. The full letter follows:

Washington, D. C., February 25, 1864.

My dear Mother,—Since I last wrote I have been to the army front, passing on the way many of the battle-fields whose names bring up sad memories, and finally living for two nights and much of three days within view of the enemy's signals, and in the midst of our own encampments. . . . Early on Monday morning we found ourselves in the government train on the way to Brandeth Station. This is a five hours' journey from Washington, but the time could not have dragged with any one interested in the history of our country. We saw the battle-ground of Manassas; we crossed the Bull Run stream and the fields made memorable by Pope's disastrous campaign. Indeed, along the long line of the railway runs a battle-field—the "race-course," as an officer told me it was called, so often have our troops and the enemy's pursued each other there. Everywhere one sees the evidences of war; the whole country is desolated, and the earth ploughed by the tread of armies; broken earthworks border the brows of the hills, and wherever a camp is seen around it is a stockade or abatis to protect it from Mosby's guerillas, who infest this region.

As we were whirled past these scenes, I listened to the talk of the officers about me, and expressions such as these made the story doubly real: "It was there the cavalry was attacked"; "The

bridge we are now crossing was contested all day in the action of the other day"; "We held those hills where that body of artillery is now moving." So those five hours hurried away, and we did not wake up to the present until we reached Brandeth Station. Here stood lines of ambulances to receive the army's guests, and soon we were placed in an ambulance and jolted over corduroy roads to the general's tent. After an hour's jolting we reached our first destination. The general's tent was one of a large encampment on a hill which commands a view of our fortifications all about the country and those of the rebels across the river, only four or five miles away.

The general received us very courteously, and with him and three of the officers of his staff we lunched in the tent. This tent is charming. At one end blazes in a huge fireplace—open, of course—a bright wood fire; in the centre stands a table, over which hangs a chandelier holding three candles; on one side is the bed; and all about are army chairs.

Our lunch, where the officers presided as hosts and waiters, consisted of ham sandwiches, pickles, jelly, ale, and tea. The three officers were our escorts to our quarters, which we found to be in the old Virginia manor Milton, owned and still inhabited by a well-known family.

They did not smile upon us at first, but we made a great effort to propitiate the two sad-looking Virginia ladies who received us. They both were in mourning for the son of one of them, who was killed during the Peninsula campaign—a rebel. Poor, poor fellow! We felt so much for these proud women, obliged to receive Northern strangers, and unable to conceal their fallen fortunes, that we did our best to heal their wounded self-love. After tea we dressed for the ball. I wore the blue tissue, the white lace waist, and a blue ribbon only in my hair. . . . Our three escorts arrived long before we were ready, but at last we were put again into our ambulance. Just fancy the strangeness of going to a ball in an ambulance, and the ball-room itself, indeed, was as odd a mingling of contrasts. It was an immense boarded room, with a pointed roof from which hung many flags and banners, most ragged and full of bullet-holes, some in ribbons; guns were stacked against the building, and these were draped with evergreens; on either side of the platform used by the band rested cannons pointed towards us; these were almost concealed by banners

again. From this end of the room came excellent music all the evening.

I was made quite happy by General Meade's condescension in speaking to me twice. We had four hours' sleep that night, or rather the next morning. The whole of Tuesday was given to a great review—that of the Second Corps. General Meade reviewed the troops. There were 7000 infantry and 3000 cavalry; these last were Kilpatrick's, and they showed us a cavalry charge; this was very exciting, and their shrieks in rushing upon the supposed enemy so overcame us that we clung to each other in terror. The day was more than May, it was June. Far away rose the Blue Ridge (well named, we thought), while all over the country in every direction were marching the infantry, or the artillery was rumbling, or the cavalry dashing about in the soft Virginia breezes. When General Meade reviewed the army, as he rode with his staff past each brigade the general and officers joined the cavalcade of the commander-in-chief, the band playing and colors flying and bayonets glistening, all in the bright sunlight of that perfect day. I cannot tell you how touching was the sight of those regiments that have been long in the service, and have but two or three hundred left. They march so firmly, carrying their torn banners, with the names of the battles in which they have fought written upon them.

During the review we received an invitation from the general to dine with him, which we accepted. I must reserve a detailed account of this dinner for another letter.

The next morning we bade good-bye to our friends, and returned to the restraints of city life.

After Field returned to New York in September of 1863, he and his wife gave a reception for Sir Alexander and Lady Milne, who had arrived with several British warships at New York. This act of hospitality was of more than ordinary consequence, because the tense relations between the United States and England had at one time prompted an official order from London to the naval commander-in-chief of the North Atlantic and West Indies fleet to abstain strictly from entering any United States port "unless absolutely compelled to do so by the necessities of the service." There had been several

inflammatory incidents at sea that had tested the North's rights and claims in conflict with the British conventions of maritime "rule of the waves."

The Secretary of the Treasury wrote to Field, thanking him for the entertainment of the British officers. His letter competently sums up the situation:

Treasury Department, October 7, 1863.

My dear Mr. Field,—I am glad that you are doing your part towards making the stay of the naval officers of the *Good Queen* in our metropolitan harbor agreeable to them. My faith is strong that the English government will yet see that the interests of mankind demand that there should be no alienation of the two great branches of the Anglo-Saxon family from each other, and will do its part towards removing all causes of alienation by full reparation for the injuries inflicted on American commerce by unneutral acts of British subjects, known to and not prevented by the responsible authorities.

That's a long sentence, but I believe it conveys my meaning. I am sorry I cannot accept the kind invitation of yourself and Mrs. Field (to whom please make my best regards acceptable) to meet these gallant officers.

Yours very truly,
S. P. Chase.

Vice-Admiral Milne reported that he had been informed of a hostile feeling in the Northern States against England "in consequence of the building of the two ships of war in Liverpool for the Southern States, and from various other matters connected with the existing civil war, and that my reception would probably be unsatisfactory. This, however, was not the case; my visit was evidently acceptable, and proved most satisfactory." After leaving New York, Admiral Milne was received so courteously at Washington by President Lincoln and his cabinet that Lord Lyons, the British minister, sent a special note of thanks to the Secretary of State. Seward replied to this in a note that spoke of Admiral Milne's "just, liberal, and courteous conduct in the performance of his du-

ties while commanding H. M.'s naval forces in the vicinity of the United States."

It was fair-minded exchanges such as this that kept the Northern States and England from giving way to the hot resentment and jingoistic promptings occasionally felt over conflicting interests. Field had a tactful hand in these liberal exchanges. By nature he was fitted to extend frank courtesies and speak disarmingly of such neutral matters as ocean telegraphs and British personages whom he had met. His friendship with the British consul-general in New York, Edward M. Archibald, who had helped him in Newfoundland, was a factor in these social amenities.

In the summer of 1863, a temporary revival of optimism induced the Atlantic Telegraph Company to advertise for bids for a new cable. Seventeen were received. The consulting engineers advised accepting that of Glass, Elliott & Company, and a contract was partly made. Field was elated and so confident that he insured his stock against risk. But after he left England, there were delays and difficulties that spoiled the plans for 1864. The reports that now came to him from London were most discouraging; the work seemed at a standstill. Many men in Field's position at this time would have washed their hands of the whole affair and devoted themselves to their own business and family. On the contrary, at the end of 1863, he retired from business in New York for the second time, gave up his downtown office on Beekman street, and went to England, resolved to make greater exertions than ever, despite the war that was still raging. Encouraging factors were at work. A British capitalist, Thomas Brassey, showed interest in his proposals; several others were induced to invest, and a reorganization of affiliated companies improved the outlook.

Since the failure of the 1858 cable, rival schemes had been broached and tried. A suggestion that had been submitted to the Danish government years before was taken up by an American electrician, Colonel T. P. Shaffner. This plan was

to lay an Atlantic cable in four short sections by way of Iceland and Greenland. From the north of Scotland to the Faroe Islands (owned by Denmark) was little more than two hundred miles; from there to Iceland (also Danish) was less than three hundred miles; the longest section, from Iceland to southern Greenland, was seven hundred miles; from there to Labrador was five hundred fifty miles.

These short sections, combined with the shallow depths (except for one place between Greenland and Labrador), were strong advantages. There were handicaps from icebergs and the desolate location of Greenland, but Colonel Shaffner was prepared to prove that these were not serious. In August, 1859, he and his family sailed from Boston in a small vessel for a preliminary survey of the route. After making depth soundings off Greenland and Iceland, he arrived at Glasgow in November and aroused support for his scheme. His daring and initiative caught the public's attention.

In the spring of 1860, the British Government aided this North Atlantic project by sending out a ship to take soundings. To explore the landing places, the promoters purchased a steam yacht, which, carrying Shaffner and a capable party including two Danish officials, sailed from England during the summer, after a friendly visit from Queen Victoria and the Prince Consort. The findings of these two vessels were reported in January, 1861, to a crowded meeting of the Royal Geographical Society, when Sir Leopold McClintock and Sir Charles Bright, who were officially connected with the enterprise, spoke favorably of the technical aspects, such as ice, volcanoes, and the ooze of the ocean bottom. After these interesting preliminaries, however, the scheme fell into the general apathy that often engulfs such far-flung enterprises.

There was also discussion of a South Atlantic route. This involved a cable between Spain and Brazil, by stops at Madeira, the Canary Islands, the Cape Verde Isles, and islands off the South American coast. Another suggestion was a route

from Portugal to the Azores, Bermuda, and the Southern States. Variations of these routes have ultimately been used for cables, but the pioneer work was, of course, not done there.

A still more interesting competition was now under way to attain telegraphic communication between America and the Old World. This was the overland telegraph by way of Alaska and Siberia, sponsored by an energetic American, Perry McDonough Collins. This route was the choice of those who believed that a long ocean cable would never be practicable; and that a land line, with a short cable under Bering Strait, would prove ultimately successful.

Collins, who had gone to California during the gold rush, was a former banker and lawyer of the type successful in San Francisco during pioneer days. Like Field, he was a natural promoter and had far-reaching visions. In 1856, after conferences at Washington with President Pierce, Secretary of State Marcy, and the Russian minister, he was appointed Commercial Agent of the United States for the Amoor river region of Siberia. This manufactured appointment was granted merely to enable him to investigate Russian territory under an official title. After obtaining the consent of the Russian, British, and American governments, with all necessary legal rights, he finally got the Western Union Telegraph Company to issue ten million dollars of special stock for the long overland line.

This financial arrangement was not completed, however, until 1866. During the Civil War, Congress aided by voting the use of a naval vessel and an appropriation for surveying the coast of Alaska, which was still owned by Russia. President Lincoln approved the measure in 1864, and actual construction work was begun in that year. Secretary of State Seward spoke highly of Collins; and Senator Latham, chairman of the committee on military affairs, anticipated success by declaiming: "We hold the ball of the earth in our hand, and wind upon it a network of living and thinking wire, till

the whole is held together and bound with the same wishes, projects, and interests." It was the custom of the time to indulge in grandiose orations and to build huge air castles from maps and prospectuses.

Collins himself declared grandly in a lecture in New York: "America and Europe are to be united in the gentle bands of iron fillets, while Old Mother Asia stands bridesmaid to the distant couple." In his travels through wild parts of Siberia, he imagined himself a future potentate in the Amoor region. He talked of Marco Polo and Genghis Khan.

To anticipate a little, Collins' project was well under way in 1866 and about three million dollars had been spent when Cyrus Field finally laid a successful cable. The news came like a clap of thunder. The construction crews on the overland line in Alaska were summarily discharged. The wire on hand was sold to the Indians for suspension bridges and fish-nets, and the green-glass insulators supplied them with drinking-cups for years. Collins' dreams of Oriental magnificence and splendor crashed in ruins.

It is evident that Field's project for an Atlantic cable between Ireland and Newfoundland was not the only possibility discussed during this period. Other ambitious men were planning and trying different routes and methods. It is interesting to note that some of these routes suggested for inter-continental telegraphs became, several generations later, the routes for aviators steering, as the crow flies, to economize distance while making occasional stops to refuel and rest. The Newfoundland-Ireland route, in particular, has proved popular for air flights as well as for cables.

The British and American governments were willing to encourage any likely cable scheme. Each promoter had his own spokesmen in official circles. That Field was the one finally successful was due to the directness and simplicity of his attack, coupled with his persuasive and organizing ability.

It was, of course, no easy problem to solve, regardless of the route chosen.

The technical aspects were underestimated at first. Knowledge of engineering and of electrical science had to be gained by the slow method of making costly mistakes. Much had been learned, however, by this time concerning the manufacture and laying of cables, and the best system of signaling through them. Human brains and energies were at last destined to succeed in this long fight with nature. Field's initiative and perseverance were at last to be rewarded.

Chapter Nine

PERSEVERANCE, PERSEVERANCE, PERSEVERANCE

THE BRITISH HAVE claimed that they supplied the bulk of the funds for laying the first Atlantic cables, and did most of the scientific and technical work necessary for the ultimate success. These claims are justified. The British capitalists were not only richer and more far-seeing than the Americans at that period, but also more conversant with maritime risks and more sporting in taking a chance. Furthermore, since they had world-wide commercial interests, a large navy, and far-flung colonies, they had most to win by the successful operation of deep-sea cables. London was then the world's center of capital and commercial enterprise.

The British engineers and scientists were better prepared to investigate cables and electrical phenomena. Faraday, the great pioneer in electrical experimenting, had awakened the British scientists in regard to the possibilities of the strange force that at first had been regarded merely as a diversion or minor laboratory aid. Professor William Thomson, in particular, followed the trail blazed by his famous predecessor and formulated the standard theory of the operation of ocean cables. Sir Charles Bright typified the intelligent young Englishman who was devoting his ability to engineering. At that time the American engineering colleges had scarcely got a start; most educated men in the United States had legal, theological, or literary minds.

Compared with the brilliant British scientists, the American Samuel F. B. Morse, electrician for the New York, Newfoundland & London Telegraph Company, was less well prepared. He had received the education and training of an artist, rather than of a scientist, and until he was past forty



THE CLIFFS AT FÖLLHUMMERUM FACING CABLE LANDING

knew very little about electricity. When he offered his services to Field, he was in his sixties. After a long period of privation and ridicule, he was beginning to let his head become a little turned by the applause and honors which the final success of his recording telegraph was bringing him. Field was America's best contribution to the Atlantic cable.

As indicative of the active British interest in technique, the special committee appointed by their Government in 1859 thoroughly reviewed the subject of making, laying, and operating submarine cables. This committee, under the chairmanship of Captain Douglas Galton of the Royal Engineers, enlisted the efforts and knowledge of Sir Charles Wheatstone and William Fairbairn, celebrated scientists, and George P. Bidder, Cromwell F. Varley, Latimer Clark, and Edwin Clark, notable engineers, with the helpful cooperation of George Saward, secretary of the Atlantic Telegraph Company and close friend of Field.

Some of the aspects of the problems investigated by the committee in its nearly two years of deliberations were: the electrical and mechanical properties of copper wire, both pure and alloyed; the properties of gutta percha and other insulating substances; the chemical changes in all these materials when submerged in salt water; the effects of high pressure and low temperature on these substances; the tensile strength and breaking strain of copper wires, and of iron, steel, and tarred hemp separately and combined; the electrical charging and discharging of conductors; and the methods of testing conductors and locating faults.

This elaborate inquiry was followed by an interesting paper before the British Association for the Advancement of Science (of which one of the committee members, William Fairbairn was president) by Sir Charles Bright and Latimer Clark (also of the committee). This paper systematized the methods of electrical testing and greatly clarified the subject. Later Bright and Clark devised a preservative mixture for prevent-

ing oxidation of the iron sheathing of cables; this was in connection with their work for the British Government in laying a cable to India by way of the Persian Gulf. Varley, who helped Field later in the electrical technique, estimated that an Atlantic cable should transmit eight words a minute—and possibly as high as thirteen. Such an optimistic prophecy was ridiculed, but was afterwards fulfilled despite the slowing tendency of self-induction.

The short cables laid by British engineers during this period also brought to light a large fund of information of which the early pioneers had been largely ignorant. The failure of the Red Sea cable, laid by Lionel Gisborne with the cooperation of the Turkish and British governments, showed what to avoid. Its construction was too fragile for the rough places where it lay, and the sections were laid too taut without enough slack for an uneven bottom. So faulty was this cable that a complete message was never sent through the entire length, and the different sections failed one by one. The British Government's loss of a large sum of money in this abortive undertaking spoiled official enthusiasm for several years after 1859.

In 1864, however, the success of the cable to India by way of the Persian Gulf revived public hopes and clarified the technical procedure. The long Mediterranean cables between France and Algeria, and between Malta and Alexandria, had also taught a number of lessons to the British engineers in charge. Moreover, the merger in 1864 of the two leading firms of Glass, Elliott & Company and the Gutta Percha Company into the new Telegraph Construction & Maintenance Company brought into cooperation the most experienced veterans in the making and laying of cables. To Field's great joy this strong corporation promptly subscribed for such a large block of Atlantic Telegraph stock that no more subscriptions were necessary. Over half of the new issue of six hundred pounds was taken up by these contractors.

This was preferred stock, to pay eight percent, and its absorption cleared the way for action.

Another lucky maneuver was now accomplished in the engagement of the splendid (but unprofitable) steamer, the *Great Eastern*. This 22,500-ton ship—the largest in the world—had proved too big for ordinary service. A change of ownership and a favorable contract were now arranged. Such a ship would be able to carry the heavier cable now to be used, whereas two ships had been required to hold the previous cables. The contract with the owners provided that if the cable was not laid successfully, no charge would be made for the ship's services. But if it was laid successfully, the payment would be fifty thousand pounds in shares of telegraph stock.

It was, thus, largely the contractors who financed this latest attempt at laying a cable. Apparently the example of the cables operating successfully in the Mediterranean and Persian Gulf, one of which was over fifteen hundred miles long, had convinced the British that enough was now known of the correct technique to lay an Atlantic cable. The exigencies arising from the Civil War, as Field repeatedly pointed out, also had demonstrated the great need for telegraphic communication between Europe and America.

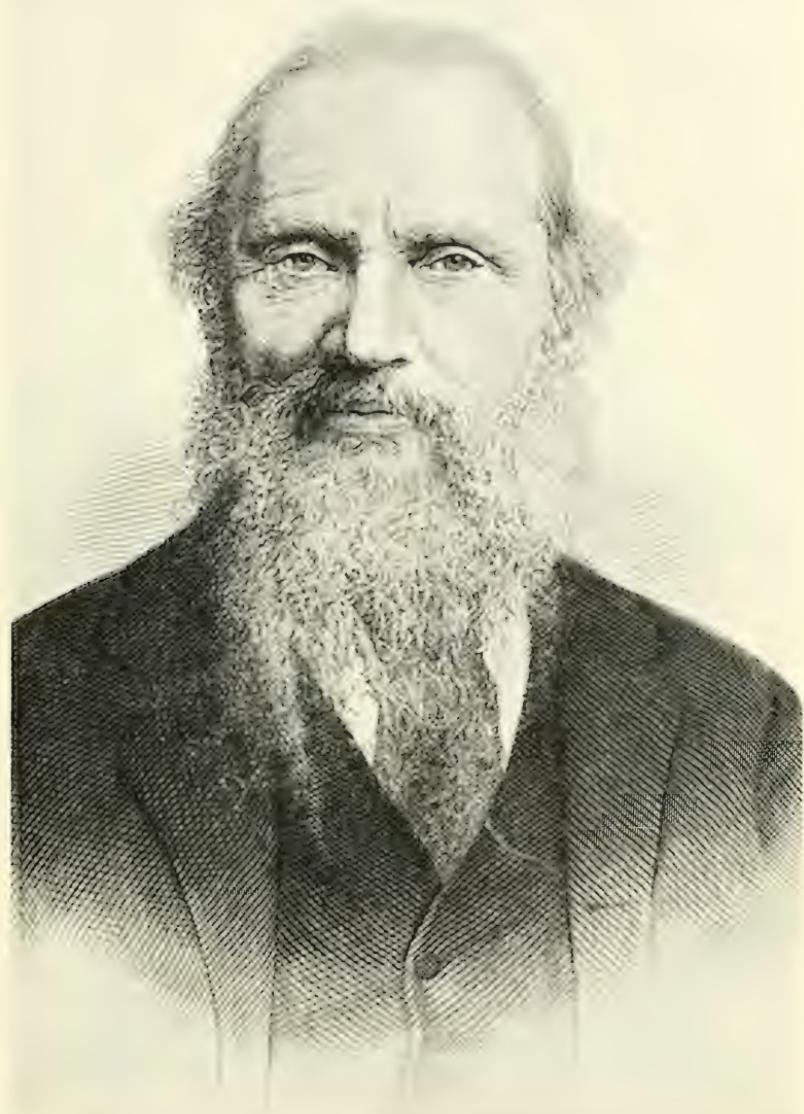
For the new cable, there was talk of using hemp rope around the insulated copper wire, with no iron sheathing, but a compromise was accepted of steel wires encased in thick hemp. The new cable was larger and costlier than had been used before. The earlier cable had been less than three-quarters of an inch in diameter; the new one was an inch and a tenth, including the hemp. This made a relatively larger area of cross-section than at first appears. The old cable had weighed one ton to the nautical mile; the new one weighed thirty-six hundred pounds per mile—nearly twice as much. But immersed in water the new cable weighed only slightly more than the old one. This was helpful, because it thus sank slowly in water, as was desired.

There was the same number—seven—of copper wires in the core as in the first cable, and they were bunched together as before, but the new wire weighed three hundred pounds to the mile compared with a hundred seven pounds before, and it was purer copper. The insulation of gutta-percha and hemp was thicker and better applied than in the first cable, and the steel wires of the armored sheathing were tougher and larger. Much had been learned about making steel in the few years since the first cable, and a given size of wire was now much stronger than before. The new cable would suspend eleven miles of itself in water without breaking, as compared to only five miles of the first cable—an important factor in paying out cable in a rough sea two or three miles deep.

The aim in designing this new cable had not been merely to make a heavier and thicker cable, but to secure strength combined with flexibility. Dead weight of itself is a fault. The old cable, although relatively small, had been almost as heavy as a rod of iron. When paid out from a ship, it sank with a suddenness dangerous for breaking, especially if the ship gave a sudden lurch. Thus in 1857, the first cable broke when the *Niagara*'s stern was tossed up on a wave just as the brakes were shut down.

The relative lightness of the new cable when immersed in water was partly the consequence of encasing each of the steel sheathing wires in thick hempen yarn saturated with preservative. Thus the cable looked like a manila rope; in fact, it was a combination of rope and metal. The purpose of this design was to protect the steel wires from rust due to exposure to air and water, and also to lighten the cable when in water. This precaution proved only partly successful, for the hemp decayed rapidly in the sea, exposing the steel to the water after a few months.

The heavier copper wire used in the seven threads at the center of the cable—the wire that carried the messages—was



WILLIAM THOMSON, LORD KELVIN

the result of careful research by Professor Thomson. He had computed the scientific law for the operating speed of a cable. Curiously enough, the young engineer Charles Bright in 1857 had advised almost the same size of copper wire and insulations as Thomson now decreed, but had been over-ruled by his elders. That is, Bright's good judgment and engineering sense had estimated about what Thomson's research had later proved to be correct, but meantime devastating losses had been suffered.

This incident is typical of how such mistakes occur. The right technique is sometimes a long time in being revealed by investigation of scientific theory. Meanwhile, practical men of sound judgment and professional intuition may have arrived at the same conclusions but, not being able to prove their ideas by accepted formulas, they may be quashed by superiors who actually are in the wrong. Bright had made a few experiments but was looked upon as only a youngster compared with Faraday and Morse.

Many technical mistakes were made during the course of this pioneering. They arose, as a rule, from lack of a sense of proportion. One expert wished to emphasize some special feature; another urged his particular hobby. There were numerous fallacies to be disposed of before the correct procedure was learned. The naive trust in faulty devices by the early officials seems astounding, yet such developments occur often in applied science.

In May of 1864, Field returned to America, feeling much relieved at the sudden brightening of the prospects for a new cable that would operate successfully. In August, he was in Newfoundland to choose a landing place for the new cable. Sailing up picturesque Trinity Bay in the surveyor's steamer, he picked out a little harbor called Heart's Content, where only a fishing settlement of about sixty houses broke the wild landscape. This was twenty miles from the former landing

place, Bay of Bull's Arm, but had quiet deep waters favorable for a cable. The Newfoundlanders took great interest in all this.

There was much more traveling during the summer, in order to arrange cooperation with the telegraph lines in Canada, Newfoundland, and the United States. Field was a frequent patron of railroads, steamers, stage-coaches, and even fishing boats. His activities were designed both to help the cable campaign and to further Anglo-American understanding in regard to the war, which was entering its final stages. He was particularly active socially.

General John A. Dix has recorded (*Memoirs of John Adams Dix*) that in December, 1864, he was a guest, together with the British minister, Lord Lyons, at Field's residence in New York when a telegram came that might have caused international trouble had not those two officials talked the matter over at once. This is typical of Field's intermediary services during a period of unusual stress in the relations of two great countries. Because of his wide acquaintance and amiable nature, he acted somewhat like an unofficial ambassador in his travels back and forth.

In February of 1865 Field visited General Grant's army at the front and saw his friends in Washington, having much to talk over before departing again for England. The ship on which he sailed for Liverpool was commanded by the captain whom Field had picked to take charge of the *Great Eastern*. There were many details to be arranged about equipment and crew for such an exceptional and temporary engagement. For one thing, the *Great Eastern* was too large to be moored near the cable works at East Greenwich, so that the cable had to be cut and coiled on pontoons, after a preparatory soaking in water to accustom it to the elements.

While the new cable was being manufactured in England, Field, temporarily relieved of old worries, took an ocean cruise for a holiday. He was pleased, also, at the impending

end of the Civil War; Lee surrendered that spring. The Suez canal, being constructed by French engineers, was about to mingle the waters of the Mediterranean with those of the Red Sea. Acting as representative of the New York Chamber of Commerce, Field attended the opening ceremony. He met many eminent engineers, including the great Ferdinand de Lesseps. Being an experienced traveler engaged in a unique international enterprise, Field was always welcome at such gatherings; in fact he made a speech or two. While in Egypt, he visited the pyramids and other attractions. During his return trip to London, he heard of the assassination of President Lincoln and was horrified at such a calamity coming so soon after the end of the war.

The cable required over eight months to manufacture; then it was taken by smaller vessels out to the *Great Eastern* and carefully coiled at the rate of two miles an hour. A cable that required months for construction and coiling could be lost in the depths of the ocean in a few seconds. To distribute the enormous weight on the ship, the cable was stored in three tanks—one forward, one amidships, and one aft. These tanks were watertight, so that the cable could be kept under water.

Many visitors, including the Prince of Wales, came from London to watch the interesting preparations. The London newspapers printed descriptions of the work. One of these visitors wrote: "The echo of the sailors' song in the womb of the *Great Eastern* will not be banished from our mind. It raises visions of the future of the mystic iron coil under our feet—how it will roll forth from its narrow berth; how it will sink to the bottom of the Atlantic, or hang from mountain to mountain far below the stormy wave; and how two great nations, offsprings of one race and pioneers of civilization, will speak through this wonderful coil, annihilating distance and time. Who can help dreaming here, on the spot where we stand? For it is truly a marvelous romance of civilization."

The *Great Eastern* had, besides six masts, both a propeller

and paddlewheels. It was now taking on about five hundred men and large supplies of coal and food. The amazed Londoners saw a live cow go on board for the milk supply; also twenty pigs, a hundred and twenty sheep, a dozen oxen, and large flocks of ducks, geese, and chickens. Some one estimated that her total load, including machinery, was almost as great as could have been carried by the entire fleet with which Nelson fought at Trafalgar. To pull up the huge anchor required the united strength of almost two hundred men. It is sad to reflect that such a fine ship proved too big for the ordinary shipping work of her day, and was eventually dismantled as useless.

Many interested persons, realizing that history was being made, asked permission to sail as passengers but were refused. Field and Professor Thomson were allowed to sail, also one newspaper man, the veteran W. H. Russell (later Sir W. H. Russell) of the *Times*, and two artists (O'Neill and Dudley) to depict the scenes of the voyage. Field was the only American. The discipline and formality were strict. The rather haphazard spirit of the earlier expeditions had been replaced by rigid system. Russell's book *The Atlantic Telegraph* gives an excellent account of the daily routine.

At last all preparations were completed, and the giant vessel steamed away on its difficult mission. On the Irish coast, the special shore section of the cable was fastened several miles from the former place, in order to have the advantages of quiet water under secluded cliffs. As the *Great Eastern* was too large for shore maneuvering, a smaller vessel laid the twenty-seven miles of extra-heavy end to which the main cable was spliced. The splicing was completed on Sunday evening, July 23, 1865, ready to begin the contest with the ocean depths.

The starting of an important undertaking on a Sunday was considered a good omen by the sailors, who would have been suspicious of a start made on a Friday. Henry Field, with a

clergyman's interest in such matters, says in his *Story of the Atlantic Telegraph*: "They like, when a ship is moving out of sight of land, that the last sound from the shore should be the blessed Sabbath bells. If that sacred chime were not heard today, at least a Sabbath peace rested on sea and sky. It was a calm summer's evening. The sun was just sinking in the waves, as the *Great Eastern*, with the two ships of war which waited on either hand, to attend her royal progress, turned their faces to the west, and caught the sudden glory."

Even the experienced reporter of the *Times* was moved by this picturesque scene: "As the sun set, a broad stream of light was thrown across the smooth billows toward their bows, as if to indicate and illumine the path marked out by the hand of Heaven." Henry Field's comment on this impressive effect was: "What a sacred omen! Had it been the fleet of Columbus sailing westward, every ship's company would have fallen upon their knees on those decks, and burst forth in an Ave Maria to the gentle Mistress of the Seas. But in that manly crew there was many an eye that took in the full beauty of the scene, and many a reverent heart that invoked a benediction."

The American sponsors of the cable had wished to have a United States warship accompany the British ships on this expedition and on March 1, 1865, had addressed such a request to President Lincoln and the Secretary of the Navy. The request was signed by Peter Cooper, Cyrus W. Field, E. M. Archibald, and three others. But there was still an antagonistic feeling toward England at Washington, and the officials were absorbed in the overwhelming events that marked the end of the War, so that no action was taken. The cable squadron was thus entirely British, with one lone American citizen aboard. Nevertheless, he was an important factor in the work.

To accompany the *Great Eastern*, the British Government had sent two warships, the *Sphinx* and the *Terrible*, which

supplied the official atmosphere and approval of the nation that "ruled the waves." The beginning of this expedition was favorable. The machinery worked so smoothly that "the cable glided into the water with such ease that it seemed but a holiday affair to carry it across to yonder continent," as Henry Field phrased it. But at daybreak next morning the booming of a gun announced trouble as the great ship came to a stop. Said Henry Field: "The electricians, with troubled countenances, were passing in and out of the testing-room, which, as it was always kept darkened, looked like a sick-chamber where some royal patient lay trembling between life and death."

The dreaded disturbance of "electrical continuity" had come to bother them. Professor Thomson's sensitive galvanometer, which utilized a ray of light from a tiny mirror to magnify any disturbance to the passage of the current, had indicated that something was wrong. Messages could still be sent to shore through the eighty-four miles of cable, but apparently there was a leak about ten miles from the ship. The best plan was to turn the ship around, pick up the cable, and cut out the defective section.

Slowly the ponderous ship was reversed and picking-up operations commenced. As Russell described it, "So delicately did she answer her helm, and coil in the film of thread-like cable over her bows, that she put one in mind of an elephant taking up straw in its proboscis." Only about a mile could be raised in an hour. When about ten miles of cable had been examined, the trouble was found. A small needle of wire had been driven into the cable, apparently by accident, and had made an electrical contact between the sea water and the copper wires. The faulty portion was cut out and a splice made.

As Henry Field described this exasperating incident: "It was this pin's point which pricked the vital cord, opening a minute passage through which the electricity, like a jet of

blood from a pierced artery, went streaming into the sea. . . . This insignificant and contemptible source of trouble was snatched from its place, the wounded piece of cable was cut off, and a splice made. . . . A full day and a half had been lost by this miserable piece of wire."

The electrical continuity was now restored, and messages were again flashed clearly between Ireland and the ship. The transmission was so perfect that the electricians at Valentia could distinguish the rolling of the *Great Eastern*, as the waves tossed the ship sufficiently to induce a faint current of electricity from the shifting relations with the magnetic meridian. Much progress was being made in knowledge of the electrical phenomena in long cables.

All went well again for several days. The "drop-off", where the coast shelf changed rapidly to the deep bed of the ocean, was passed safely. Then, when five days out and seven hundred miles had been laid, a worse interruption of current occurred. Apparently a piece of the insulation had been destroyed and the current was escaping into the sea. Once again the ship was reversed and picking-up was begun to find the defect.

The water was two miles deep, and the hauling-in was difficult. But in a few hours the fault was found; it was another piece of wire inserted in the cable. Once again a section was cut out and a splice made. Suspicions now arose over these "accidents".

The pile of cable on deck was examined. Another needle of wire was discovered piercing the cable! Apparently a traitor among the workmen had been paid to wreck the expedition's effort. It was recalled that a similar incident had happened previously on an expedition in the North Sea, when a workman had confessed that he had been hired by a rival company to drive a nail into the cable. Probably the object of such a plot was to depress the stock quotations of the telegraph company on the London Exchange. The failure

of the expedition would mean at least a two-million-dollar drop in the market valuation of the shares.

Volunteer guards were posted to watch the workmen, and for several days things went well. Cyrus Field's hopes rose high; success seemed near. Two-thirds of the cable had been laid; deep valleys in the ocean depths had been safely passed. Two days more and the shallow bottom of the Grand Banks would be reached. Then, on the morning of August 2, as Field kept watch over the men, a grating sound was heard, like a nail in the machinery, and the electricians reported a small fault in communication.

The matter did not seem serious, but the cable was hauled in. While the ship tossed idly on the waves during this process, faults in the machinery caused undue strains in the cable. The injured part almost within grasp, when suddenly it broke and the dark line slipped into the depths of the Atlantic! Another catastrophe had befallen the misfated cable.

Cyrus Field walked into the saloon and, with quivering lips and pale face, announced, "The cable has parted and has gone overboard." The chief engineer, Samuel Canning, had preceded him, muttering, "It is all over! It is gone!" as he hurried to his cabin. The officials who had watched and prayed under severe nervous strains realized that a small accident had ruined the work of months.

The disappointment and gloom were intense. Nearly twelve hundred miles had been laid, but now the ragged end lay on the bottom of the ocean two and a half miles beneath them. Canning decided to grapple for the cable, despite the great depth and his unsatisfactory equipment. He had done a little of this "fishing" in the Mediterranean, but never at such depths.

Two anchors fastened to the end of a piece of wire rope were flung overboard and sank for two hours before striking bottom. In the words of Henry Field: "All night long these iron fingers were raking the bottom of the deep but grasping

nothing, till toward morning the long rope quivered like a fisherman's line." The hauling-in began and went on for several hours. The cable was raised three-quarters of a mile from the bottom when a swivel broke; the cable sank back, carrying with it a large piece of the fishing-rope.

After delays and fogs, another attempt was made, and this time the cable was raised a mile from the bottom when another swivel broke. The rope was getting short, and repairs were necessary. Blacksmith fires were started on deck and glowed weirdly in the fog. Russell wrote: "One might well pardon the passing mariner, whose bark drifted him in the night across the track of the great ship, if, crossing himself, and praying with shuddering lips, he fancied he beheld a phantom ship freighted with an evil crew, and ever after told how he had seen the workshops of the Inferno floating on the bosom of the ocean."

Two more attempts were made, but both failed; the rope was nearly gone. The cable itself had not broken during these fishing trials; it was the grappling apparatus that was at fault. The date was now August 12. The season's work was over, and the ships parted company. Henry Field wrote: "The *Great Eastern* swung sullenly around, and turned her imperial head toward England, like a warrior retiring from the field—not victorious, nor yet defeated and despairing, but with her battle-flag still flying, and resolved once more to attempt the conquest of the sea."

There was great need for what *Blackwood's Magazine* called Field's "unswerving resolution". It referred to him as "full of hope and confidence, and never betraying anxiety or despair even at the most serious disaster—a man whose restless energy is best shown in his spare yet strong frame." This was from a source not inclined to praise promiscuously. *Blackwood's* usually discriminated rather sharply, especially against Americans.

Chapter Ten

THE CABLE IS LAID

AMID THE GENERAL gloom there were grounds for optimism. The report of the technical staff, including Professor Thomson and Samuel Canning, summarized some favorable items. The cable, when not injured, had proved amply strong for all ordinary strains. The improved telegraph instruments had sent more than eight words a minute through the cable to Ireland, clearly and unmistakably; this was in contrast with the cable of 1858 which had been very slow and undependable. The gutta-percha insulation was much better than the earlier type, and seemed to improve after submersion in the cold water of the ocean. The testing-device almost miraculously enabled the electricians to locate the approximate position of a fault in the cable. The paying-out machinery operated perfectly, but needed a steam-engine for pulling in cable before it touched bottom. The grappling process had worked hopefully and only needed better apparatus. The *Great Eastern* had been steady and had kept under good control by the combination of paddle-wheels and propeller. Buoys had been used successfully to mark the location of the lost cable.

Confidence began to revive. The directors of the Company decided that not only should a new line be laid, but that the old cable should be raised, spliced, and completed. This would then give a double line to depend on.

The contractors made a new and liberal offer, by which their profit would depend largely upon their success. Also they agreed to subscribe heavily, if necessary, for the new stock issue. It was finally decided to raise six hundred thousand pounds of new capital by issuing first-preferred, twelve-

percent stock. The former preferred stock would come next for dividends at eight percent, and the common stock would rate four percent dividends.

This seemed like a reasonable arrangement, and Field sailed for America. In November, Captain James Anderson of the *Great Eastern* wrote him that things were not going well. "I am sorry you are not here," he said. "Somehow no one seems to push when you are absent." Field wrote to Saward, the secretary, that unless favorable news came, he would return to England and help.

When he arrived in England on the day before Christmas, 1865, he learned that the Attorney General had just ruled that the Company had no legal right to issue twelve-percent preferred stock ranking over the older preferred stock. The Company's lawyers had advised the opposite, but now the money already subscribed had to be returned and the work of making the new cable stopped. It was not a merry Christmas at all. This flattening out of the plans was typical of what Field had to contend with on many occasions during the long years of effort.

For advice, Field went to one of the cooperating owners of the *Great Eastern*, Daniel Gooch (later made a baronet for his cooperation). His advice was to organize a new company; several other associates concurred. After meetings of the directors of the Atlantic Telegraph Company and of the Telegraph Construction & Maintenance Company, a new corporation was formed under the name of the Anglo-American Telegraph Company. The officials composing these companies were largely the same, and the operations were linked by contracts, which also included the American corporation, the New York, Newfoundland & London Telegraph Company. Field was among the ten who subscribed ten thousand pounds each; and the generous English capitalist, Thomas Brassey, who had come to the rescue a year before, offered to supply sixty thousand pounds if necessary. The six hundred

thousand pounds capital was raised in a fortnight, despite a financial depression in England. The American firm of J. S. Morgan & Company aided the effort. In Field's old age, a younger Morgan was to prove a good friend.

It was now March 1, and in the four spring months, sixteen hundred miles of cable had to be made, to add to the eleven hundred miles remaining from the year before. About two thousand miles would be required for the new cable, and seven hundred for completing the cable of 1865 if it could be grappled for successfully. With improved equipment and better skill in laying, there would be less slack and waste than in the early attempts. The first cable of all, in 1857, had been twenty-five hundred miles long when manufactured; the early cable-laying had been done on rather a zigzag course because of lack of skill in such difficult work.

The new cable was similar to the one of the year before, except that the steel wires for sheathing were galvanized, to protect against corrosion. This dispensed with some of the sticky preservative and added to the lightness and strength. The shore-end section in Irish waters was made, this time, in three weights: the first eight miles out from the coast was especially heavy; then came eight miles of moderately heavy; and finally fourteen miles of ordinary heavy. Altogether, this totaled thirty miles of heavy section before the main cable was spliced on. At the Newfoundland end, where there was less shipping, only five miles of heavy shore cable was considered necessary.

In accordance with the recommendations of the engineering advisers of the year before, a seventy-horsepower steam-engine was added to the machinery, in order to pick up and draw in cable. For grappling the old cable, a twenty-mile length of wire rope was ordered; each of the forty-nine wires of this rope was separately encased in manila hemp. Special grapnels for dragging the ocean bottom were added; these were essentially hooks with double heads.

Improvements had also been made in the electrical testing-devices for discovering faults in the cable and its insulation. The new plan was to test the cable in advance of laying more continuously than previously, so as to prevent an injured section from passing into the water before it could be stopped. Even the lost cable of 1865 could now be tested along its twelve-hundred-mile length in the depths of the ocean; it was found in good condition.

Of these improved testing methods, Henry Field wrote in exuberant phrases: "As when a master of the organ runs his hands over the keys, and tells in an instant if it be in perfect tune, so did these skillful manipulators, fingering at the end of this mightier instrument, declare it to be in perfect tone, ready to whisper its harmonies through the seas." Although a clergyman in a period when Darwin's theories had made science seem dangerous, Henry Field showed a sympathy for new ideas. To him, the discoveries and conquests of natural phenomena were gifts from God to the race of mankind.

The *Great Eastern* had been altered and scraped for the new ordeal. Its propeller was now surrounded with an iron cage, to keep the cable and ropes from getting caught, as had been provided for the *Niagara* and *Agamemnon*. Henry Field wrote of the cable-loading: "The *Great Eastern*, that had done her part so well before, again opened her sides, and the mysterious cord was drawn into her vast, dark, silent womb, from which it was to issue only into the darker and more silent bosom of the deep."

Arrived at the Irish terminus, the fleet laid the thirty miles of shore cable—stiff and heavy to withstand anchors and abrasions. There was a business-like gravity about these operations. The *Illustrated London News* said: "Speech-making, hurrahing, congratulations, and vaunts of confidence were, as it seemed, avoided as if on purpose. There was something far more touching in the quiet and reverent solemnity of the spectators yesterday than in the slightly boisterous

joviality of the peasantry last year. . . . The old crones in tattered garments who cowered, dudheen in mouth, their gaudy colored shawls tightly drawn over head and under the chin—the barefooted boys and girls, who by long practice walked over sharp and jagged rocks, which cut up boots and shoes, with perfect impunity—the men at work winding up and down the hazardous path—the patches of bright color furnished by the red petticoats and cloaks—the ragged garments, only kept from falling to pieces by bits of string and tape—the good old parish priest, who exercises mild and gentle spiritual sway over the loving subjects of whom the ever-popular Knight of Kerry is the temporal head, looking on benignly from his car—the bright eyes, supple figures, and innocent faces of the peasant lasses, and the earnestly hopeful expression of all—made up a picture impossible to describe with justice. Add to this, the startling abruptness with which the tremendous cliffs stand flush out of the water, the alternations of bright wild flowers and patches of verdure with the most desolate barrenness, the mountain sheep indifferent-
ly cropping the short, sweet grass, and the undercurrent of consciousness of the mighty interests at stake, and few scenes will seem more important and interesting.”

This description of the Irish terminus of the cable, with its typical peasants and wild scenery, reveals some of the romantic features of Cyrus Field’s career. For a boy brought up in a staid Massachusetts village, he had a faculty of projecting himself into lively and stirring scenes. The Newfoundland terminus was picturesque also, but in a still more primitive way. Its coast had been settled by people very much like those described in the *London News* article, but their descendants had been living for a number of generations in a remote and inhospitable region.

The telegraph fleet of 1866 was somewhat changed from the year before. To accompany the *Great Eastern*, the British Government was able to spare only one ship—the *Terrible*,

which had also served in 1865. The telegraph company had chartered two other ships, the *Albany* and the *Medway*; the latter carried several hundred miles of the old cable and a short, heavy cable of ninety miles to go across the Gulf of St. Lawrence between Newfoundland and Nova Scotia. Another smaller ship served to lay the Irish shore end.

On board were some of the veterans of former expeditions. "Blessings on their hearts of oak," wrote Henry Field. The chief engineer, Samuel Canning, was there, prepared to do better grappling than a year before, with the aid of the improved apparatus. Another veteran is best described by Henry Field: "That slight form yonder is Professor Thomson of Glasgow, a man who in his knowledge of the subtle element to be brought into play, and the enthusiasm he brings to its study, is the very genius of electrical science." Last but not least, there was Cyrus Field himself—lean and hawk-like, the dauntless crusader and persevering promoter. He had made a trip to America in the spring but had returned. Unfortunately the eloquent Dr. Russell, of the *Times*, was at the scene of war in Germany; the secretary of the Anglo-American Company, John C. Deane, kept the official diary on board. Sir Charles Bright, the capable engineer of the first cable, was at this time a member of Parliament and busy in London, but his partner, Latimer Clark, was at Valentia to represent the firm as consulting engineers for the Anglo-American Company.

The fleet sailed on Friday, the thirteenth of July. Some of the sailors thought that a few hours' delay would do better than starting on such a doubly unlucky day. It was pointed out, however, that Columbus sailed from Spain on a Friday and discovered the New World on a Friday. As a matter of fact, this telegraph expedition reached land on the Newfoundland coast on a Friday just two weeks later.

The ocean end of the thirty-mile shore-cable had been marked by a buoy. The fleet found this, despite the fog, and

hauled up the end from water six hundred feet deep. "Quick, nimble hands," wrote Henry Field, "tore off the covering from some yards of the shore end of the main cable, till they came to the core; then, swiftly unwinding the copper wires, they laid them together, twining them as closely and carefully as a silken braid. Thus stripped and bare this new-born child of the sea was wrapped in swaddling-clothes, covered up with many coatings of gutta percha, and hempen rope, and strong iron wires, the whole bound round and round with heavy bands, and the splicing was complete." This was done in the rain—another bad omen.

As soon as possible, messages were flashed to the telegraph-house on the cliffs of Valentia. The electrical tests showed that the entire two-thousand-mile length was in good condition. The *Terrible* steamed ahead to warn other vessels away; the other two consorts were assigned one to each side. The course chosen was thirty miles south of the cable of the year before, to avoid any conflicts, especially when grappling later.

Cyrus Field felt confident of the new equipment and the increased skill of the technicians. The speed and energy with which the expedition had been organized had cheered him greatly, after all the delays and discouragements of the long years before. As he afterward wrote: "It was only the first day of March that the new company was formed . . . yet such was the vigor and despatch that in five months from that day the cable had been manufactured, shipped on the *Great Eastern*, stretched across the Atlantic, and was sending messages, literally swift as lightning, from continent to continent."

So optimistic had Field felt in the spring of 1866, that he gave a dinner at the Buckingham Palace Hotel on April 5. At this Anglo-American rapprochement, he sat between the American minister, Charles F. Adams, and the Earl of Caithness. The British newspapers, in reporting the dinner, referred to Field's "inspired fervor" and "certainty of success." His friend, John Bright, wrote him two cheering letters at

this time. One of them expresses Bright's concern over American politics of the Reconstruction period—a consequence of his real friendship for the Union and his humanitarian ideals. This letter is as follows:

Rochdale, March 26, '66.

My dear Mr. Field,—I shall not be in London before the 9th April, and therefore shall not be able to dine with you on the 5th, which I much regret.

If you could come down here on your way to Liverpool, I should be very glad to see you. I expect to be at home till the end of the week.

I hope your telegraph labors have been successful, and that before the summer is over you will see your noble effort successful.

I am anxious about what is doing in Washington, but I have lost faith in the President, and think Mr. Seward is allowing himself to be dragged into the mud of his Southern propensities. If Grant continues firm with the Republican party, he may prevent great mischief. The power of the President seems too great in an emergency of this nature. His language shows that his temper is not calm enough for dangerous times. In this he falls immeasurably below Mr. Lincoln.

But if I despair of the President, I shall have faith in the people.

I wish you a pleasant voyage and a complete success in your great undertaking.

Always sincerely your friend,

John Bright.

The other letter from Bright arranged for a meeting of the two men in Liverpool. Although the Civil War was over and the Northern cause had been vindicated, there was still a severe strain in the relations between England and the United States, particularly in regard to the claims under way from Washington for damages over British naval interference during the war. Field's active friendship with influential Englishmen was instrumental in averting outbursts of recrimination and helped to bring the spirit of compromise that finally prevailed. In Bright's second letter, the "Mr. Dudley" referred

to was the artist of the cable expedition. The letter is as follows:

Rochdale, March 28, '66.

My dear Mr. Field,—I will try to come to Liverpool to meet you on Friday, the 6th April, nothing unforeseen preventing.

I shall be glad to spend a quiet evening with you before you sail. I shall be glad also to meet Mr. Dudley.

You seem, as usual, to be hard at work up to the last day of your stay here.

Always truly your friend,
John Bright.

Now that Field was on the *Great Eastern* again, with the cable being paid over the stern, he dismissed from his mind the political entanglements of the two countries. The crisis of his life's work was at hand. After twelve years of unremitting effort, the last great attempt to bridge the ocean was under way. The combined technical skill of hundreds of picked men—skill built up by years of specialized research—was engaging the forces of nature in a final struggle for success. The lessons of the cable had been difficult to learn, but able men had learned them.

On a calm sea the telegraph fleet steamed slowly along. A speed of only five knots (about a hundred twenty miles a day) was considered safest. To curb the powerful machinery of the *Great Eastern* down to this rate, the propeller was stopped and the paddle wheels reduced below their capacity. The official record-keeper, Deane, explained that, since the ship's bottom had been cleaned, the capacity for speed was greater; on the expedition of 1865 the bottom of the *Great Eastern* had been "one incrusted mass of mussels." Deane's *Diary of the Expedition* is not so thrilling as Russell's book of the year before but is a faithful account of a less eventful trip.

So calm was the sea that, in the words of Deane, "the masts of our convoy were reflected in the ocean, an unusual thing

to see. A large shoal of porpoises gambolled about us for half an hour. A glorious sunset, and later, a crescent moon, which we hope to see in the brightness of her full, lighting our way into Trinity Bay before the days of this July shall have ended." The cable-laying went splendidly, and the old bogey of electrical continuity gave not a particle of trouble.

After several days of halcyon conditions, a real shock broke the spell. The cable became snarled in itself as the coils unwound from the drum. The ship was stopped immediately and the paying out halted. In the words of Deane: "No fishing line was entangled worse than the rope was when thrust up in apparently hopeless knots from the eye of the coil to the deck. There at least five hundred feet of rope lay in this state, in the midst of thick rain and increasing wind." Canning was prepared to cut the cable and mark it with a buoy, if necessary. Fortunately this was not necessary, and after three anxious hours, the crisis was over.

This interference of the coils of cable, coming unexpectedly at midnight, shows how difficult it was to guard against accidents. Every precaution that could be thought of had been taken, especially in view of the troubles of the year before, when small needles of wire had been sufficient to spoil the cable. The men who worked in the tank where the cable was coiled had been clothed completely in canvas over-suits, and in slippers instead of shoes with nails. The discipline and cooperation were noteworthy. The artist, Dudley, made excellent sketches and paintings of the men at work under such novel conditions.

So satisfactorily could messages be sent through the cable that European news was transmitted freely to the ship. Those on board followed closely the accounts of the fresh war that was under way—the most momentous for Europe since Waterloo. Bismarck was humbling Austria and consolidating the Germanic states.

Messages received in mid-Atlantic reported that the Ital-

ians were advancing against the Austrians to regain Venice; that the efficient Prussian army was marching triumphantly through the mountains of Bohemia and approaching Vienna; and that the smaller German cities were capitulating to Bismarck's iron will. Twice a day the news bulletins were posted on deck and flashed to the other ships. Included also were accounts of debates in Parliament and quotations from the London stock exchange. The rapid transmission of news of world events had begun; a new era was opening for the newspapers—the era of cables.

The telegraph fleet steamed slowly but successfully along, with little trouble to report. The place in the ocean where the cable of 1865 had broken was passed safely, and everything was still operating well. Deane wrote under date of Sunday, July 22, when nine days out: "Cable going out with unerring smoothness, at the rate of six miles an hour. There has been great improvement in the insulation. This remarkable improvement is attributable to the greatly decreased temperature of, and pressure on, the cable in the sea." Expectations were high; Cyrus Field dreamed of victory.

On the next day the deepest part of the route was passed over without undue strains. Deane recorded: "Mr. Cyrus Field sent a message to Valentia, requesting Mr. Glass to obtain the latest news from Egypt, India, and China, and other distant countries, so that on our arrival at Heart's Content we shall be able to transmit it to the principal cities of the United States. In just eight minutes he had a reply in these words, 'Your message received and is in London by this.' "

By Thursday, July 26, signs of land began to appear and the water was much shallower. Birds were noticed. Henry Field wrote: "They could almost snuff the smell of the land, such as once greeted the sharp senses of Columbus." The arrival had been timed to coincide with a full moon to facilitate night work, but the customary fogs lay over the Grand Banks. Henry Field continued: "For the last two or three nights, as

the round orb rose behind them, banks of cloud hung so heavily upon the water, that the moonlight only gleamed faintly through the vaporous air, and the fleet seemed like the phantom ships of the Ancient Mariner, drifting on through fog and mist." It was a weird effect, not uncommon on the Grand Banks.

The British Admiralty had arranged that its ships stationed on the Newfoundland coast should welcome the telegraph fleet and give help in the unfamiliar waters. The entrance to Trinity Bay is notoriously foggy, and even in mid-summer there are icebergs about. As a matter of fact, one was sighted at this time, rising fifty feet above the water and with unknown extent below. Despite the iceberg, the fog, and the dangers of an unfamiliar coast, the officials on the telegraph fleet were tense with joy and expectancy. They realized that a great historical event was being enacted.

The British ships received the telegraph fleet with cheers. At first the fog was too thick for much of a welcome—even for safety. Deane wrote: "Here we are now (6 a. m.), within ten miles of Heart's Content, and we can scarcely see more than a ship's length." A couple of hours later the fog evaporated, and there were revealed to the anxious mariners the bleak shores of Trinity Bay; also the other ships, the pathway of buoys, and a picturesque group of fishing-boats. The fishermen were astonished to see this enormous steamer in their quiet haven.

On this Friday morning, July 27, 1866, a final message came clearly over the cable from Ireland, just before it was cut for starting work on the shore end. This message ended with the news: "Treaty of peace signed between Prussia and Austria." A new era in the world's news service was assured. The crisis had been passed successfully. The officers of the telegraph fleet went in a body to the little church on shore to give thanks.

Cyrus Field was on land as early as possible, in order to

telegraph to St. John's to engage a ship to repair the short cable between Newfoundland and Nova Scotia, which had been broken by an anchor. England knew all about the success of the expedition. America as yet knew nothing. Even the Newfoundlanders scarcely realized that a tremendous victory had been won. They were pleased at the excitement, but somewhat phlegmatic as to its meaning.

Field had tried, months before, to persuade the New York, Newfoundland & London Telegraph Company to repair its cable across the Gulf of St. Lawrence and to put into good condition its four-hundred-mile line across Newfoundland, which was ten years old. But the directors hesitated to spend money until the cable had been successfully laid. Their hopes had been disappointed before, and they had become cautious. They could scarcely be blamed for such an attitude.

Field's impatience was now intense. The news of the cable-laying had to be sent by boat to Nova Scotia; another vessel was dispatched to fish up and splice the short cable. New York did not receive the glad tidings until Sunday morning—two days after the landing at Heart's Content.

Field's family, who were up the Hudson near Newburgh, saw the river dayboat decorated with flags as they came from church, and heard the glad news that "the cable has been laid!" Telegrams from Field came to his wife and the press. The telegram to Mrs. Field included the sentence, "Now we shall be a united family." For twelve years the head of the family had been going and coming under a strain—at times ridiculed by associates. The family's fortune had been linked precariously with the success of this strange wire at the bottom of the ocean. Now better days were coming!

When the reports of success had spread to the world, Field began to receive messages of congratulation. One came from San Francisco almost at the same instant as one from the French engineer Ferdinand de Lesseps, who was in Egypt. Of this coincidence, Henry Field wrote: "What a meeting

and mingling of voices was this, when a winged salutation flying over the tops of the Rocky Mountains, reached the same ear with a message which had been whispered along the Mediterranean and under the Atlantic; when the farthest East touched the farthest West—the most ancient of kingdoms answering to the new-born empire of the Pacific.” To the world of that period, the quick transmission of news under the Atlantic was a marvelous phenomenon.

To indicate how sharp a change the new cable brought in finance and business, it is only necessary to recall that before this time, American commodities and securities were traded on the British exchanges at prices unknown in the United States until two weeks later. As London was then preeminently the world’s financial center, and Liverpool the great market for cotton, there was always intense interest among American investors and traders as to the quotations prevailing in England. While still on the *Great Eastern*, Cyrus Field had cabled to Ireland the following message: “Please send us Thursday afternoon the price that day for cotton in Liverpool and the London quotations for consols, United States five-twenty bonds, Illinois Central and Erie Railroad shares, and also bank rate of interest. The above we shall send to New York on our arrival, and I will obtain the latest news from the States and send you in return.” Thus did a momentous sequence begin.

It is clear that the laying of a successful cable between Europe and America revolutionized international finance, commerce, diplomacy, and news service. Cyrus Field and his British collaborators showed that the continents could be linked by a message-flashing device thousands of miles long operating under the depths of the ocean. After this date, the news of European capitals was known in America as quickly as in the city of its origin. A new wonder had been worked by man’s conquest of nature. Cyrus Field’s dream had come true!

Chapter Eleven

GRAPPLING FOR THE SEA-SERPENT

THE NEW CABLE was only eighteen hundred fifty-two nautical miles in length—nearly two hundred miles shorter than the cable of 1858. This was due chiefly to the smaller proportion of slack in the new cable—only about eleven percent of the whole. Such a reduction of waste had been attained by laying in a straighter line and by better technique and skill. The greatest satisfaction of the officials, however, was in the ease and reliability with which messages could be sent between Newfoundland and Ireland. There was none of the depressing uncertainty and irregularity of the cable of 1858. The technique of Thomson, Varley, and others had solved these problems.

Despite these pleasing evidences of success, Cyrus Field's restless energy impelled him to proceed with the rest of the work as planned, even as congratulatory messages began to shower upon him in Newfoundland. Said Henry Field: "Though the *Great Eastern* was still lying in the little harbor of Heart's Content, casting her mighty shadow on its tranquil waters, she was not 'content' with her amazing victory, but sighed for another greater still. Though she had done enough to be laid up for a year, still she had one more test of her prowess—to recover the cable of 1865, which had been lost in the middle of the Atlantic."

The cable was landed on July 27. Five days later, on August 1, two ships of the telegraph fleet, the *Terrible* and the *Albany*, sailed for the place, six hundred miles out, where the end of the cable of 1865 had slipped into the ocean. The *Great Eastern* was detained at shore until August 9 to replen-

ish fuel supplies. To insure such a large supply of coal, six ships had been sent from Wales, of which one foundered at sea. Scarcely had the *Great Eastern* cast anchor off shore before these five coaling-vessels came alongside to transfer their cargoes.

There was also transferred from the *Medway* to the larger ship about six hundred miles of cable for splicing to the lost cable. Equipped and ready for the "fishing" expedition, the *Great Eastern* and the *Medway* set out from Trinity Bay, after the Governor of Newfoundland, with an august party, had come down from St. John's to give his sanction to the affair. Cyrus Field was on board, ready for one more contest with the elements.

On Sunday, August 12, the four ships were reunited on the high seas. The *Terrible* and the *Albany* had located the position of the lost cable by astronomical observations; the buoys placed to mark the spot in 1865 had long since disappeared, from relentless buffeting by wind and wave. Some careful planning was now necessary to fish up from a depth of two and a half miles the end of a cable—little more than an inch in diameter. It was no easy job, as the failures of the year before had taught them.

A line of buoys, held by special anchors, was established to mark the lost cable. Each buoy was numbered and surmounted by a flag, visible except in a fog or at night. The key buoys had also a lantern to mark them. All was now ready for the "fishing."

The *Great Eastern* dropped its huge grapnel at the end of a rope composed of forty-nine wires, each encased separately in hemp. Nearly two hours were required for it to reach bottom. The grapnel was then dragged through the slimy ooze and minute shells that covered the ocean bed, occasionally striking what seemed to be rock or boulders. During this process, Cyrus Field sometimes sat on the wire rope where

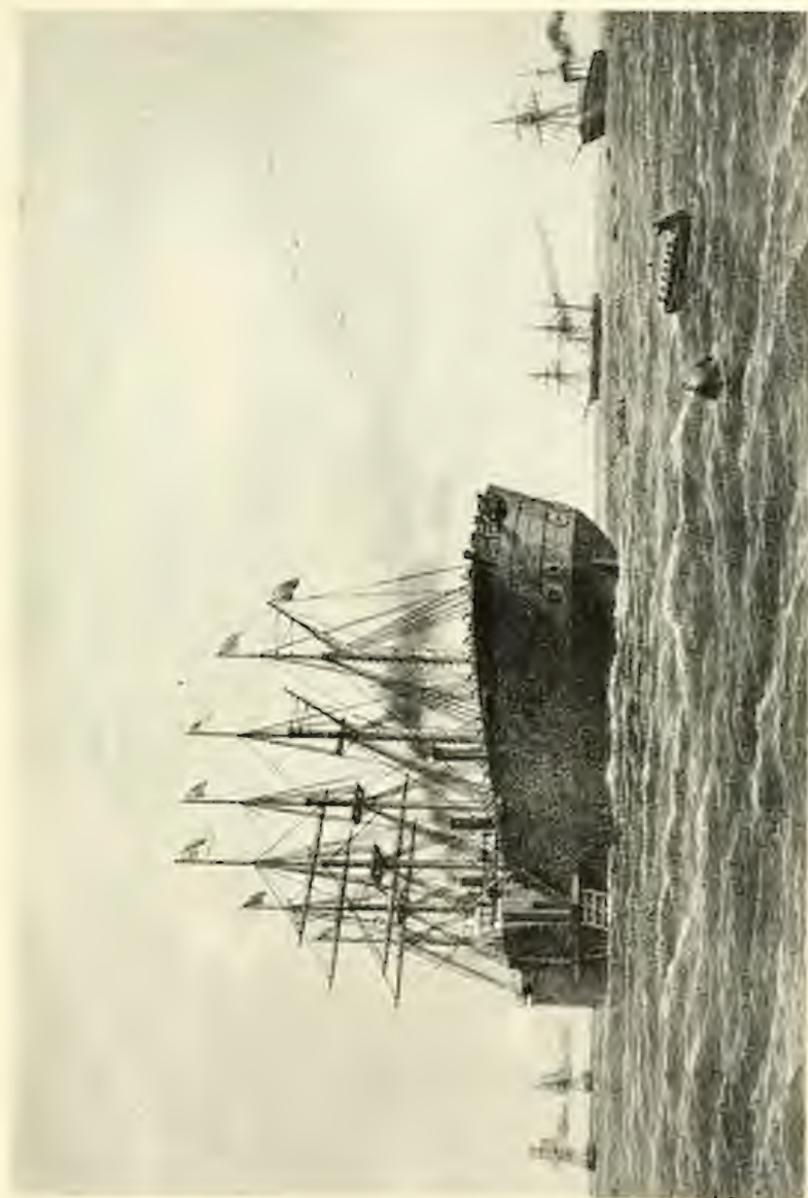
it went over the bow of the ship and could tell by its quiver that it was dragging on the bottom more than two miles beneath him.

As had been the case a year before, it was not so difficult to hook the deep-lying cable as it was to lift the long stretch up to the steamer. On several occasions the cable was hooked and raised nearly to the steamer but something interfered and it fell back. On one attempt the slippery "sea-serpent" (as Henry Field called it) had been brought above the water, so that the crew gave a "hearty English cheer." But after being in sight for five minutes, it broke under the strain and, twisting like a great eel, sank back to the bottom, to the disgust of the frantic seamen who were trying to land it.

The look of this cable was peculiar. The official record-keeper, Deane, wrote: "On the appearance of the cable, we were all struck with the fact that one half of it was covered with ooze, staining it a muddy white, while the other half was in just the state in which it left the tank, with its tarred surface and strands unchanged, which showed that it lay in the sand only half embedded. The strain on the cable gave it a twist, and it looked as if it had been painted spirally black and white. This disposes of the oft-repeated assertion, that we should not be able to pull it up from the bottom, because it would be embedded in ooze."

Some days were too rough for progress, and strong winds drove the ships off their course. They lost valuable portions of the wire rope used for grappling; every delay was reducing the short season available for work. Cyrus Field's diary shows that some days were too calm, when the sea was like glass. A little wind was necessary to make the ship drift over the cable for the hooking process. Trial after trial was made under the varied conditions as the days went by.

On one occasion the *Albany* went off on a trial of its own. During the night, Cyrus Field was awakened by the firing of



THE GREAT EASTERN, WITH ESCORTS

guns. The captain rushed in to say that the cable had been recovered! As they hurried to the deck, they saw the *Albany* coming toward them, with the crew cheering madly. But the cheers were wasted. Next morning the recovered cable proved to be only a fragment two or three miles long that had broken off in previous grappling.

The crews were becoming worn out, and provisions and coal were getting low. Many believed the quest to be hopeless. The *Terrible*, whose men were on half rations, finally had to leave for St. John's after a cruise of nearly four weeks. The remaining three ships moved a hundred miles east to try their fishing luck where the water was not so deep. It was the last desperate resort.

It was the last day of August, and the sea was calm. According to the plans for cooperation, the three ships lined up over the cable. The grapnel was lowered for the thirtieth trial. About midnight the cable was hooked. For five hours the long line was raised slowly, until it was about half way to surface.

The increasing weight of the suspended cable now began to get dangerous. To increase the favorable chances, the *Great Eastern* stopped hauling in, buoyed the cable, and moved westward three miles for a fresh grip. When this second hold was obtained, the *Medway* grappled about two miles farther west.

When the *Medway* had raised its part of the cable nearly to surface, orders were given to heave it on board or break it in the process. The cable broke. This lightened the weight and gave an end to pull in. The *Great Eastern* now began to pull in the loose end slowly and cautiously. This was the new technique that had been worked out.

The cable had been hooked on Friday night. It was now Sunday morning, September 2. As the slippery eel approached the surface, the crews were hushed. Two men were lowered

by ropes over the high bow of the *Great Eastern*. As soon as they saw the slime-covered line that had given so much trouble, they seized it firmly and fastened it with ropes.

"When once it was made fast, all took a long breath," wrote Henry Field. "The cable was recovered. They had the sea-serpent at last. There the monster lay, its neck firmly in their gripe, and its black head lying on the deck. But even then there was no cheering. . . . Men are sometimes stunned by a sudden success, and hardly know if it be not all a dream. . . . Yes—it was the same that they paid out into the sea thirteen months before."

The great question now was whether signals could be sent through this cable to Ireland. If a sharp rock or a pin point had injured it, the transmission might be spoiled. The cable was hauled in to the testing-room, "where the chief electrician was to operate upon it, to see whether it was alive or dead," as Henry Field said. There was an hour's preparation.

The artist of the expedition, Robert Dudley, whose drawings later appeared in the *Illustrated London News*, described this scene: "And now, in their mysterious, darkened haunt, the wizards are ready to work their spells upon the tamed lightning. . . . Professor Thomson, be sure, is here, a worthy 'Wizard of the North'; Cyrus Field could no more be absent than the cable itself. . . . The core of the cable is stripped and the heart itself—the conducting wire—fixed in the instrument. . . . The ticking of the chronometer becomes monotonous. Nearly a quarter of an hour has passed, and still no sign! Suddenly Willoughby Smith's hat is off, and the British hurrah bursts from his lips, echoed by all on board with a volley of cheers." The Irish station had replied; the cable worked.

The conditions at the Irish end in Valentia were described in the *Spectator* of London: "Night and day, for a whole year, an electrician has always been on duty, watching the tiny ray of light through which signals are given, and twice every day

the whole length of wire—one thousand two hundred and forty miles—has been tested for conductivity and insulation. . . . The object of observing the ray of light was of course not any expectation of a message, but simply to keep an accurate record of the condition of the wire. Sometimes, indeed, wild, incoherent messages from the deep did come, but these were merely the results of magnetic storms and earth-currents, which deflected the galvanometer rapidly, and spelt the most extraordinary words, and sometimes even sentences of nonsense. Suddenly, last Sunday morning, at a quarter to six o'clock, while the light was being watched by Mr. Crocker, he observed a peculiar indication about it. . . . The unsteady flickering was changed to coherency, and at once the cable began to speak, to transmit the appointed signals which indicated human purpose and method instead of the inarticulate cries of the illiterate Atlantic—the delirious mutterings of the sea. . . . The words 'Canning to Glass' must have seemed like the first rational words uttered by a high-fevered patient, when the ravings have ceased and his consciousness returns."

The message that came was: "Canning to Glass. I have much pleasure in speaking to you through the 1865 cable. Just going to make splice."

Cyrus Field in a speech made in London months later described his anxiety as he awaited the electrician's test on the *Great Eastern* in mid-ocean. "Never shall I forget that eventful moment," he said, "when in answer to our question to Valentia, whether the cable of 1866, which we had a few weeks previously laid, was in good working order, and the cable across the Gulf of St. Lawrence had been repaired, in an instant came back those six memorable letters, 'Both O. K.' I left the room, I went to my cabin, I locked the door; I could no longer restrain my tears."

As soon as those on the telegraph fleet were assured that everything was satisfactory, they prepared to depart. The *Albany* picked up the buoys and headed for England. The

Great Eastern and *Medway* still had work to do in laying the rest of the 1865 cable to Newfoundland.

A storm was now blowing up, and the waves were soon rising high. The splice had been made, and the crew carefully paid out the patched cable. Cyrus Field sought shelter from the storm in the electrician's room. As he sat there, wondering how his family were, a message came that had been sent from New York to Ireland by the 1866 cable and then re-layed by the 1865 cable to the ship. The message said that his family were well and praying for his safe return. This was striking proof of the efficacy of his work—a demonstration in point.

Except for this storm, no serious trouble was met in laying the nearly seven hundred miles of cable until they were almost at Heart's Content. Then, just after receiving a summary of European news from the *Times* of September 8, a fault showed up in the cable. It was found to be on the ship. The end of a broken wire had been accidentally bent into the core. The injured portion was cut out, and a splice made.

On that same day the *Medway* laid the shore end, and by evening a second cable spanned the Atlantic. Its length was about nineteen hundred nautical miles—a little more than the 1866 cable, but less than the 1858 cable. The technique of cable-laying was now understood. There was cause for pride and elation.

Never did the obscure settlement at Heart's Content witness such a scene as when the telegraph fleet returned to its quiet waters on Saturday, September 8, 1866. Word had been received, of course, by way of Ireland of the successful raising of the old cable on the Sunday before. As the fleet came up the bay, innumerable small vessels gave it a rousing welcome. The shore end of the cable was seized and fastened by willing hands. Field and Canning were hoisted up and cheered tumultuously by a crowd of admirers. The straggling little fish-

ing hamlet had its day of triumph. Undoubtedly these unusual scenes are still discussed there.

The work of the *Great Eastern* was finished. After years of idleness and failure, it had finally written its name high in the annals of the sea. A double victory had been won, and a remarkable lesson in deep-water grappling taught the world. It was time now to return to England. The fight was over, and the victors were to separate.

Cyrus Field parted with regret from his brave comrades of the high seas—many of them veterans of his various expeditions. With deep emotion he shook hands and said goodbye. Seafaring men do not often take such a liking to a financial promoter as to this friendly Yankee of the aquiline nose and bushy whiskers. When he went over the side of the ship, Captain Anderson shouted: "Give him three cheers!" They were given with sincerity and were still ringing in his ears as he watched the great ship depart. He was due back in the United States, where his family awaited him.

In a speech several weeks later, Field said: "It has been a long, hard struggle. Nearly thirteen years of anxious watching and ceaseless toil. Often my heart has been ready to sink. Many times, when wandering in the forests of Newfoundland, in the pelting rain, or on the decks of ships, on dark stormy nights—alone, far from home—I have almost accused myself of madness and folly to sacrifice the peace of my family, and all the hopes of life, for what might prove after all but a dream."

Most of Field's personal fortune had gone into telegraph stock, in order to uphold America's quota in good faith with the British investors. At times he was in dire financial straits, especially during the recurring periods of tight money in the United States. His daughter, Isabella Field Judson, stated that outsiders did not realize to what extremes his family were forced at critical periods. "Not a luxury was allowed," she

wrote, "and during those twelve years any wish that might be expressed could only be gratified 'when the cable is laid.' All waited for that day, but not always patiently, for one or another was often heard to exclaim, 'Oh, if that old cable was only at the bottom of the ocean!' and to this he would invariably answer, 'That is just where I wish it to be.' "

Eighteen months later in London, Field told of the seesaw vicissitudes of his telegraph stock. He said: "It is within the last six months only that we have received the first return from the money we had put at the bottom of the Atlantic. I do not believe that any enterprise has ever been undertaken that has had such fortune: that has been so low, and, one might almost say, so high. I have known the time when a thousand pounds of Atlantic telegraph stock sold in London at a high premium. I have known the time when a thousand pounds of the same stock was purchased by my worthy friend, the Right Honorable Mr. Wortley, for thirty guineas. At one time when I was in London trying to raise money to carry forward this great enterprise, a certificate for ten thousand dollars in the New York, Newfoundland, & London Telegraph Company sold at the Merchants' Exchange in New York by public auction for a ten-dollar bill. On my return home the gentleman handed the certificate to me and asked me if it was worth anything. I said to him, 'My dear sir, what did you pay for it?' and to my mortification he showed to me the auctioneer's bill for ten dollars. I said to him, 'I shall be happy to pay you a good profit on your investment.' He replied, 'No; what do you advise me to do with it?' I rejoined, "Lock it up in your safe. Do not even think about or look at it until you receive a notice to collect your dividends.' The holder now receives a dividend of eight hundred dollars per annum in gold for his investment. If any gentleman here has ever possessed a more fluctuating investment I should like to hear it."

Field's personal investment (or speculation) in telegraph stock was more than a third of a million dollars. This in-

creased to about two million dollars when the Company began operations and cablegrams became popular. At the completion of the two cables, Field was forty-seven years old and had a wife, four daughters and two sons. Besides his family, he was always generous to other relatives and friends, so that he had plenty of use for his income.

Field's strength and weakness lay in his liberality and optimism. He persuaded men to follow his plans by his frankness and open-hearted fairness. There is no doubt that he took enormous chances in risking his family's nest-egg in an adventure on the high seas—a closely-fought contest with the forces of nature. He had no assurance that a cable really could be laid; or that, once laid, it could be operated profitably. Neither his upbringing as a minister's son in an inland village nor his training as a merchant had prepared him for a career as international promoter of a great maritime speculation. His knowledge of engineering and electricity was slight, yet time and again he supplied just the factors needed to bring the difficult project to success.

When the two cables had been successfully laid and their operation was begun, care was taken not to ruin them by too high a charge of electricity, as had been the case in 1858. The copper wires in the core were nearly three times as large as those of 1858. Nevertheless, in the opening messages a speed of only eight words a minute was attempted. As the operators became more experienced, this rate was increased to fifteen or more words a minute. The self-induction of electricity in a long cable tends to slow down the transmission of messages; this was a serious problem at first.

Despite all the care expended, both of these cables broke down a few months later, but they were revived successfully. One was out of order again in the following year. The engineering firm of Bright & Clark advised about these troubles. Neither cable lasted many years in operation, but by the time they gave out, others had been laid and still greater progress

made in manufacturing and operating them. Two rocky ridges on the ocean bed wore out several cables.

An interesting experiment was conducted by the British engineer, Latimer Clark at Valentia after the technique had been perfected. He requested that the Newfoundland electricians join together their ends of the two cables, so that a current could pass from one to the other. This made a total length of continuous cable of over thirty-seven hundred miles. Clark then borrowed a small silver thimble from the daughter of the Knight of Kerry—one of the Fitzgeralds. Into the thimble he placed a little sulphuric acid and a tiny fragment of zinc. The silver, zinc, and acid constituted a miniature battery, and with the charge of electricity so generated, he sent signals back and forth across the Atlantic in little more than a second of time. That is, the signals went from Ireland to Newfoundland and back while the watch ticked twice. The signals that came racing back from this weak charge were sufficient to deflect the ray of light from Thomson's sensitive galvanometer at least twelve inches.

This experiment shows how wrong the electricians of 1858 were when they assumed that a large voltage of electricity was necessary to force signals across two thousand miles of ocean. As Henry Field said, "God was not in the whirlwind, but in the still, small voice. . . . It seemed as if the deep were a vast whispering gallery, and that a gentle voice, murmured in the ocean caves, like a whisper in a seashell, might be caught, so wonderful are the harmonies of nature, by listening ears on remote continents." It must be added, however, that this striking demonstration by Clark was only possible when the insulation was of the superior type used in 1866; the cable of 1858 was not so well insulated even before the high voltages ruined it. An ocean cable tends to leak electricity, because salt water is an excellent conductor and would dissipate the current if there were no insulation.

Another disturbing factor in any long cable is the difference

of electric potential existing between stations widely separated on the earth's crust; this engenders irregular earth currents in the cable. Varley overcame this difficulty by an ingenious device. Such problems had never been anticipated by the early promoters of the cable.

Many improvements by the cable companies have been made in recent years. A modern permalloy cable, containing a single copper wire, uses only twenty-five milliamperes of current. This is one twenty-five-thousandth of the amount necessary to ring a doorbell. An ocean cable is now laid in a furrow plowed in the ocean bed by a deep-sea plow. Thus it is protected against icebergs, anchors, and fishing tackle. Earthquakes, however, still snap cables occasionally. A modern cable costs about \$2000 a mile to manufacture; the upkeep for repairs and maintenance is also high.

Chapter Twelve

HONORS AND REWARDS

WHEN THE *Great Eastern* arrived in England and the public became convinced that British seamanship had achieved a splendid victory, a surge of pride went through the nation. They realized what enormous advantages the submarine transmission of telegrams meant to their far-flung empire. Queen Victoria, who was in Scotland, directed her Prime Minister, the Earl of Derby, to confer knighthood on Captain Anderson, Professor Thomson, Canning, and Glass; and baronetcies on Lampson and Gooch of the Company's officials. She particularly mentioned her regret at not being able to honor Cyrus Field because of his American citizenship. On a previous occasion the Queen had offered a baronetcy to the American banker, George Peabody, in recognition of his philanthropy among the poor of London, but he had declined it. Royal favors are not often refused.

Lord Derby's letter stating the Queen's wishes about these honors was addressed to Sir Stafford Northcote, the chairman, at a dinner to honor the British heroes of the cable-laying. Sir Stafford was president of the Board of Trade; he later became the Earl of Iddesleigh. The letter was in part as follows:

Balmoral, Saturday, September 29, 1866.

Dear Sir Stafford: As I understand you are to have the honor of taking the chair at the entertainment which is to be given on Monday next, in Liverpool, to celebrate the double success which has attended the great undertaking . . . Her Majesty has accordingly been pleased to direct that the honor of knighthood should be conferred upon Captain Anderson, the able and zealous commander of the *Great Eastern*; Professor Thomson, whose distinguished science has been brought to bear with eminent success upon the improvement of submarine telegraphy; and on Messrs.

Glass and Canning, the manager and engineer respectively of the Telegraph Maintenance Company, whose skill and experience have mainly contributed to the admirable construction and laying of the cable. Her Majesty is further pleased to mark her approval of the public spirit and energy of the two companies who have had successively the conduct of the undertaking, by offering the dignity of a baronetcy of the United Kingdom to Mr. Lampson, the Deputy Chairman of the original company, to whose resolute support of the project in spite of all discouragements it was in a great measure owing that it was not at one time abandoned in despair; and to Mr. Gooch, M. P., the Chairman of the company which has finally completed the design. If among the names thus submitted to and approved by Her Majesty, that of Mr. Cyrus Field does not appear, the omission must not be attributed to any disregard of the eminent services which, from the first, he has rendered to the cause of transatlantic telegraphy, and the zeal and resolution with which he has adhered to the prosecution of his object, but to an apprehension lest it might appear to encroach on the province of his own Government, if Her Majesty were advised to offer a citizen of the United States, for a service rendered alike to both countries, British marks of honor, which, following the example of another highly distinguished citizen, he might feel himself unable to accept."

There have been claims that the British did practically all the work in laying the first cables. Something of the contemporary feeling on the subject may be understood by noting the remarks at this dinner in Liverpool. There was a disposition to make Sir Charles Bright the hero of the occasion. Bright had been the chief engineer of the expeditions of 1857 and 1858, although a very young man at the time. Later he had become a member of Parliament and a man of affairs. The firm of Bright & Clark had acted also as consulting engineers to the Anglo-American Telegraph Company, but Bright had not been active in this later work. The English like to honor an "old timer" who has survived the early jealousies.

At the dinner in Liverpool, there were many titled and political dignitaries. The chairman proposed toasts to Her Majesty the Queen, the President of the United States, and

the Prince of Wales. Then he proposed a toast to "the original projectors" of the Atlantic telegraph—Sir Charles Bright and Cyrus Field, John W. Brett having died. Quoting the *Times*: "He begged to couple with the toast the name of Sir Charles Bright, as, perhaps, the foremost representative from all points of view up to the present time (applause). The greatest honor is due to the indomitable perseverance and energy of Sir Charles Bright that the original cable was successfully laid, though, through no fault of his, it had but a short useful existence (great cheering)."

The *Times* account continued: "Sir Charles Bright, M. P., after acknowledging the compliment paid to the 'original projectors' and to himself personally, said that the idea of laying a cable across the Atlantic was the natural outcome of the success which was attained in carrying short lines under the English and Irish Channels, and was a common subject of discussion among those concerned in telegraph extension prior to the formation of the Atlantic Telegraph Company.

"About ten years ago the science had sufficiently advanced to permit of the notion assuming a practical form. Soundings taken in the Atlantic between Ireland and Newfoundland proved that the bottom was soft, and that no serious currents or abrading agencies existed, for the minute and fragile shells brought up by the sounding-line were perfect and uninjured.

"There only remained the proof that electricity could be employed through so vast a length of conductor. Upon this point and the best mode of working such a line, he had been experimenting for several years. He had carried on a series of investigations which resulted in establishing the fact that messages could be practically passed through an unbroken circuit of more than two thousand miles of insulated wire, a notion derided at that time by many distinguished authorities. Mr. Wildman Whitehouse, who subsequently became electrician to the company, had been likewise engaged. On comparing notes later, it was discovered that they had arrived at similar

results, though holding somewhat different views, for his (Sir C. Bright's) calculations, using other instruments, led him to believe that a conductor nearly four times the size of that adopted would be desirable with a slightly thicker insulator. It was this type which the new cables just laid had been furnished with.

"In 1856, Mr. Cyrus Field—to whom the world was as much indebted for the establishment of the line as to any man—came over to England upon the completion of the telegraph between Nova Scotia and Newfoundland. He then joined with the late Mr. Brett and himself (Sir C. Bright) with the view of extending the system to Europe, and they mutually agreed, as also did Mr. Whitehouse later, to carry out the undertaking. A meeting was first held in Liverpool, and in the course of a few days their friends had subscribed the necessary capital. . . .

"The credit attached to these second and third Atlantic cables must mainly rest with the Telegraph Construction Company (formerly Messrs. Glass, Elliott & Company) and their staff. . . . To Mr. Glass, upon whom the principal responsibility of the manufacture devolved, the greatest praise was due for his indomitable perseverance in the enterprise. Then the art of insulating the conducting-wire had been so wonderfully improved by Mr. Chatterton and Mr. Willoughby Smith, that, nowadays, a very feeble current was sufficient to work the longest circuits, an enormous advance on the state of affairs nine years previously. Again, they must not forget how much of the success now attained was due to Professor Thomson and his delicate signaling-apparatus. . . .

"It was satisfactory to find that the cables were already being worked at a very large profit. This system would doubtless be quadrupled within a short period, when the land-lines on the American side were improved (hear, hear, and applause). . . . There was a future for submarine telegraphy to which scarcely any bounds could be imagined."

In view of the attitude of some of the British to minimize Field's part in the achievement, it was natural that expressions of respect from those qualified to know the whole story pleased him most. Sir William Thomson (later to be Lord Kelvin) wrote him from Scotland: "I am sorry I had not an opportunity of saying in public how much I value your energy and perseverance in carrying through the great enterprise, and how clearly you stand out in its history as its originator and its mainspring from beginning to end." Dr. W. H. Russell, the famous correspondent of the *Times*, had said in his book about the expedition which he accompanied: "Mr. Field may be likened either to the core, or the external protection, of the cable itself. At times he has been its active life; again he has been its iron-bound guardian."

From the great French engineer, Ferdinand de Lesseps, who built the Suez canal came a cablegram saying: "Félicitations pour persévérance et grand succès." Captain Anderson wrote a long letter from the *Great Eastern* to Mrs. Field, in which he said: "Mr. Field, at least, never gave out. He never ceased to say, 'It would all come right,' even when his looks hardly bore out the assertion. But at last it did."

Sir Charles Wheatstone, the veteran authority on electricity, was asked by the Secretary of the Privy Council, prior to the conferring of the Queen's honors, to assist the Government by naming the persons most deserving of reward in the work. He named Field, Glass, Canning, Anderson, and Thomson. The paragraph about Field spoke of his "indomitable perseverance." It said further: "Through good and through evil report he has pursued his single object undaunted by repeated failures, keeping up the flagging interest of the public and the desponding hopes of capitalists, and employing his energies to combine all the means which might lead toward a successful issue."

Gladstone, who was soon to be England's prime minister, wrote Field shortly after the landing of the cable. His letter

also expressed praise for the American Government's financial program, about which subject his own experience had made him an able judge. The letter is as follows:

11 Carlton House Terrace, S. W.,
August 28, '66.

My dear Sir,—The message which you did me the honor to send me from Newfoundland at the commencement of this month, embodying in part the contents of a speech delivered by me in the House of Commons a few hours before, was a signal illustration of the great triumph which energy and intelligence in your person, and in those of your coadjutors, have achieved over difficulties that might well have been deemed insurmountable by weaker men. I offer you my cordial congratulations, and I trust that the electric line may powerfully contribute to binding our two countries together in perfect harmony.

The message reached me among friends interested in America and produced a very lively sensation.

We live in times of great events. Europe has not often of late seen greater than those of the present year, which apparently go far to complete the glorious work of the reconstruction of Italy, and which seem in substance both to begin and complete another hardly less needed work in the reconstruction of Germany. But I must say that few political phenomena have ever struck me more than the recent conduct of American finance. I admire beyond expression the courage which has carried through the three-fold operation of cutting down in earnest your war establishments, maintaining for the time your war taxes, and paying off in your first year of peace twenty-five millions sterling of your debt. There are nations that could lay an electric telegraph under the Atlantic and yet could not do this. I wish my humble congratulations might be conveyed to your finance minister. This scale can hardly be kept up, but I do not doubt the future will be worthy of the past, and I hope he will shame us and the Continent into at least a distant and humble imitation.

I remain very faithfully yours,
W. E. Gladstone.

Cyrus W. Field, Esq.

A letter from John Bright to Field exhibited almost too much enthusiasm. This great liberal statesman said in part:

"The world as yet does not know how much it owes to you, and this generation will never know it. I regard what has been done as the most marvellous thing in human history. I think it more marvellous than the invention of printing, or, I am almost ready to say, than the voyage of the Genoese." This letter, written a few days after the Congressional election of 1866, concluded: "Your elections have turned out well. I hope you will yet be 'reconstructed' on sound principles, and not on the unhappy doctrines of the President." Apparently the courageous character of Andrew Johnson was not yet appreciated in England.

A few weeks before this, Bright had said in a speech at Leeds: "Tomorrow is the greatest day in the United States, when perhaps millions of men will go to the polls, and they will give their votes on the great question whether justice shall or shall not be done to the liberated African. . . . A friend of mine, Cyrus Field of New York, is the Columbus of our time, for after no less than forty passages across the Atlantic in pursuit of the great aim of his life, he has at length by his cable moved the New World close alongside the Old. . . . The English nations are brought together, and they must march on together."

In America, Field was once again the man of the hour, the hero of eulogistic celebrations, the man who everybody "knew would win." A dinner was given in his honor by his old associates in the New York, Newfoundland & London Telegraph Company. The chairman of the Company, the well-beloved Peter Cooper, spoke of the Company's origin twelve years before.

He said in part: "We as little dreamed of the difficulties at that time that we were destined to encounter as did the Jews of old dream of the difficulties that they were doomed to meet in their passage to the promised land. We, like the Jews of old, saw the green hills afar off, and, like them, we had but a faint idea of the bare spots, the tangled thickets, and rugged

cliffs over and through which we have been compelled to pass in order to gain possession of our land of promise. We have, however, been more fortunate than the Jews of old; we have had a Moses who was able to lead on his associates, and when he found them cast down and discouraged, he did not call manna from heaven nor smite the rock, but just got us to look through his telescope at the pleasant fields that lay so temptingly in the distance before us, and in that way he was able to inspirit his associates with courage to go on until, with the help of the *Great Eastern*, and the means and influence of the noble band of men that Mr. Field has been able to enlist in the mother country, we have at last accomplished a work that is now the wonder of the world. . . . I trust our united efforts will hasten the glorious time when nations will have war no more; when they will beat their swords into ploughshares and their spears into pruning-hooks."

The Chamber of Commerce of New York arranged a banquet at which Field was toasted as "the projector and mainspring of the Atlantic telegraph . . . his fame belongs to us, and will be cherished and guarded by his countrymen." The members had requested him in advance that "they may hear from your lips the story of this great undertaking." Field spoke frankly and vividly of the vicissitudes of the long effort, and in particular of the great grappling expedition when "a slimy monster fresh from the ooze of the ocean bed" was snared and dragged on board after many heart-breaking failures; then tested for electrical response while the crew held its breath. As a sufferer from seasickness, he emphasized the disadvantages under which they often labored from storms, rough seas, and fogs. He made clear also the human element in the long vigils, the bitter disappointments, and the hard road to an understanding of the technical problems. Such a talk showed Field at his best—courageous, modest, and informal, a combination of New England background enlivened

by New York humanness and polished by international contacts. It made clear to his auditor the qualities of the man who had proved equal to a great task.

He said in part: "It was the worst weather I ever knew at that season of the year. In the dispatch which appeared in the New York papers you may have read, 'The weather has been most pleasant.' I wrote it 'unpleasant.' We had fogs and storms almost the whole way. Our success was the result of the highest science combined with practical experience. Everything was perfectly organized to the minutest detail. . . . Captain Moriarty had, with Captain Anderson, taken most exact observations at the spot where the cable broke in 1865, and these were so exact that they could go right to the spot. After finding it, they marked the line of the cable by a row of buoys, for fogs would come down and shut out sun and stars, so that no man could take an observation. These buoys were anchored a few miles apart. They were numbered, and each had a flagstaff on it, so that it could be seen by day, and a lantern by night. Thus having taken our bearings, we stood off three or four miles, so as to come broadside on, and then casting over the grapnel, drifted slowly down upon it, dragging the bottom of the ocean as we went. At first it was a little awkward to fish in such deep water, but our men got used to it, and soon could cast a grapnel almost as straight as an old whaler throws a harpoon. Our fishing line was of formidable size. It was made of rope, twisted with wires of steel, so as to bear a strain of thirty tons. It took about two hours for the grapnel to reach bottom, but we could tell when it struck. I often went to the bow and sat on the rope, and could feel by the quiver that the grapnel was dragging on the bottom two miles under us. But it was a very slow business. We had storms and calms and fogs and squalls. Still we worked on day after day. Once, on the 17th of August, we got the cable up, and had it in full sight for five minutes—a long slimy monster, fresh from the ooze of the ocean's bed—but our men began to cheer

so wildly that it seemed to be frightened, and suddenly broke away and went down into the sea.

"This accident kept us at work two weeks longer; but finally, on the last night of August, we caught it. We had cast the grapnel thirty times. It was a little before midnight on Friday night that we hooked the cable, and it was a little after midnight Sunday morning that we got it on board. What was the anxiety of those twenty-six hours? The strain on every man's life was like the strain on the cable itself. When finally it appeared it was midnight; the lights of the ship, and in the boats around our bows, as they flashed in the faces of the men, showed them eagerly watching for the cable to appear on the water. At length it was brought to the surface. All who were allowed to approach crowded forward to see it; yet not a word was spoken; only the voices of the officers in command were heard giving orders. All felt as if life and death hung on the issue. It was only when it was brought over the bow and on to the deck that men dared to breathe. Even then they hardly believed their eyes. Some crept towards it to feel of it—to be sure it was there. Then we carried it along to the electrician's room to see if our long-sought treasure was alive or dead. A few minutes of suspense and a flash told of the lightning current again set free. Then did the feeling, long pent up, burst forth. Some turned away their heads and wept. Others broke into cheers, and the cry ran from man to man and was heard down in the engine-rooms, deck below deck, and from the boats on the water and the other ships, while rockets lighted up the darkness of the sea. Then with thankful hearts we turned our faces again to the west. But soon the wind arose, and for thirty-six hours we were exposed to all the dangers of a storm on the Atlantic. Yet in the very height and fury of the gale, as I sat in the electrician's room, a flash of light came up from the deep which, having crossed to Ireland, came back to me in mid-ocean telling that those so dear to me were well.

"When the first cable was laid in 1858 electricians thought that to send a current two thousand miles it must be almost like a stroke of lightning. But God was not in the earthquake, but in the still, small voice. The other day Mr. Latimer Clark telegraphed from Ireland across the ocean and back again with a battery formed in a lady's thimble! And now Mr. Collett writes me from Heart's Content: 'I have just sent my compliments to Dr. Gould, of Cambridge, who is at Valentia, with a battery composed of a gun cap, with a strip of zinc, excited by a drop of water, the simple bulk of a tear!'"

Among the guests at this banquet was General George G. Meade, who was loudly acclaimed as "the hero of Gettysburg," to which he answered that there was but one hero on this occasion and that he, the General, had traveled a hundred miles to pay him honor, after watching anxiously Field's hard struggles and disasters. "The heartiness of this soldierly reply," wrote Henry Field, "was echoed by the bluff old warrior, Admiral Farragut, who had been so often through the smoke and flame of battle, that he knew how to appreciate not only common courage, but the desperate tenacity that holds on in spite of disaster." Chief Justice Salmon P. Chase sent his congratulations from Washington "to Mr. Field upon the success of his grand undertaking—the most wonderful achievement of civilization." Secretary of State Seward, General Grant, President Johnson, and many other dignitaries sent eulogistic messages.

The Common Council of New York passed resolutions at this time couched in the pompous language of the period congratulating Field on "the success attending his unexampled perseverance in the face of almost insuperable difficulties, and his fortitude and faith in the successful termination of the herculean labor to which he has devoted his rare business capacity, his indomitable will, and his undaunted courage for a series of years—that of uniting the two hemispheres by telegraphy." This formidable array of words was merely part of

the "whereas" paragraph. There were also two "resolved" paragraphs. A "copy of the foregoing preamble and resolution," properly engrossed and duly authenticated was "presented to Cyrus W. Field, Esq. as a slight evidence of the appreciation by the people of this city of the service he has rendered in uniting the old and new worlds in the electric bonds of fraternity and peace." Obviously these city fathers were more enthusiastic in words after the event than they had been in subscriptions to Field's pleas before the event. Such is fame, and such is human nature!

Harper's Magazine of October, 1866, spoke glowingly of this "great historical event" and predicted: "The name which will be always associated with this historical event is that of the man who has so patiently and unweariedly persisted in the project, Cyrus W. Field. With an undaunted cheerfulness, which often seemed exasperating and unreasonable and fanatical, he has steadily and zealously persevered, no more dismayed or baffled by apparent failure than a good ship by a head wind." This sentiment implies that, until final success was achieved, Field's optimism and persistent faith exasperated many stout American burghers. What a difference success makes!

A curious train of events now began in regard to a gold medal voted to Field by Congress. Henry Field considered such a medal the equivalent of a knighthood. A resolution was introduced in the Senate in December, 1866, expressing the thanks of Congress in the name of the country for Field's "foresight, courage, and determination" etc. The two Houses expedited its progress and passed it unanimously. President Johnson signed it promptly.

The resolution specified "that the President of the United States be requested to cause a gold medal to be struck, with suitable emblems, devices, and inscription," and "that when the medal shall have been struck, the President shall cause a copy of this joint resolution to be engrossed on parchment,

and shall transmit the same, together with the medal to Mr. Field, to be presented to him in the name of the people of the United States of America."

As this resolution specified, the medal was struck "with suitable emblems, devices, and inscription," but Field did not receive it for many months, and then he received a facsimile—not the original. What happened illustrates a form of governmental stupidity that would be pathetic if it were not ludicrous. After the medal was "struck," it was exhibited at a meeting of the President's cabinet. It was then handed to a clerk in the Treasury department with instructions to "put it carefully away." There was now a dignified delay. Over a year after the resolution was passed, Field was notified that the medal would be presented to him in Washington. But upon his arrival there he was requested not to mention the subject. No one seemed to know where the medal was. Another medal was ordered, and made. In January, 1869, two years after the resolution was passed, a letter came to Field from Secretary of State Seward carrying out the terms of the resolution in a formal and brief manner, as follows:

Department of State,
Washington, January 7, 1869.

Sir,—Pursuant to the resolution of Congress of March 2, 1867, the President has caused to be prepared for presentation to you, in the name of the people of the United States, a gold medal, with suitable devices and inscriptions, in acknowledgment of your eminent services in the establishment of telegraphic communication by means of the Atlantic cable between the Old World and the New. This testimonial, together with an engrossed copy of the resolution referred to, is herewith transmitted to you by direction of the President.

I am, sir, your obedient servant,
William H. Seward.

This medal transmitted by the Secretary of State was a facsimile, not the original. What happened to the original remained a mystery until 1874, more than seven years after the

resolution was passed. At that late date, the Treasury clerk to whom the medal had been entrusted for "safe keeping" and who had been forgotten, asked the Secretary of the Treasury why Field had never been given the medal which had been made for the purpose and which he, the clerk, had been keeping carefully as instructed to do. Governmental procedure in this case had been slow but safe.

Field was then in England. He received a cablegram from Washington saying: "The missing original Congressional gold medal, a duplicate of which was made and presented to you, has been found. Its value is about six hundred dollars. Secretary Treasury wishes informally to know whether you wish to possess it. If so, it will be given to you on receipt of value."

In other words, Field could have the medal struck for him by paying six hundred dollars for it. When he returned home and was in Washington, he called at the Treasury office for it. But there had been another misunderstanding. He was told that the medal had been sent to the United States mint in Philadelphia. A telegram was dispatched to the director of the mint. It arrived just in time to prevent a re-melting. Field finally received the medal but found that a hole had been drilled in it!

Some pleasanter experiences marked his visits to Europe after the first enthusiasm had subsided. He sailed in February, 1867, for England. While in London, he received a letter from Paris signed by a number of Americans temporarily there (including Professor Morse), inviting him to come to Paris for a public reception in his honor. Field was not able to accept this generous invitation because of engagements in England.

The American Chamber of Commerce of Liverpool wrote to him at this time, stating that it had voted gold medals to Canning, Anderson, Willoughby Smith, and himself in commemoration of the successful completion of the Atlantic cable. The medals were now ready, and it was proposed to present

them at a banquet in Liverpool. The Liverpool *Daily Post* of March 15, 1867, said in part of this affair: "The members of the American Chamber of Commerce in this town gave a splendid banquet last night, in the Law Association Rooms, Cook Street, to Sir Samuel Canning, Sir James Anderson, Mr. Cyrus W. Field, and Mr. Willoughby Smith, the layers of the Atlantic telegraph cable, on which occasion a magnificent solid gold medal was presented to each of these gentlemen. . . . The chairman in proposing 'The projector and the associates in the laying of the Atlantic cable' said. . . . 'But it is good for our humility—a virtue in which we do not naturally excel—to remember that the first credit of that success is due, not to an Englishman, but to an American, Mr. Cyrus Field. He is the projector of the plan, and had it not been for his tenacity of purpose, his faith—which, if it did not remove mountains, at least defied oceans to shape his purpose—the plan would long ago have been abandoned in despair. In this tenacity and utter incapacity to understand defeat, Mr. Field is a representative man of the Anglo-Saxon race wherever found'. . . . Mr. Field said: 'I think I may safely affirm that never before were so many men brought together in one enterprise who were so pre-eminently fitted by diversified endowments and by special knowledge and experience to solve the problem of the Atlantic telegraph. Most fortunate, moreover, were we in finding such a ship as the *Great Eastern*, and such a commander as Sir James Anderson.' "

These speeches brought out the point that the final success of making, laying, and operating the cable was due to the systematic cooperation of many highly-skilled experts using elaborate and unique equipment. When the little group of New York capitalists had met in Field's dining-room in 1854 to discuss the scheme, they had not realized that they would become involved in such complicated and difficult ramifications. They did not understand the technical skill and the financial additions that would be required. Nor did

they foresee that a long, disastrous war would interrupt their plans. To them the enterprise had seemed short and simple; it proved long and expensive.

While Field was in England on this occasion, he received a letter from the Prime Minister, Lord Derby, expressing once more Queen Victoria's regret at not being able to honor the American projector of the cable. This letter indicates that it was not merely among the liberal statesmen, like Gladstone and Bright, that Field's work was appreciated, but also among the aristocracy—a fact brought out during the next year, when additional British respects were paid to him. Lord Derby's letter was as follows:

St. James Square, March 17, 1867.

Sir,—Understanding that you are on the point of returning to the United States after a short visit to this country, I am anxious to take the opportunity of saying to yourself, what in the Queen's name I was authorized to write to the chairman of the banquet in the autumn at Liverpool, how much of the success of the great undertaking of laying the Atlantic cable was due to the energy and perseverance with which, from the very first, in spite of all discouragements, you adhered to and supported the project. Your signal services in carrying out this great undertaking have been already fully recognized by Congress, and it would have been very satisfactory to the Queen to have included your name among those on whom, in commemoration of this great event, Her Majesty was pleased to bestow British honors, if it had not been felt that, as a citizen of the United States, it would hardly have been competent to you to accept them. As long, however, as the telegraphic communication between the two continents lasts your name cannot fail to be honorably associated with it.

Wishing you a safe and prosperous return to your own country,
I have the honor to be, sir,

Your obedient servant,
Derby.

Cyrus W. Field, Esq.

A somewhat similar letter of appreciation was received at this time from the Speaker of the House of Commons, J.

Evelyn Denison, who thanked Field for his services to England. Curiously enough, the progressive State of Wisconsin, in what was then the wilds of the Northwest, also voted Field a gold medal, although it profited less by the cable than the Eastern States. He sailed for America in the familiar *Great Eastern* and arrived in New York in April of 1867. Something of his hopes for the cable as a preventive of war was expressed at this time in a poem called "Cable Hymn," written by the New England Quaker, John Greenleaf Whittier. It contains some vivid phrases:

*O lonely bay of Trinity,
O dreary shores, give ear!
Lean down unto the white-lipped sea,
The voice of God to hear.*

*From world to world His couriers fly,
Thought-winged and shod with fire;
The angel of His stormy sky
Rides down the sunken wire.*

*What saith the herald of the Lord?
'The world's long strife is done;
Close wedded by that mystic chord,
Its continents are one.*

*And one in heart, as one in blood,
Shall all her peoples be;
The hands of human brotherhood
Are clasped beneath the sea.*

*Through Orient seas, o'er Afric's plain,
And Asian mountains borne,
The vigor of the Northern brain
Shall nerve the world outworn.*

*From clime to clime, from shore to shore,
Shall thrill the magic thread;
The new Prometheus steals once more
The fire that wakes the dead!*

*Throb on, strong pulse of thunder! beat
From answering beach to beach;
Fuse nations in thy kindly heat,
And melt the chains of each!*

*Wild terror of the sky above,
Glide tamed and dumb below;
Bear gently, ocean's carrier-dove,
Thy errands to and fro.*

*Weave on, swift shuttle of the Lord,
Beneath the deep so far,
The bridal-robe of earth's accord,
The funeral shroud of war.*

*For lo! the fall of ocean's wall,
Space mocked and time outrun;
And round the world the thought of all
Is as the thought of one!*

*The poles unite, the zones agree,
The tongues of striving cease;
As on the Sea of Galilee
The Christ is whispering Peace!*

One of the matters to which Field had attended while in England was an adjustment of friction between the New York, Newfoundland & London Telegraph Company and the Anglo-American Telegraph Company. The former Company's four-hundred-mile line across Newfoundland was often out of order, and similar annoyances and interruptions had occurred in the connecting lines of northern Nova Scotia, where snowfall was heavy. What was needed, it was obvious, was a better link between eastern Newfoundland, where the cable terminus was situated, and the main lines of Nova Scotia. Acting for the New York, Newfoundland & London Company—the original corporation sponsored by Field and his neighbors—he signed a contract with the Telegraph Construction & Maintenance Company for a submarine cable to be laid

from Placentia in eastern Newfoundland to Sydney, Nova Scotia. This cable would make it unnecessary to use the Newfoundland land line on which Matthew Field had expended so much effort during two and a half years in the backwoods.

After his return to America, Cyrus Field went to Canada and Newfoundland for several weeks. There were many minor troubles to straighten out. For example, complaints were made frequently at first of mistakes in the cablegrams. One message saying "Protect our drafts" was delivered as "Protest our drafts"—a serious change of meaning. Another message saying "Letter thirteen received, you better travel" was delivered in Paris as "Letter thirteen received, son pretty well."

The early cables were not managed efficiently. Autocratic British officials antagonized the public, especially in America. Field protested vigorously against such untactful management and spoke his mind freely. There was much criticism, for example, of the Anglo-American Company's early opposition to code messages. The officials in London, apparently in a fit of suspicion or officiousness, decreed that no secret meanings should lower the dignity of their hard-won cables. Field considered this a mistaken policy. He believed in satisfying the customers, rather than treating them suspiciously as the British tended to do. In a letter to the Secretary of the Company in London, he criticized the prohibition and argued for a more genial attitude, which his long experience as a merchant had shown him was the best method of attracting and holding customers. This letter, as reproduced here, indicates something of the difference in commercial policies that was to distinguish British and American business methods for several generations to come, and that was to enable the United States to forge ahead so rapidly in world trade. The letter was as follows:

New York, October 1, 1867.

My dear Mr. Deane,—In relation to the tariff, and particularly that part touching *ciphers*, I must again appeal to you, and I do wish my words could carry conviction to your mind of the fatal tendency of the course we are carried into by your rules. . . .

But let us inquire if we are benefited by this rule of strictness. We see that very few acknowledged cipher messages are forwarded. There are people who can make messages apparently in plain text but which are actually cipher, and in the various attempts to get much into little there lies the germ of many disputes between customers and receiving clerks. The truth is, we make nothing and lose much. Many who were our best customers now use the line only in cases of emergency, whereas they would use it daily if our terms were liberal. The U. S. government and the representatives at Washington of all the foreign governments are determined to use us as little as possible. We are reviled on every side. The government, the press, and all the people will do all in their power to encourage a competing line. Something must be done to arrest this feeling. Why not try reduction for three months, and see what the effect will be. . . .

I remain, my dear Mr. Deane,

Very truly your friend,
Cyrus W. Field.

Eventually Field's policy was adopted, and the pompous British officiousness was curbed. After the success of these two pioneer cables, completed after so much hard labor and worry, other cables were laid across the Atlantic. Three years later, for example, France was connected to America by a line to the little island of St. Pierre just south of Newfoundland, and thence to the mainland by a shorter cable. This was laid by the *Great Eastern* with some of the same staff as in 1866. This line from Brest to St. Pierre was nearly twenty-seven hundred nautical miles—considerably longer than the Newfoundland cables. This cable proved costly in repairs and did not wear well.

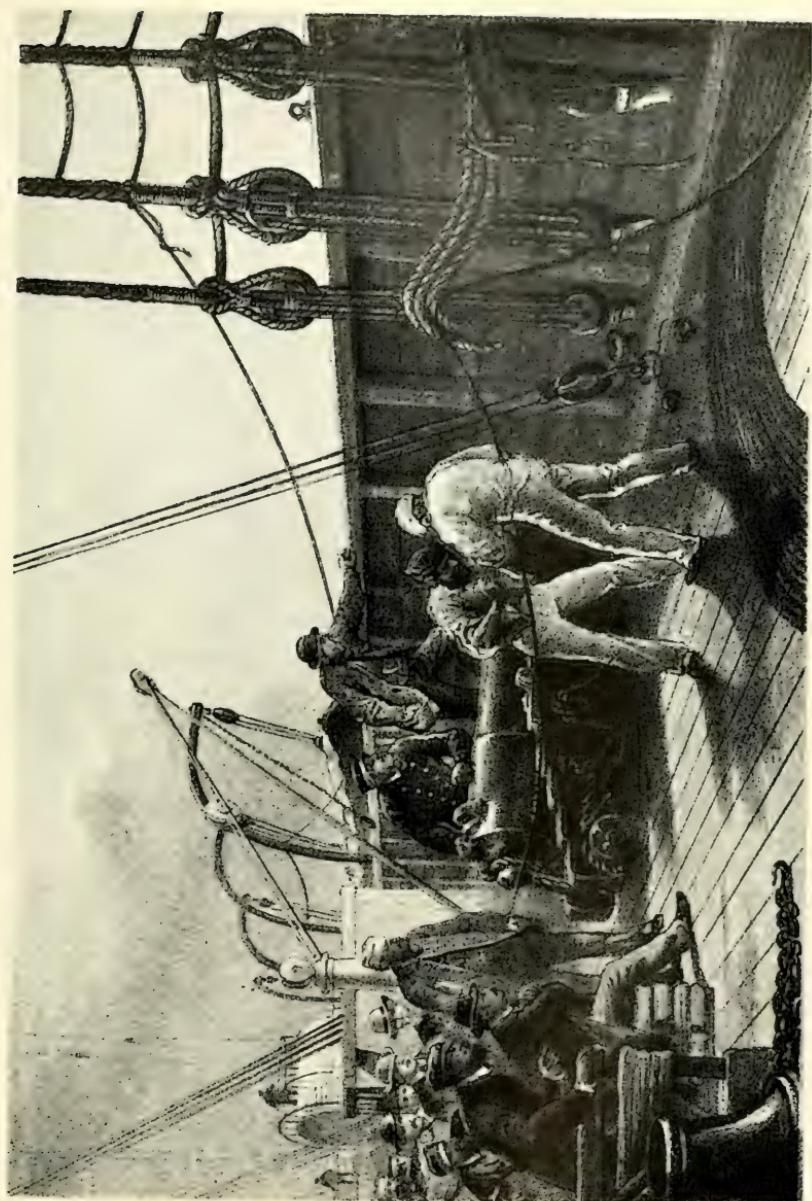
More active competition with the Newfoundland lines came in 1875 when the Direct United States Cable Company opened

a cable that connected England and the United States by a more "direct" but longer route. Both this company and the French company, however, were soon absorbed into a financial combination with the Anglo-American Company. This latter company laid two additional Newfoundland cables in 1873 and 1874, to replace the pioneer cables that were wearing out. The laying of the 1874 cable was the last telegraph work done by the *Great Eastern*, which was soon to enter upon evil days and to be dismantled because unprofitable. This big ship was ahead of the times.

Later, other Atlantic cables were laid by British, French, and American companies. That ubiquitous financier, Jay Gould, for example, promoted the laying of two cables in 1881 and 1882, and linked them with the Western Union lines in America. Two other American capitalists, John W. Mackay and James Gordon Bennett (owner of the *New York Herald*) combined a little later to lay two cables from Ireland to Nova Scotia—a similar route to Gould's. The sole rights for landing cables in Newfoundland were held for fifty years by Field's original promotion, the New York, Newfoundland & London Telegraph Company. Other Atlantic lines were laid by way of the Azores, despite the deep, jagged bottom in the ocean there. By 1900 thirteen cables crossed the North Atlantic, but usually one or two were out of order.

Later cables were heavier than the early ones. The copper wires in the core became larger and more numerous in the newer designs. The protecting armor was also heavier and more durable against rocks, ice, and general abrasion. The speed at which messages could be sent was increased steadily from the rather slow rate of the early cables; by the duplex system of 1875, messages could be sent in both directions at the same time.

The rates charged for messages were gradually reduced. In the earliest schedules the rate was as high as twenty pounds (nearly a hundred dollars) for a minimum of twenty words,



SPlicing THE CABLE ON THE GREAT EASTERS

and in 1867 it was a pound a word. This enormous charge seems ridiculous today when only a few cents a word is charged. The high charges on the early cables was the consequence of the slow rate of sending messages—eight or ten words a minute. This slow rate was due to the disturbed and induced currents in the cable.

Despite the exorbitant charges for cable messages, the early company took in \$2500 to \$3000 per day, and profits of a million dollars a year were made as the business increased. Horace Greeley and other newspaper men pointed out that lower rates would bring vastly greater income, as the early cables operated at only five to ten percent of capacity. This advice proved true. When rates were reduced, the profits increased sharply. Duplex cabling was introduced in 1871; by this method messages can be sent in both directions simultaneously on the same wire. From the early rate of about fifteen words a minute, the speed of cabling has increased markedly. A single cable can now handle over two thousand words a minute.

Chapter Thirteen

OLD-TIME ORATORY

THE FORTUNES OF the Fields were enormously improved by the success of these pioneer cables. Almost all of Cyrus Field's funds had gone into telegraph stock. As Isabella Field Judson, his daughter, states in her book, there had been painful economizing for twelve impressionable years while a large family was growing up. The uncertainties and hardships of the Civil War added to the domestic privations. The children had come thoroughly to hate the cable and its exactions; it had deprived them of many comforts dear to young hearts, and of their father's company and peace of mind. After 1866, however, the family was able to afford all the luxuries that an affectionate and wealthy father could make possible. The old bogey became then a source of pride and a public distinction to attractive children.

Upon Cyrus Field's triumphant return to New York in the fall of 1866, he sold a substantial block of his telegraph shares to rehabilitate his lagging accounts. Being, as always, conscientious about debts of honor, he wished to make restitution to those creditors who, six years before, had accepted twenty-five cents on the dollar when his firm was swamped in the financial difficulty of 1860. He sent to each creditor the full amount outstanding, with interest at seven percent. The total amount paid was more than a hundred seventy thousand dollars.

These were not legal debts—merely applications of a New England conscience. The *New York Evening Post* printed a friendly testimonial about this act of honesty; and George Peabody—always thoughtfully considerate—presented Field with a splendid silver service engraved to commemorate “an

act of very high commercial integrity and honor." Later in life Field was to discover that all American financiers were not so honest as himself, and that it was extremely costly to trust his business associates as his creditors had trusted him. In other words, Field was too frank and naive to survive the increasing pressure of American finance. Others did not always treat him in the generous way in which he treated others, even though he was acknowledged to be a public benefactor.

To understand fully the striking change that the Atlantic cable, connecting Europe and America, brought to the daily life of the people of the two continents, it is necessary to quote from the actual observation of someone who witnessed the transition. Henry Field, although a clergyman, was familiar with the commercial goings-on of his day. As an editor, an author, and a traveler, he was equipped to record his impressions.

In his *Story of the Atlantic Telegraph*, he wrote: "The practical results of the cable were even greater than he had dared to anticipate. In the space of a few months it wrought a commercial revolution in America. It was a new sensation to have the Old World brought so near that it entered into one's daily life. Every morning, as Mr. Field went to his office, he found laid on his desk at nine o'clock the quotations on the Royal Exchange at twelve! This soon made an end of the tribe of speculators who calculated on the fact that nobody knew at a particular moment the state of the market on the other side of the sea, an universal ignorance by which they profited by getting the earliest advices. But now everybody got them as soon as they, for the news came with the rising of each day's sun, and the occupation of a class that did much to demoralize trade on both sides of the ocean was gone."

"The same restoration of order was seen in the business of importations, which had been hitherto a matter of guess-work. A merchant who wished to buy silks in Lyons, sent out his orders months in advance, and of course somewhat at ran-

dom, not knowing how the market might turn, so that when the costly fabrics arrived, he might find that he had ordered too many or too few. A China merchant sent his ship round the world for a cargo of tea, which returned after a year's absence, bringing not enough to supply the public demand, leaving him in vexation at the thought of what he might have made, 'if he had known,' or, what was still worse, bringing twice too much in which case the unsold half remained on his hands. This was a risk against which he had to be insured, as much as against fire or shipwreck. And the only insurance he could have was to take reprisals by an increased charge on his unfortunate customers.

"This double risk was now greatly reduced, if not entirely removed. The merchant need no longer send out orders a year beforehand, nor order a whole shipload of tea when he needed only a hundred chests, since he could telegraph to his agent for what he wanted and no more. With this opportunity for getting the latest intelligence, the element of uncertainty was eliminated, and the importer no longer did business at a venture. Buying from time to time, so as to take advantage of low markets, he was able to buy cheaper, and of course to sell cheaper. It would be a curious study to trace the effect of the cable upon the prices of all foreign goods. A New York merchant, who has been himself an importer for forty years, tells me that the saving of the American people cannot be less than many millions a year.

"But the slender cord beneath the sea had finer uses than to be a reporter of markets, giving quotations of prices to counting rooms and banking houses; it was a link between hearts and homes on opposite sides of the ocean, bearing messages of life and death, of joy and sorrow, of hopes and fears. One of its happiest uses was the relief of anxiety. A ship sailed for England with hundreds of passengers, but did not arrive at her destination on the appointed day. Instantly a thousand hearts were tortured with fear, lest their loved ones had gone

to the bottom of the sea, when the cable reported that the delay was due simply to an accident to her machinery, that would keep her back for a day or two, but that the good ship was safe with all on board. What arithmetic can compute the value of a single message that relieves so much anguish? Thus the submarine telegraph stretched out its long arms under the sea, to lay a friendly hand on two peoples, and give assurance to both. . . . The heart of the world beat under the sea."

It was on such benefits to his fellow creatures that Cyrus Field had often pondered as he strode the decks of tossing ships on the Atlantic seas during many a foggy or seasick night, while the cable uncoiled its slender strands and slipped into the dark water below. He himself had experienced a taste of the anxiety caused by slow communication when, in London during the Civil War, he worried over the raid of the Confederate army toward his home and the draft riots in New York. An eloquent orator of the period, Edward Everett, had pictured the wonder of the cable when he spoke at the opening of an observatory in Albany in 1857.

Everett said in part: "Does it seem all but incredible to you that intelligence should travel for two thousand miles, along those slender copper wires, far down in the all but fathomless Atlantic, never before penetrated by aught pertaining to humanity, save when some foundering vessel has plunged with her hapless company to the eternal silence and darkness of the abyss? Does it seem, I say, all but a miracle of art, that the thoughts of living men—the thoughts that we think up here on the earth's surface, in the cheerful light of day—about the markets and the exchanges, and the seasons, and the elections, and the treaties, and the wars, and all the fond nothings of daily life, should clothe themselves with elemental sparks, and shoot with fiery speed, in a moment, in the twinkling of an eye, from hemisphere to hemisphere, far down among the uncouth monsters that wallow in the nether seas, along the wreck-paved floor, through the oozy dungeons of the rayless

deep; that the latest intelligence of the crops, whose dancing tassels will, in a few months, be coquetting with the west wind on those boundless prairies, should go flashing along the slimy decks of old sunken galleons, which have been rotting for ages; that messages of friendship and love, from warm, living bosoms, should burn over the cold, green bones of men and women, whose hearts, once as warm as ours, burst as the eternal gulfs closed and roared over them centuries ago."

This speech by Everett is a reminder that people today have ceased to be thrilled, not only by the thought of a wonder-working cable under the ocean, but also by the ardent oratory that attracted the great-grandfathers and great-grandmothers of the present generation. It was, of course, a much different world from that of today. Every generation appears strange and ludicrous to the generations that immediately succeed it, just as in fifty years the radio sales-talks and the football games of today will probably arouse roars of laughter. It might be suggested, however, that Cyrus Field, with his progressive ideas and public spirit, would be more at home today—if deprived of his beard—than most of his contemporaries. He was, in many respects, ahead of his time and was happily free of the pompous and stodgy manner that characterized so many of the eminent worthies of the Victorian period.

A matter of national policy that interested Field at that time because of his association with England, was the clearing up of the chaotic post-war finances. The Secretary of State, his old friend Seward, wrote him in February of 1868 about the heavy demands being made upon the Government. Field was arranging to go to England in a few days. He wrote to the Secretary of the Treasury at Washington, saying: "I have undoubted confidence in the good faith of our government that it will pay the principal and interest of every dollar of its bonded debt in gold, and shall do all in my power to make my friends in Europe think as I do."

A few weeks later, John Bright—carrying on in Parliament despite the death of his colleague Cobden—wrote him in England about the same difficulty. His letter follows:

Rochdale, March 8, 1868.

My dear Mr. Field,—I have only just received your kind invitation. Unluckily Tuesday is fixed for the Irish debate, and I cannot be away from the House on that evening.

I regret this very much, for it would give me much pleasure to spend an evening with you. I must call upon you, and have a talk with you on the new crisis which has arisen in your country.

Some of your statesmen are in favor of repudiation, and you are dethroning your President, and yet your stocks are not sensibly shaken by all this in the English market. There is more faith in you than there was three or four years ago!

But I hope your people will not repudiate.

Always sincerely yours,

John Bright.

I expect to be in town in the course of to-morrow.

The “kind invitation” mentioned in Bright’s letter was for a dinner given by Field at the Buckingham Palace Hotel on the fourteenth anniversary of the organization of the New York, Newfoundland & London Telegraph Company in his Gramercy Park home. Dinners to mark anniversaries of this kind were frequent at that period, and Field’s amiable hospitality made him a well-liked host. Social affairs bringing together leading Englishmen and Americans improved the diplomatic relations between the two nations and were a distinct benefit during the strained relations of the post-war period.

At that time there was a sharp dispute between the United States and England over the damages inflicted on Northern shipping during the Civil War by Confederate vessels built and equipped at British ports. These losses had been serious and humiliating to the Northern cause, but England’s traditional pride in carrying things with a high hand “where Britannia rules the waves” had hindered a fair settlement. The American protest—called the “*Alabama claims*” from

the name of the most notorious of the privateers—was being debated at this time in Parliament.

At Field's dinner in the Buckingham Palace Hotel, he said: "Gentlemen, on Friday evening I had great pleasure in hearing the debate in the House of Commons on the *Alabama* claims. Before that, I confess to you, I felt exceedingly anxious about the relations between England and the United States; and on Thursday last, in sending a private telegram to Washington, I used these words: 'When you see the President, Mr. Seward, and Mr. Sumner, please say to them that I am perfectly convinced that the English government and people are very desirous of settling all questions in dispute between the United States and this country, and that with a little conciliation on both sides this desirable object can be accomplished.' Gentlemen, we are honored here tonight with the presence of several distinguished persons connected with the press in England and America, and I am going to give you as a toast 'The Press' of those countries; and I shall ask them, who so well know public opinion, to tell us frankly whether I was justified in sending such a message to Washington."

Field's initiative in cabling to the United States a full report on the *Alabama* debate does not seem remarkable today, when long cablegrams of international news are sent daily as a matter of journalistic routine. But at that period, such a policy was less common in news practice. Something of the attitude of the newspapers was expressed in a speech at Field's dinner by the London correspondent of the *New York Tribune*, who said in part: "I heard with pleasure from Mr. Field that he had sent the *Alabama* debate to New York, an instance of public spirit for which the two countries owe him a debt of gratitude; for through it there is, I suppose, this morning in every journal in America, certainly in every large journal on the Eastern coast, full tidings of the debate. It is, perhaps, such a message as was never before sent from one country to another. It was my fortune to listen to that debate. No news-

paper report can give such a notion of the tone and temper of the House as hearing it conveyed to me. It was not only the sincere purpose, it was not only the enthusiasm and earnestness, the good-will to America which every speaker showed, but there was a certain electric sympathy which seemed to pervade the House. It manifested itself in cheers for every liberal sentiment and every kindly expression that fell from the speakers' lips. Several members of the House came to me as I sat under the gallery, and with what I may be pardoned for calling an almost boyish enthusiasm, said, 'Is not that capital?' as some sentence of conciliation and of justice fell from the lips of Lord Stanley, of Mr. Forster, or of Mr. Mill. Now, sir, I should not be loyal to the journal which I represent if I did not say that this authoritative declaration of a changed feeling in England is sure to be welcome in America. Not one but many journals came to us from the United States in advance of this debate breathing a similar spirit. The cloud which for years has hung between the two countries seems to be passing away, and it would be ungrateful not to believe that a spark along this cable has helped to dispel it. At any rate, I cannot make a mistake in saying that any disposition to close up the old quarrel, any wish for future union which English lips may utter, is sure to find a cordial echo from the press on the other side of the Atlantic."

An English opinion was expressed at Field's dinner by the Right Honorable James Stuart Wortley, who spoke of the sending by "our worthy chairman of the conciliatory debate of the House of Commons on the *Alabama* claims to America." He continued: "I am very glad this has been done, as it is far more likely to create good feeling between the two countries than anything else."

The great Gladstone himself, at that time the most influential man in England, was not able to attend the dinner because of a prolonged session that evening in the House of Commons, where his presence was essential. But at seven

o'clock he wrote a note to Field, who received it just before the dinner began. The note was as follows:

House of Commons, March 10, 1868, 7 P. M.

My dear Sir,—I have cherished to the last the hope of coming to see you, but unhappily it is now arranged that Lord Mayo will not speak until after dinner, and I therefore fear that my presence at the only time of the evening when it would have been of use will be impossible. I should have much enjoyed, and I had greatly coveted, the opportunity your kindness offered—speaking a word of good-will to your country—but I am detained here by a higher duty; for there is, in my judgment, no duty for public men in England which at this juncture is so high, so sacred, as that of studying the case of Ireland, and applying the remedies which I believe it admits.

We shall be here until midnight, but not without thoughts of your festival and of the greatness of the country with which it is connected. You are called upon to encounter difficulties and to sustain struggles which some years ago I should have said were beyond human strength. But I have learned to be more cautious in taking the measure of American possibilities; and, looking to your past, there is nothing which we may not hope of your future.

I remain, my dear sir, most faithfully yours,

W. E. Gladstone.

Cyrus W. Field, Esq.

The high point of the evening came when Field suggested a toast to the memory of the lamented idealist, Richard Cobden, "who proposed to the late Prince Consort that the profits of the exhibition of 1851 should be devoted to the establishment of telegraphic communication between England and America, and who, later, desired that the English government should supply one-half of the capital necessary to establish telegraphic communication across the Atlantic. . . . If the government had followed his advice they would today be receiving half the dividends on the Anglo-American and Atlantic telegraph stocks. I hope this consideration may lead them to pursue a liberal policy in regard to the extension of the telegraph to India, China, and Australia." All present rose

and drank the toast in silence. Cobden had died a few months before, worn out by his persistent advocacy of more liberal laws for the working man. At one time Cobden had been a guest of Field in New York; the two had much in common in their ideals of public service.

It should be added, in passing, that the *Alabama* claims were finally settled in 1872 by England's agreement to pay more than fifteen million dollars to the United States—a noteworthy admission that the days of Lord Palmerston's jaunty bullying of the American Government had passed. When England's High Commissioners, including the Marquis of Ripon, came to the United States to negotiate the *Alabama* controversy, they were guests of Field in New York. Such diplomatic assistance to the improvement of Anglo-Americans relations was not uncommon for him.

Field's faculty for getting along with difficult Englishmen was the consequence of his direct manner of speech and his absence of boasting. The English were so accustomed to artificial and snobbish attitudes among themselves that his naturalness afforded relief and gave them an opening for demonstrating the real virtues which underlay their self-conscious superiority. Field's modesty took the form, not of shyness and self-effacement, but of hospitality and frankness.

While in England in 1868, he received notification from the Department of State in Washington that it had received for him from Paris a "Grand Prize and Diploma." This prize, the highest honor of the Paris Exposition of that year was typical of the official respect paid him as the world recognized what a striking benefit the Atlantic cable conferred on mankind. But a more discriminating and appreciated honor was paid him in July, when a gathering of distinguished leaders of British thought gave him a testimonial banquet in London. This was perhaps the greatest hour of his life.

The invitations spoke of the banquet "as an acknowledgment of the eminent services rendered to the New and Old

Worlds by his devotion to the interests of Atlantic telegraphy through circumstances of protracted difficulty and doubt." The chairman of the invitation committee was the Duke of Argyll; the chairman of the executive committee was Sir James Anderson, former captain of the *Great Eastern* and Field's comrade of many an anxious night on the high seas.

The wording of the acceptance of an invitation by the famous humanitarian, the Earl of Shaftesbury, is typical of the genuine respect felt in England for Field's accomplishment. It was as follows:

June 19, 1868.

Sir,—It would give me great pleasure to show any mark of respect in my power to Mr. Cyrus Field and to the great nation to which he belongs.

I shall be happy to attend the dinner on July 1st, if by so doing I can attest my sense of Mr. Field's services.

I trust that I shall not give offence, should I be compelled to retire before the rest of the company.

I remain your servant,
Shaftesbury.

Sir James Anderson.

The speeches at the dinner were fitting and impressive. The Duke of Argyll said in proposing "that which is pre-eminently the toast of the evening": "I believe the success of this enterprise would have been delayed for many years—perhaps for whole generations of men—had it not been for the confidence and zeal, for the foresight and faith, amounting, as I think, to genius, of our distinguished guest, Mr. Cyrus Field. . . . Of all commercial enterprises which have ever been undertaken, this one on the part of Mr. Cyrus Field represented the noblest and purest motives by which commercial enterprise can ever be inspired. . . . He risked every farthing of his own private fortune in promoting its success. On these grounds, ladies and gentlemen, I ask you to drink his health. But on one other ground also I ask you

to drink it, and that is this, that he is personally one of the most genial and kindly-hearted of men. At a time when his country was in great difficulty, and when many Americans thought at least they had something to complain of in the tone of English society [the Duke was a Scotsman], I was in the constant habit of meeting Mr. Field, and I never saw his temper ruffled for a moment, I never heard any words fall from him but words of peace between the two countries . . . and I have reason to believe that his services and exertions in the United States have not a little contributed to secure the return of that feeling."

Several prominent members of the British Government were present, among them Sir John Pakington, Sir Stafford Northcote, and Alexander Milne. The Right Honorable Sir John Pakington said in part: "I am one of the few—and they are quickly becoming fewer—who made a tour in the United States not only before electric telegraphs were thought of, but before even steamboats had crossed the Atlantic. . . . It so happened that the wind was in the west, as it generally is, and I was exactly six weeks from shore to shore. . . . The communication, which at the time to which I first referred occupied six weeks, may now be effected in as many minutes. . . . Even during the dinner we have been corresponding briskly with our American friends."

Cobden's old associate in the fight to import grain freely into England, John Bright, spoke feelingly and at great length. He said in part: "During the years which passed between 1790 and 1815, for nearly twenty-five years the government and people of this country were waging a war of a terrific character with a neighboring state. The result of that war was that which is, I believe, the result of every great war—enormous expenditure, great loans, heavy taxation, growing debt, and, of course, much suffering among the people, who have to bear the burden of those burdens. But after that war, during twenty-five years, from 1815 to 1841, there

was scarcely anything done by the government of this country to remedy the gross and scandalous inequalities of taxation, and to adopt a better system in apportioning the necessary burdens of the state upon the various classes of people. But since 1841, as we all know, we have seen a revolution in this country in regard to taxation and finance, and I need not remind you that this has been mainly produced by the teaching of one who is not with us tonight, but who would have rejoiced, as we now rejoice, over the great event which we are here to celebrate, whose spirit and whose mind will, I believe, for generations yet to come stimulate and elevate the minds of multitudes of his countrymen. . . . I conclude that such a nation as the United States—such a people, so free and so instructed—will not be twenty-five years before they remedy the evils and the blunders and the unequal burdens of their taxation and their tariff. They will discover, in much less time than we have discovered it, that a great nation is advanced by freedom of industry and of commerce. . . . For, after all that can be said of invention and of science, and of capital, it required the unmatched energy and perseverance and faith of Cyrus Field to bring to one grand completion the mightiest achievement which the human intellect, in my opinion, has ever accomplished."

This was grand praise indeed. Bright thoroughly admired Field and longed for better exchanges between nations. His ringing words in favor of lower tariffs and reduced taxes after a costly war are appropriate even today. In another part of his speech, Bright referred to Columbus, as follows: "When that cable was laid, when the iron hand grasped in the almost fathomless recesses of the ocean the lost and broken cable, if it be given to the spirits of great men in the eternal world, in their eternal life, to behold the great actions of our lives, how must the spirit of that grand old Genoese have rejoiced at the triumph of that hour, and at the new tie which bound the world he had discovered."

Viscount Stratford de Redcliffe, realizing from his long experience in the diplomatic service the immense advantage of direct telegraphic connections, referred in his speech to the misunderstandings that formerly had occurred through lack of ready exchange of ideas between two such nations as England and the United States—nations that should be on the friendliest of terms. He was impressed by Field's willingness to spend so much time on the high seas. Said the venerable Viscount: "He crossed the Atlantic more than forty times in pursuit of that glorious object, and I, who have crossed it but twice, have learned thereby to appreciate the results, as well as the perils, of so immense an undertaking." Apparently the Viscount had experienced a rough crossing and held unpleasant memories of it.

The great engineer, Viscount de Lesseps, spoke in French about "*la télégraphie électrique, merveilleuse invention moderne mettant au service de l'homme la force que les anciens donnaient pour emblème à la divinité; et qui, au lieu de planer sur nos têtes en signe de menace, poursuit une marche bienfaisante jusque dans les profondeurs des mers.*" He concluded dramatically in an outburst of praise: "Honneur à Cyrus Field, qui a été le grand propagateur et fondateur de la télégraphie transatlantique! Honneur à ses compagnons de travail et de victoire!" This was discerning commendation from a distinguished man of the world who understood well the magnitude of such a project as an Atlantic cable.

As an indication of the evening's significance, the Duke of Argyll telegraphed the following message to President Andrew Johnson at Washington: "I am now surrounded by upwards of three hundred gentlemen and many ladies who have assembled to do honor to Mr. Cyrus Field for his acknowledged exertions in promoting telegraphic communication between the New and the Old World. It bids fair for the kindly influences of the Atlantic cable that its success should have brought together so friendly a gathering; and in asking

you to join our toast of ‘Long life, health, and happiness to your most worthy countryman,’ let me add a Highlander’s wish—that England and America may always be found, in peace and in war, ‘shoulder to shoulder.’”

An answer from Secretary of State Seward came promptly as follows: “Your salutations to the President from the banqueting-hall at Willis’s Rooms have been received. The dinner hour here has not yet arrived—it is only five o’clock; the sun is yet two hours high. When the dinner hour arrives the President will accept your pledge of honor to our distinguished countryman, Cyrus W. Field, and will cordially respond to your Highland aspiration for perpetual union between the two nations.” Apparently the President—unlike Highlanders—did not drink toasts between meals and had regular hours for dinner.

The Duke also sent a cablegram to Field’s family in the United States and received a reply from his oldest daughter, as follows: “I thank you most sincerely for the kind words you have spoken of my father, causing me to feel that we are friends, although our acquaintance is thus made across the sea and in a moment of time.” This message from an American girl was well phrased and appropriate. Like Secretary Seward’s message, it was read to the assembled diners.

A few days later Field received a note from Argyll Lodge, Kensington, in which the Duke expressed his pleasure at presiding at the banquet. He said: “I would rather have my name associated with the Atlantic telegraph than with any other undertaking of ancient or modern times.” Several letters of regret were received from prominent persons who were unable to attend.

Among these was Lord Clarendon, who had assisted Field to get governmental aid; he referred to Field’s “zealous efforts in promoting friendly relations between our respective countries.” Goldwin Smith, well known on both sides of the Atlantic, wrote of his personal gratitude to “the author and

the indomitable promoter of an enterprise the success of which will link me, though far away, to my English home." George Peabody wrote from "Castle-Connell by Limerick," to which Irish retreat John Bright had brought an account of the banquet, expressing his pleasure at Field's honors. The American minister to France, General John A. Dix, whom Field had entertained in New York, wrote to Sir James Anderson regretting his inability to pay his respects in person. Everything considered, the affair was a striking tribute of England's gratitude to Field and of his personal popularity among a people not inclined to praise Americans indiscriminately.

There was a desire among many people in the United States that John Bright, who had defended the North during the Civil War, might cross the Atlantic and pay a visit to the American friends of his liberal policies. The Americans admired his reforms as a champion of the democratic classes and his advocacy of the free importation of grain into England. Field, who was anxious to entertain Bright in New York, was the bearer of an invitation signed by many American notables which said: "Your presence at this time would tend to strengthen the ties between your country and ours."

But Bright was deeply involved in the prospects of a British election to defeat the Tories and make Gladstone prime minister. He replied to Field as follows:

Torquay, Devon, October 13, 1868.

My dear Mr. Field,—Your letter has been sent on to me, and has followed me in my journey in Cornwall. . . . I rejoice at the patriotism of your countrymen, many of whom have gone or are going home to take part in the great election; and I hope most earnestly that the Republican candidates may be elected by a grand majority.

In this country the elections seem likely to go strongly against the Tories; they deserve to be well beaten.

As to the invitation from New York, I can say nothing except that I am deeply indebted to your friends for their kind invita-

tion, and that I regret extremely that I have never yet been able to visit your country. I need not tell you how many are my engagements here, and how uncertain is the prospect of my being able to see the many kind friends I have in the States.

I must ask you to thank the gentlemen who wrote to me, and to say that I am very grateful to them for their kind remembrance of me.

I wish you a pleasant voyage and return. I almost envy you the ease with which, after your long experience, you cross the Atlantic.

I shall wait with confidence, but not without anxiety, what the cable will bring us the day after your election. I see four States have their elections to-day, from which something may be judged of what is to come.

I am, always very sincerely, your friend,
John Bright.

Chapter Fourteen

INTERNATIONAL AFFAIRS

IN THE AUTUMN of 1868, Field returned from England in time to vote for General Grant for president. He had enjoyed cordial relations with President Pierce, who signed the bill granting government aid for the cable; with President Buchanan, to whom Queen Victoria sent the first cable message; with President Lincoln through his friend, Secretary of State Seward; and with President Johnson, to whom the Duke of Argyll sent the cable message. Later he became intimate with President Grant and was a still closer friend of President Garfield, for whose family he did a great service. Cyrus' brother, David Dudley Field, was still better known at Washington, because of his influence in politics and law; and Stephen Field by this time was serving on the United States Supreme Court. Both David and Stephen were feared by politicians, because of their rigid opinions; Cyrus was more approachable and sociable.

It is said that the movement for the nomination of Grant began in the Fifth Avenue Hotel, a few blocks from Field's residence. This hotel, at Fifth Avenue and Twenty-Third street, was a favorite resort of Republican leaders. Field often dropped in there of an evening and was a familiar figure on the Avenue.

There was important work for him in New York in improving the relations between the American and British officials of the cable companies. The friction between the various cliques of directors, especially in England was growing worse, in spite of Field's intermediary efforts and the beneficent influence of the grandfatherly Peter Cooper. The best conception of these departmental jealousies and tempera-

mental differences can be gained from a letter written at the time to Cooper by one of the British stockholders who had done important work as an engineer in the cable-laying, Cromwell Varley, then on a visit to New York.

Fifth Avenue Hotel,

New York, October 6, 1868.

My dear Sir,—I hope you will pardon me for addressing you upon the subject of the Atlantic circuits.

I am a small shareholder in the New York, Newfoundland, and London Telegraph Company, a larger in the Anglo-American and Atlantic Telegraph companies; and it is with regret that I see that the two companies are fighting instead of working.

It seems as if they were re-enacting just the same farces that were performed when we were endeavoring to raise funds both for the 1865 and the 1866 cables. I venture unhesitatingly to assert that we should not have succeeded but for the indomitable energy and the excellent judgment of Mr. Cyrus Field.

I do not believe the present attempt at an adjustment will end in any useful results unless some one like Mr. Cyrus Field, enjoying the confidence and personal regard of those interested on this side, as well as such men as Brassey, Hawkshaw, Fairbairne, Fowler, Gladstone, Bright, Whitworth, and others in Europe, go to England empowered to act on behalf of your company. The jealousies and conflicting interests existing between the directors on the other side prevent them from acting with that vigor and integrity of purpose so necessary to command success, and which qualities are possessed to so large an extent by Mr. Cyrus Field, to whom the world is mainly indebted for the Atlantic cables. He of all others is, in my opinion, the one most capable of effecting the settlement we are all so interested in. He succeeded in restoring public confidence, in harmonizing the disputants, and in raising the money when the enterprise had twice proved a failure, and had as often been virtually abandoned by its natural protectors. How much the more, then, will he succeed now when he reappears amongst his old supporters and his true friends, backed this time not by failure, but by triumphant success, and with all his predictions realized! . . .

Very truly yours,
Cromwell F. Varley.

Peter Cooper, Esq., New York.

The suggestions in this letter, which were amply justified by facts, were acted upon a year or more later, when the Anglo-American Company absorbed the Atlantic Telegraph Company. As the years went on, a more unified control of the organization was effected, and the loose ends were pulled in. The Anglo-American Company continued to absorb other companies, including its competitors. In 1873 it bought out the New York, Newfoundland & London Company; this was just before the financial depression of that autumn.

Varley's letter indicates the high esteem in which Field was held both in England and America. He was now a rich and powerful man. During that winter, of 1868-69, his wife and two daughters journeyed to the south of France. Field sailed in January to join them at Pau. Just before he left he received from Secretary of State Seward the gold medal (second impression) that had been voted to him by Congress two years before.

In the spring he was once more among his friends in England. While there he received a cablegram announcing the completion of the Pacific railroad connecting the newly-acquired and gold-enriched California with the Eastern states. He forwarded this message to his friend General Dix in Paris. By June he was back in New York and busy with important tasks.

Since he could afford a country home as well as his New York house, he acquired a tract of land on a hill overlooking the Hudson between Dobb's Ferry and Irvington, about twenty miles from New York. This property was later expanded to an estate of several hundred acres. The house was a commodious structure in the Victorian style. It was named Ardsley, from the old Yorkshire residence of the family before Zechariah Field came to Massachusetts in the time of the Pilgrims. There is now a station on the New York Central railroad called Ardsley-on-Hudson, at the foot of the hill where the old mansion stood. This district is part of Sleepy

Hollow, as described by Washington Irving, and not far from the huge Pocantico estate of the Rockefellers.

Like his friends in England, Field was now equipped to entertain guests either in the city or the country. Many distinguished persons visited at Ardsley, both British and Americans. The roomy house and the extensive grounds were particularly appreciated by his children, now growing into young men and women. As an indication of Field's social nature, the following letter from the distinguished preacher, Henry Ward Beecher, is typical and amusing:

May 7, 1870.

My dear Mr. Field,—On Friday noon, as I sat writing in the *Christian Union* office, about twelve of the clock, it suddenly flashed across me that I had engaged to breakfast with you at nine of the morning, alas! and have only to say in excuse that I forgot.

Ordinarily that would be an aggravation, for it would argue indifference; but in a man who forgets, he is grieved to say, funerals, weddings, and social engagements; who forgets what he reads, what he knows, it ought not to be considered as a specific sin so much as a generic infirmity. I pray you forgive me, and invite me again! Then see if I forget.

I am very truly yours,
Henry Ward Beecher.

Both of Field's parents were now dead, so that the old habit of going back to Stockbridge had ceased. His mother, Submit Dickinson Field, had witnessed his first triumph and fame. She had died in the summer of 1861, eight years after her golden wedding celebration, which Cyrus had hurried back from South America to attend. The "old parson" had died in the spring of 1867, worn out by nearly eighty-six years on the earth which he had labored to improve. He had seen the final victory of Cyrus in conquering the ocean; had witnessed the success of David Dudley Jr. in his leadership of the American bar; and had rejoiced at Stephen's appointment by President Lincoln to the United States Supreme

Court. All three of these sons were giving important service to their country.

Part of Cyrus Field's service to his country came from his personal influence among the British. Henry Field wrote of him: "No man in America was better known abroad, no house received more foreign guests, many of whom he had not met before, but who brought letters to him, and there was no end to his hospitality." There was need at that time of men who understood international complications.

The troublesome *Alabama* claims against England were causing ill feeling between the two countries. Delicate questions of national honor, as well as a large sum of money, were involved. Field deprecated the flaming diatribes against England that were being broadcast from Congress by such ordinarily trustworthy leaders as Charles Sumner of Massachusetts. In an effort to ward off unreasonable appeals to passion, he wrote to Senator Sumner from Ardsley, as follows:

Irvington-on-the-Hudson, June 24, 1869.

My dear Mr. Sumner,—Many thanks for your letter of the 13th instant; it should have been answered at once, but it was sent to my house in Gramercy Park.

I thank you for your letter to Secretary Fish. I do most sincerely hope that we shall soon have a better feeling between this country and England, and I know of no one that can do more to bring about this desirable result than yourself.

You may be sure that I shall do all I can. I wish you would write our mutual friend, Mr. John Bright, frankly.

I hope soon to have the pleasure of seeing you again and renewing our late conversation.

With respect I remain, my dear Mr. Sumner,

Very truly your friend,
Cyrus W. Field.

A few weeks later an able and conciliatory article on the *Alabama* claims by President Woolsey of Yale appeared in the periodical *The New Englander*. Field sent Woolsey his thanks for the article and told him that he was forwarding it

to John Bright in England. His letter to Bright was as follows:

New York, August 9, 1869.

My dear Mr. Bright,—Since my return from England I have seen many of our ablest men, including the President of the United States, the Secretary of State, Secretary of the Treasury, Senator Sumner, several other members of the Senate, and members of the House of Representatives, the Governors of several States, leading editors in New York, Philadelphia, Boston, and Washington, and I have found only one that advocated war with England.

I am more than ever convinced that if the English government would send to Washington yourself, the Duke of Argyll, and Earl Granville as special ambassadors to act with the British minister, the whole controversy between England and America could be settled in a few months. Please give this matter your careful consideration. I send you by this mail the *New Englander* for July, containing an article on the *Alabama* question written by President Woolsey, of Yale College.

With kind regards to your family and with great respect,

I remain, my dear Mr. Bright,

Very truly your friend,

Cyrus W. Field.

Field's suggestion that the Duke of Argyll and Lord Granville be sent as special commissioners to assist the negotiations at Washington did not meet with Bright's approval. He believed that the trouble was in the Senate, where garrulous orators like Sumner were running wild. His reply to Field was more a letter to a friend than an official statement. It shows the attitude of liberal Englishmen of the Victorian period toward the rising republic that was pulling itself together after a disastrous war. The letter follows:

Rochdale, August 24, 1869.

My dear Mr. Field,—I am glad to have your letter, and note its contents with much interest. I do not see how your suggestion can be adopted at present.

Whatever is done now towards a settlement must necessarily

come from your side. We have done all we can. Your government sent an envoy with the unanimous assent of the Senate. He came avowedly with the object of arranging an existing difficulty. He made certain propositions on the part of his government. These were considered by our government, and finally were adopted and consented to. A convention was signed, including everything your minister had asked for, and this convention was rejected by your Senate. Who knows that it will not reject any other convention? If you have an envoy who has no power to negotiate, and an executive government which cannot ratify a treaty, where is the security for further negotiation? We cannot come to Washington and express our regret that Reverdy Johnson did not ask for more. We gave him all he asked for, all that Mr. Seward asked for, all that the then President asked for. What could we have done, what can we now do more?

It is clearly for your government to explain why the convention failed, and what, in their opinion, is now required from us. The civilized world, I am quite sure, will say that we are on a certain vantage-ground, having consented to all that was asked from us, the convention not having failed through our default.

I could easily suggest a mode of settlement which all mankind, outside the two countries, would approve of; but how do I know what your government can do? If there is passion enough for Mr. Sumner to appeal to, or believers in his wild theories of international obligation, how can any settlement be looked for? There is abundant good feeling here to enable our government to do what is just, but no feeling that will permit of any voluntary humiliation of the country.

Until something is known of what will content the powers that will meet in Washington in December next, I do not see what any mission from this to you would be likely to effect. I have read the article in the *New Englander*. It is moderate, and written in a good spirit. I do not know that there is anything in it that I could not freely indorse. Upon the basis of its argument there could be no difficulty in terminating all that is in dispute between the two countries. But the article is in answer to Mr. Sumner; and the question is, does your government, and will your Congress, go with Mr. Sumner or with the review article? And what view will your people take?

I write all this privately to you. It is not from a Cabinet minister, but from an old friend of yours, who is a member of the

English Parliament, and who has taken some interest in the affairs of your country. You will consider what I say, therefore, as in no degree expressing any opinion but my own. I have abstained from writing or speaking in public on the subject of the dispute. I could say something to the purpose probably if I thought men on your side were in a mood to listen and to think calmly. But after what has happened in connection with the convention I think we can only wait for some intimation from your side.

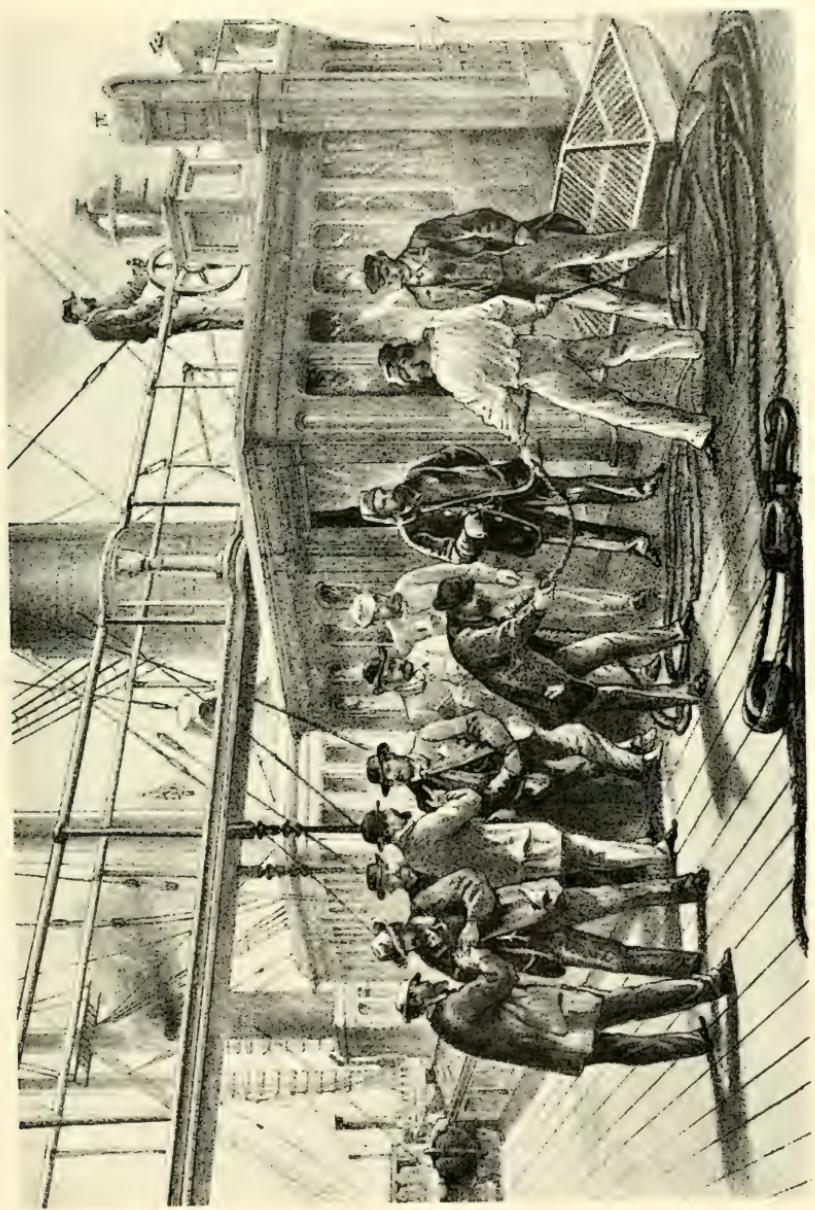
There is a good opinion existing here with regard to your government, and especially as regards your Secretary of State. I hope he may have the honor of assisting with a wise moderation to the settlement of the disputes on which so much has been said and written and so little done. . . .

Believe me always sincerely your friend,

John Bright.

In answer to this, Field wrote: "I regret Mr. Sumner's speech and his course about the *Alabama* claims more than I can express, and shall do all I can to counteract the effect of his actions, and you can help me, I think, very much, if you will take the trouble to write your views fully." During the following winter, Field was in England on business of the telegraph companies. Upon his return he went to Washington and talked with Senator Sumner. His effort now was to get an arbitrator or arbitrators appointed, whose decision about the claims should be binding. Sumner professed to believe that it would be undignified for the United States to accept arbitration.

England later followed Field's original suggestion to Bright and sent a special commission to America, with the Marquis of Ripon as spokesman. These High Commissioners of Her Britannic Majesty, as they were called, were entertained by Field; and the Marquis at a banquet toasted the health of his host and the "credit due to the little wire which tied the two nations so close together." Another member of the commission, Sir Stafford Northcote (later Lord Iddesleigh) also agreed that the cable was particularly important in the deli-



SEARCHING FOR FAULTS IN THE CABLE

cate negotiations at Washington. He said: "We usually met our American colleagues at mid-day, and we were by that time in possession of the views of our home government as adopted by their Cabinet in the afternoon of the same day." This use of the cable to expedite and smooth international differences was in accordance with Field's hopes of many years back.

The negotiations at Washington ended in what was called the Treaty of Washington, and well-wishers on both sides hoped that an amicable end to the quarrel was in view. But, as often happens, self-seeking politicians on the opposing sides interpreted the terms to suit their own purposes. So-called "patriotic" defenders of each nation's honor continued to make inflammatory speeches. A fiery speech made in Brooklyn on Washington's Birthday of 1872 by Schuyler Colfax aroused indignant feeling on both sides of the Atlantic. The speech called for huge payments for "indirect damages" as well as direct damages—a preposterous claim. It was a critical moment.

Field was in London at the time, but he wrote a long letter to Colfax. The great length shows how deeply he was concerned at the dangerous turn that events had taken. The sentiments expressed in this letter show Field's understanding of Anglo-American relations and his influential work to improve them. The letter shows him at his best. It was as follows:

London, 24th February, 1872.

My dear Mr. Colfax,—Having read this morning a brief telegraphic summary of the speech which you delivered at Brooklyn on Washington's Birthday, I feel constrained to address you on the subject upon which you have spoken with so much emphasis. I refer to the Treaty of Washington. I share your opinion that neither nation will dare, in the face of civilization, to destroy the treaty; but nevertheless the crisis is a grave one. It therefore behooves every one who can assist to bring about a better under-

standing on the points of difference between the two countries to make his contribution to that end. This is my apology for addressing you.

The grave misunderstanding which has arisen between Great Britain and the United States is due to the widely different manner in which the Treaty of Washington has been from the outset interpreted by the two nations. I have not met a single person on this side of the Atlantic who expresses any desire "to back out" of the treaty, or refuse the fulfilment of any one of the obligations which it is believed to impose; nay, more, my conviction is that if the British people were satisfied that the principle of referring vague and indefinite claims to arbitration had somehow or other crept into the treaty, they yet would, while passing emphatic votes of censure on their representatives at Washington, at the same time never dream of calling back the pledge which Lord Ripon and his colleagues had given on their behalf.

The excitement which followed the publication of the American case was occasioned by the belief—universal among all classes of the English people—that their own interpretation of the treaty was the right one, and that indeed no other interpretation had ever been or would be given to it. It is desirable that Americans should remember this fact—that until the publication of the American case nobody on this side of the water had the remotest idea that the Washington Treaty contemplated more than arbitration with reference to the direct losses inflicted by the *Alabama* and other Confederate cruisers which escaped from British ports during our civil war. This is not a matter of surmise; it is demonstrable on the clearest evidence. I therefore contend that whether the public sentiment of England be well founded or not, its existence is so natural that even if we Americans are wholly in the right we ought to make every allowance for it—in fact, treat it with generous forbearance.

So early as June 12th last, when Lord Russell, in moving a resolution for the rejection of the treaty, charged the Americans with having made no concessions, Lord Granville retorted by pointing to the abandonment of the claim for consequential damages. 'These were pretensions,' he said, 'which might have been carried out under the former arbitration, but they entirely disappear under the limited reference.' There could be no mistake as to his meaning, because in describing the aforesaid 'pretensions' he quoted the strong and explicit language which Mr. Fish had

employed. We are bound to believe that Lord Granville spoke in perfect good faith, especially as the American minister was present during the debate, and sent the newspaper verbatim report of it to his own government by the ensuing mail. When the debate took place the ratification of the treaty had not been exchanged. If Lord Granville was in error, why did not General Schenck correct him?

On the same occasion the Marquis of Ripon, also replying to Lord Russell's taunt, remarked that 'so far from our conduct being a constant course of concession, there were, as my noble friend behind me [Earl Granville] has said, numerous occasions on which it was our duty to say that the proposals made to us were such as it was impossible for us to think of entertaining.' This, also, was understood to refer to the indirect claims.

Turning to the debate which took place in the House of Commons on the 4th of August, one searches in vain for any remark in the speeches of Mr. Gladstone, Sir Stafford Northcote, or Sir Roundell Palmer which indicated any suspicion that the *Alabama* claims had assumed the portentous character which now attaches to them. The doubt which Lord Cairns at one time entertained had been set at rest by the ministerial explanations made at the time in the House of Lords, and not a single argument advanced in the Lower House, either in support of or in opposition to the treaty, touched upon the question of these claims. Even Mr. Baillie Cochrane, the well-known Conservative member, who denounced the treaty on all sorts of grounds, and whose avowed object was to pick as many holes in it as possible, was unable to allege that England had consented to an arbitration which might involve her in indefinite liabilities.

Sir Stafford Northcote, in the course of his humorous speech—a speech instinct with good feeling towards the United States—said that 'a number of the claims under the convention which was not adopted [the Johnson-Clarendon Treaty] were so vague that it would have been possible for the Americans to have raised a number of questions which the commissioners were unwilling to submit to arbitration. They might have raised the question with regard to the recognition of belligerency, with regard to constructive damages arising out of the recognition of belligerency, and a number of other matters which this country could not admit. But if honorable gentlemen would look to the terms of the treaty actually contracted they would see that the commissioners fol-

lowed the subjects very closely by making a reference only to a list growing out of the acts of particular vessels, and in so doing shut out a large number of claims which the Americans had previously insisted upon, but which the commissioners had prevented from being raised before the arbitrators.' All this points unmistakably to the definite and limited character of the claims which, in the judgment of the English negotiators, were alone to be submitted to arbitration.

It seems to me that Judge Williams, in the speech he made at the banquet I had the honor to give to the British High Commissioners in New York, expressed sentiments which can only be similarly construed. 'Many persons,' he said, 'no doubt, will be dissatisfied with their [the Joint High Commissioners'] labors; but to deal with questions so complicated, involving so many conflicting interests, so as to please everybody, is a plain impossibility; but in view of the irritation which the course of Great Britain produced in this country during our late rebellion, and in view of the one-sided and generally exaggerated statements of our case made to the people, the American Commissioners consider themselves quite fortunate that what they have done has met with so much public favor in all parts of the country and among men of all political parties.'

The true friend of America, the Duke of Argyll, speaking in the Upper House, was equally emphatic. 'The great boon we have secured by this treaty,' he said, 'is this: that for the future the law of nations, as between the two greatest maritime states in the world, is settled in regard to this matter, and that for this great boon we have literally sacrificed nothing except the admission that we are willing to apply to the case of the *Alabama* and that of other vessels those rules, I do not say of international law, but of international comity, which we have ourselves over and over again admitted.' It is impossible that the duke would have expressed himself in language so hopeful and so contented if behind 'the case of the *Alabama* and that of other vessels' he had seen looming up the colossal demands which were originally embodied in Senator Sumner's memorable oration.

The views thus put forward sank deep into the public mind, and the treaty was accepted and ratified by popular opinion on this basis. General Schenck, several months after the delivery of the above speeches, in addressing a Lord Mayor's banquet at the Guildhall, bade the English ministry and Lord Ripon 'congratu-

late themselves upon the success with which they have endeavored to bring about friendly relations between the United States and Great Britain.'

People here ask how he could congratulate the British government if he knew all the while that their construction of the treaty, which was to cement the friendship of the two countries, fatally differed from the construction put upon it by the government at Washington.

I have not given my own but the English view of the matter. When such momentous issues are at stake—when a false move on the diplomatic board may endanger the peace of two kindred nations—it is absolutely necessary that our people should know what is the English side in this controversy. The first duty of a loyal American citizen is to ascertain the whole truth, and not by ignorance or obstinacy to commit himself to a wrong course.

Many hard words have been lately spoken and written about Mr. Gladstone. I therefore feel it incumbent upon me to bear my testimony to the large and statesmanlike view of American affairs which he has taken for several years past, and to the cordial good feeling he has shown towards our country since he has been at the head of the present government. In spite of temporary misunderstanding, I will continue to hope that the Treaty of Washington will bear the fruit which he anticipated; that, to quote his own eloquent words in the House of Commons on the 4th of August, that treaty will do much 'towards the accomplishment of the great work of uniting the two countries in the ties of affection where they are already bound by the ties of interest, of kindred, of race, and of language, thereby promoting that strong and lasting union between them which is in itself one of the main guarantees for the peace of the civilized world.'

With great respect I remain,

My dear Mr. Colfax,
Very truly your friend,
Cyrus W. Field.

At this time a court of arbitration was sitting at Geneva to decide what damages England must pay the United States in accordance with the Treaty of Washington. The meetings were protracted, and much anxiety was felt over national embarrassments as to the blame and the wrongs in the long

controversy. Thomas Hughes, then a member of Parliament, became so concerned that he wrote to Field as follows:

House of Commons,
London, March 1, 1872.

Dear Mr. Field,—As I hear, with regret, that you are detained here by illness, I take the liberty, as an old acquaintance, of asking whether you cannot do something in your compulsory leisure to help our countries in this untoward business as to the case.

If you, who are so well known here, believe your government to be in the right, and that they never did waive, or meant to waive, the claim for indirect damages, and if you will make this statement publicly here, in any manner you please, it would certainly go far to induce me, and I think most of the other public men who were strong Unionists during your civil war, to advocate the submission of the whole case as it stands to the Geneva board. On the other hand, if you cannot do this, I really think we may ask for your testimony on the other side.

If you do not see your way to taking any action in the matter, pray excuse this note, for which my apology must be that this is no time for any of us who are likely to get a hearing to keep silence.

I am always yours very truly,
Thomas Hughes.

To this Field replied courteously and enclosed a copy of the letter that he had sent to Colfax a week earlier. The letter to Colfax seemed so apposite to Hughes that he had it printed in the *Times*. John Bright, who was also much concerned with the turn of events, wrote to Field at this time, as follows:

"This trouble about the treaty is very unfortunate. I think your letter admirable, and I hope it will do good in the States, where, I presume, it will be published. I confess I am greatly surprised at the 'case' to be submitted to the Geneva tribunal. There is too much of what we call 'attorneyship' in it, and too little of 'statesmanship.' It is rather like a passionate speech than a thoughtful state document. And what a folly to offer to a tribunal claims which cannot be proved. No facts and no figures can show that the war was prolonged by the mischief of the pirate ships; and

surely what cannot be proved by distinct evidence cannot be made the subject of an award. This country will not go into a court to ask for an award which, if against it, it will never accept. An award against it in the matter of the indirect claims will never be paid, and therefore the only honest course is to object now before going into court. Has the coming Presidential election or nomination anything to do with this matter? Or is Mr. Sumner's view of the dispute dominant in Washington? I should have thought your government might have said: 'We will not press the claims objected to before the tribunal, but we shall retain them in our "case" as historic evidence of our sense of magnitude of the grievance of which we complain.'

"This, I dare say, would have satisfied our government and people, and practically it would have satisfied every reasonable man in the States. To such as would not be content with it, friendship and peace would, in the nature of things seem to be denied."

Upon his return to the United States in the spring, Field talked to a number of his countrymen in order to learn their views on the *Alabama* claims. They seemed disposed to be fair toward England and disinclined to insist upon "indirect damages." He wrote to Bright as follows:

Gramercy Park,
New York, 2d April, 1872.

My dear Mr. Bright,—I arrived on 25th March, after a very rough passage of sixteen days. . . .

Since my return I have devoted much of my time to ascertain the real sentiment of the people of this country in regard to the Washington Treaty, and as far as I can judge, after seeing many persons of different political parties, it appears to be almost unanimous that our government has made a great mistake in including these indirect claims in the 'case.' I am convinced that the best people in England and America desire to have this question settled in a fair and honorable manner. In fact, many say to me that they have got tired of hearing about the indirect claims. . . .

With great respect and kind regards to your family,

I remain, my dear Mr. Bright,
Very truly your friend,
Cyrus W. Field.

The court of arbitration at Geneva continued its work in as judicial a spirit as possible, and finally fixed the amount of damages that England must pay the United States at about fifteen million dollars. This amount represented actual losses inflicted on Northern shipping and disregarded the extravagant claims by American politicians for "indirect losses" caused by the Confederate privateers. England paid the amount in 1873—a large sum for such a violation of neutrality—and statesmen on both sides heaved a sigh of relief. It had been the humiliation of criticism as much as the money that angered the British. Field's unofficial suggestions had helped, especially the suggestion for a special commission of British negotiators to come to Washington, and for a final decision by judicial arbitrators. For an amateur, Field was a diplomatist of no small ability.

When Field was in England during the winter of 1869-70, he was able to carry out some of the reforms in organization of the telegraph companies that had been advocated by Cromwell Varley in his letter to Peter Cooper over a year before. The friction and jealousies between the officials of the Anglo-American and the Atlantic Telegraph companies were finally surmounted by a consolidation of the two, in which the latter lost its name and entity. Field also helped to bring about a working arrangement between the New York, Newfoundland & London Company, the Anglo-American Company, and the new French company that had laid a cable from France to St. Pierre and thence to Massachusetts. The Anglo-American Company absorbed the Newfoundland company in 1873, thus gaining its valuable rights for exclusive use of the island's shores for thirty-one additional years. The original charter for fifty-year rights had been granted in 1854, so that the monopoly extended to 1904. The Anglo-American Company was finally absorbed by Western Union.

A typical example of Field's humanitarian use of the cable occurred in the autumn of 1871, when Mrs. O'Leary's cow

kicked over a lantern in Chicago, and a fire loss of two hundred million dollars followed. Field cabled to London that a hundred thousand people were homeless and suffering, and that the banking houses with American connections should organize a relief fund. Many other cablegrams were sent, and a large sum of money was collected for relief. The mayor of Chicago telegraphed: "God bless the noble people of London. Your response was received by our committee in tears. We are lifted from our desolation."

A few weeks later Field attended a telegraphic convention in Rome. Prompted by a letter from Morse, he argued for protection and inviolability of submarine cables during wars; in fact, spent Christmas and New Year's Day in this endeavor. The convention, which was international, lasted six weeks. Morse and Field were ahead of their time in the international sympathies that the telegraph had encouraged in them. They had seen the Civil War and the Franco-Prussian War, and had been shocked and revolted by them. While Field was in Italy, the people of New York were agog over the murder of the notorious financier, James Fisk, Jr., by a rival in a love affair. Fisk was called "the king of Wall Street" and had been associated with Jay Gould in various ventures. Wall Street scandals were becoming numerous in post-war New York.

Field went to Russia before returning home. So frequent were his trips across the Atlantic that in 1878 his distinguished guest in New York, Dean Arthur Penrhyn Stanley of Westminster, referred at the Century Club to "the wonderful cable, on which it is popularly believed in England that my friend and host Mr. Cyrus W. Field passes his mysterious existence, appearing and reappearing at one and the same moment in London and New York." Somewhat similar sentiments were expressed in November, 1872, by Premier Gladstone at a dinner given by Field in London shortly after the *Alabama* settlement.

Gladstone said in part: "The union of the two countries means, after all, the union of the men by whom they are inhabited; and among the men by whom they are inhabited there are some whose happy lot it has been to contribute more than others to the accomplishment of what I will venture to call that sacred work. And who is there, gentlemen, of them all that has been more marked, either by energetic motion or by happy success in that great undertaking, than your chairman, who has gathered us round his hospitable board to-night? His business has been to unite these two countries by a telegraphic wire; but, gentlemen, he is almost a telegraphic wire himself. With the exception of the telegraphic wire, there is not, I believe, any one who has so frequently passed anything between the two countries. I am quite certain there is no man who, often as he has crossed the ocean, has more weightily been charged upon every voyage with sentiments of kindness and good-will, of which he has been the messenger between the one and the other people."

Chapter Fifteen

EYES ON THE PACIFIC

A RESTLESS IMAGINATION like Field's did not stop at bridging the Atlantic. He hoped to see the Pacific likewise conquered by a cable, so that messages could be flashed around the world. At that time there was telegraphic communication from China to western Europe by way of the British cables and overland wires to India. Field hoped to see an alternate line by way of the Pacific islands to Japan and Shanghai, but did not wish to become involved and absorbed in the project as he had in the Atlantic cable.

Through his connections in Congress, Field used his influence in 1870 for obtaining privileges for a projected organization to lay a Pacific cable. The route selected was over six thousand miles in length, as compared with the two thousand miles of Atlantic cable. But by dividing this total into four parts between islands, no one span would be much longer than the Atlantic cable.

A cable from San Francisco to the Hawaiian Islands, Field estimated, would be 2080 miles. From Hawaii to the coaling station of Midway Island would be 1140 miles. The longest stretch, from Midway Island to Yokohama, would be 2260 miles. A cable from Yokohama to Shanghai would be 1035 miles. The total was 6515 miles.

This total was later found too small. The long span from Midway Island to Japan, with its great depths, was judged less feasible than a zigzag from Midway Island to the island of Guam; thence by way of the island of Yap to Shanghai, or by way of the Philippines to Hongkong. The total mileage of this would be well above seven thousand miles, and the

cost might run up to twelve or fifteen million dollars. This seemed to many people a large amount to spend for an alternate route to China. Perhaps a cable to Siberia would be shorter and cheaper, it was suggested. Perry McDonough Collins' overland telegraph to Russia by way of Alaska and Bering Strait would scarcely cost as much. As always, however, Field was optimistic, and he won the support of American capitalists associated with his previous ventures and also of several newcomers like Darius Ogden Mills, a Western banker who had "struck it rich."

Field's growing interest in the Orient led him in June, 1871, to go to Russia as a member of a committee from the Evangelical Alliance to exhort the Czar in favor of religious liberalism. He was still thinking of a Pacific cable, and he resolved to write a personal letter to the Czar. Upon his return to England, he composed the following letter to the Russian Grand Duke Constantine, with whom he had conferred and who he hoped would intercede for him with his Imperial Majesty:

London, 11th August, 1871.

To His Imperial Highness the Grand Duke Constantine:

Sir,—With this I have the honor to enclose a memorial addressed to His Majesty the Emperor of Russia respecting the establishment of a submarine telegraph communication between the west coast of America and the eastern shores of Russia, China, etc.

I shall esteem it a great favor if your Imperial Highness will be so good as to forward the memorial to His Majesty, with any observations on the subject which may be thought desirable.

With respect to the gentlemen mentioned in the memorial as prepared to join me in the enterprise, I may explain that they are among the very first merchants and capitalists of the United States. . . . As I am leaving for the United States this evening, my address will be Gramercy Park, New York. I would express my sincere thanks for the great kindness shown to myself by your

Imperial Highness, and for the interest you have taken in the subject I have so much at heart.

I beg to subscribe myself
With great respect,
Your most obedient servant,
Cyrus W. Field.

The enclosed letter or "memorial" addressed to the Czar was a long and formal document written by a man who had received little regular education but had mingled for years with the great and near-great. The boy from Stockbridge did not hesitate to express his convictions to the formidable Father of All the Russias. His memorial seems, in general, well phrased and convincing. It was as follows:

To His Imperial Majesty the Emperor of Russia:

The memorial of Cyrus West Field, a citizen of the United States of America, respectfully thereto,

That having taken an active part in the establishment of electric telegraph communication across the Atlantic Ocean between America and Europe, and having been also interested in the laying of the existing submarine telegraph lines between Europe and the East, he is now desirous of submitting to your Majesty a project for completing the electric telegraph circle round the globe by uniting by submarine cables the western coast of America with the eastern shores of your Majesty's dominions, and with China or Japan, or both, as may be found most expedient.

Having regard to the complete success, both scientific and practical, of the submarine telegraph cables now working, which are in the aggregate about 40,000 miles in length, your memorialist deems it wholly unnecessary to enlarge on the perfection attained in the manufacture of telegraph cables, or the facility and certainty with which they are laid in all parts of the world.

Experience has proved that submarine telegraph cables can readily be recovered and repaired in case of accident, so that there is practically no limit to the length of line which may be employed or the depth of the water in which they may with perfect safety be submerged.

Memorialist is aware of the strong desire existing in the United

States of America for the establishment of a telegraph cable across the Pacific Ocean in order to the furtherance of commercial interests and to the strengthening of the friendly relations which have for so many years existed between the United States and your Imperial Majesty's government.

From communications which memorialist has had with the government of the United States and with many leading members of Congress, he is able to say with confidence that both the government and the legislature take a deep interest in the subject, and that, as memorialist believes, they will readily join with your Majesty in making such arrangements as may be found necessary to carry out the enterprise.

Memorialist has made diligent inquiry from the persons best able to advise with respect to the practicability of uniting the two great continents by telegraphic cable, and he has received most satisfactory assurances on the subject.

The proposed line would be about 6000 miles in length, and would be made in at least two lengths, landing at one or more of the islands of the Pacific Ocean.

From this point the line would extend on the one hand to Russian territory, where it would be connected with the imperial system of land lines, and on the other hand it would run to the western coast of the United States, joining there the American wires, and thus give direct communication between Russia and the whole continent of America, and, by means of the cables now laid with every important telegraph line in the world.

Your Majesty will not fail to appreciate the importance and value of such a communication to Russia as well as to the United States of America.

It would be an act of presumption on the part of memorialist to affect to point out to your Majesty the advantages of the line in its international and political aspect. The cost of the line cannot be ascertained until the route is definitely settled, but it will be manifest that for such an undertaking the very best description of cable must be used.

From the best information which could be obtained, and from the experience of existing lines, memorialist is led to believe that for some years such a line would not in itself be remunerative as a commercial speculation, although there would doubtless be a large amount of business passing through it; and, further, that having regard to the risks necessarily incident to so great a work,

it is and will be impossible to raise the capital required for establishing the line without material aid from the governments directly interested.

Memorialist is therefore led to look to your Majesty and the United States government for assistance in carrying out this great undertaking, and, having taken counsel of his associates in former telegraphic enterprises as to the best means of effecting the desired object in the shortest time, he respectfully submits to your Majesty the following project:

1. That the proposed Pacific telegraph line should be established by a company formed by responsible persons experienced in telegraphic business, under the sanction and supervision of your Majesty's government and the government of the United States of America.
2. That the respective governments should each appoint a permanent director of the company.
3. That the course of the line, its termini and stations, and other needful arrangements be determined under the joint approval of the official directors representing the two governments.
4. That each government should guarantee for twenty-five years interest at three per cent. per annum on the cost of the line, the net receipts for each year (after providing for maintenance and repairs) being applied pro rata in relief of the guarantees.
5. That one-half net profits above six per cent. per annum be set apart as a sinking fund for return of capital, and the balance divided equally between the stockholders and the government.
6. That at the end of twenty-five years of guarantee the company shall retain the cable and other property, but without any exclusive right.

Memorialist believes that with such assistance as is indicated above the cables could be made and laid within three years.

The following eminent citizens of the United States have expressed their willingness to join memorialist in this important enterprise:

Peter Cooper,
Moses Taylor,
Marshall O. Roberts,
Wilson G. Hunt,

Prof. S. F. B. Morse,
Dudley Field,
Wm. H. Webb,
Darius Ogden Mills.

Memorialist now humbly seeks your Majesty's approval of the

above project, believing that if so approved the government of the United States will give their concurrence, and that the work will be speedily accomplished.

Cyrus W. Field
of New York.

Once more back at Gramercy Park, Field thought of some additional aspects of the Russian proposal that he should have included in his letter. For example, he was willing to agree not to kill seals or deal in furs in Russian territory. To obviate controversy with Japan, he would avoid the disputed island of Saghalien (or Sakhalin). The amount of money required should be limited. With these provisions in mind, he wrote again to the Grand Duke Constantine, as follows, urging a prompt answer:

Gramercy Park,

New York, 19th September, 1871.

Sir,—Referring to my personal interviews with you, and to my letter of 11th ultimo, in which I enclosed a memorial to His Majesty the Emperor of Russia respecting the establishment of a submarine telegraph cable between Russia and the United States of America, I now beg respectfully to submit to your Imperial Highness the following modifications of the propositions contained in that memorial, which I think will commend themselves to your good judgment:

1. The proposed guarantee of three per cent. not to commence until the day the cable is completed and in successful working order.
2. The amount of capital guaranteed not to exceed £3,000,000.
3. The company to bind itself not to kill seals, nor to deal in furs on any portion of Russian territory.
4. The cable not to be landed on the island of Saghalien.
5. In the event of any dispute arising between the cable company and any subject of His Imperial Majesty, the question to be referred to the Russian courts. In disputes between the cable company and American citizens, the courts of the United States to have sole jurisdiction.

May I respectfully solicit your Imperial Highness to take these

proposed modifications into your consideration, and, should they meet with your approval, I would beg the favor of your laying them before His Majesty the Emperor, with such suggestions as may seem to you advisable.

It is important that I should know the views of His Imperial Majesty's government at the earliest moment, as the Congress of the United States meets on the first Monday in December.

I beg again to express my sincere thanks for the great kindness shown to myself by your Imperial Highness, and for the interest you have taken in the subject I have so much at heart.

I have the honor to subscribe myself,

With great respect,

Your Imperial Highness's most obedient servant,

Cyrus W. Field.

For a mere American business-man to expect cooperation from the slow-moving and complicated Russian Government was perhaps a forlorn hope. Field may have been unduly exalted by the official greetings and royal glamour that he experienced in Russia, without sensing that it was largely empty show with little significance. Still, Russia had helped Morse and had shown gratitude for the advantages of the telegraph. Moreover, Perry McDonough Collins had obtained cooperation from Russian bureaucrats in his scheme for an overland telegraph to connect Asia and America; in fact, he had negotiated successfully through the same Grand Duke Constantine, who, as General Admiral of the Imperial Russian Navy, understood the need for communication by cable.

The enormous distances and lack of railroads throughout the great Russian empire had made its government ready to adopt the telegraph, which was particularly convenient in helping to quell insurrections. The problem of a six-thousand-mile ocean cable, however, costing fifteen million dollars was too much for the Russians, and they manifested small interest in Field's memorial. He visited Russia again in the winter of 1872 but was discouraged by the apathy of the officials. The phlegmatic Russian temperament was too much

for his eager and energetic nature. In the autumn of 1873 a financial panic began in America.

Nevertheless, the prospect of a Pacific cable by way of Hawaii still held attractions. Field even selected a sandy beach a few miles south of San Francisco as a terminus. The Hawaiian Government made him alluring promises at first, recognizing the prestige of his Atlantic success, but up to 1879 granted no definite concessions that would enable anyone to proceed with assurance. In that year, he received the following letter from the influential Yankee politician, Elisha Allen, who was acting as agent for the "King of the Sandwich Islands":

Hawaiian Legation, March 10, 1879.

Sir,—The twenty-fifth anniversary of the formation of the company for laying the Atlantic cable seems an appropriate occasion for giving an impulse to the great work of extending a cable across the Pacific.

I am sure that you will not be satisfied with anything less than a cable round the world.

The Hawaiian Islands have a very central position for the navigation of the North Pacific. They are a great resort for the naval and mercantile marine of the commercial countries.

His Majesty the King has long realized the great importance of a submarine cable to his kingdom, as well as to all nations whose vessels and citizens visit there, and has authorized me, by advice of his Cabinet, to grant you, your associates and assigns, the exclusive privilege of landing a submarine cable or cables on any of the Hawaiian Islands, and for using the same for connection with the United States, or any other country, and crossing any or all of the islands, and this for the period of twenty-five years.

Any land which you may find necessary to have for any of these purposes will be furnished by the government free of expense to you, not intended to include land for offices or houses.

It is to be understood that if you do not within five years begin the construction of the cable necessary to connect the islands with the United States, and establish the connection within ten years, this grant is to cease.

The King and Cabinet, having the greatest confidence in your ability and energy, anticipate the completion of the cable to the islands at an early day.

I have the honor to be, sir,
With great respect,
Your obedient servant,
Elisha H. Allen.

His Hawaiian Majesty's Envoy Extraordinary and Minister Plenipotentiary.

Hawaii's Government had been in a confused state since 1874, when King Lunalilo died leaving no children, so that dynastic troubles arose. Order had to be restored by the joint forces of England and the United States, and tendencies favored annexation by the latter country. Field was cheered by the new developments. He wrote to Allen as follows:

Plenipotentiary.
New York, May 17, 1879.

Dear Judge Allen,—I sail for Europe on Wednesday next, the 21st instant, and shall be absent five weeks from this city. During my visit there I shall confer with my friends in regard to the Pacific cable, and I am willing to head a subscription list with my own subscription of one hundred thousand dollars.

I shall be happy to confer with you on my return to this country. I have had a bill introduced into Congress granting permission to land and operate cables in the United States, which I hope will pass during this session.

With great respect,
I remain, dear Judge Allen,
Very truly your friend,
Cyrus W. Field.

The United States was just emerging from the strangling effects of the financial depression that had begun in 1873. The nation's business had almost stopped. Field's own fortunes had suffered with others, and in 1879 he lost a large amount from Samuel J. Tilden's manipulation of elevated-railway stock, which Field had sponsored and of which he was a large holder. Nevertheless he continued to work for a

Pacific cable. The officials at Washington were not inclined to incur large financial responsibilities for a cable to Asia. They inquired about costs. Field asked British contractors to estimate on manufacturing and laying a cable to Hawaii, thence one to Japan and one to Australia by way of the Fiji Islands and New Caledonia.

His position was that of adviser rather than active promoter, as he had already experienced enough worry over one such enterprise. In the summer of 1880, he sent a list of suggestions to those favorable to the project in Washington. These suggestions were as follows:

1. That the United States government obtain from some eminent electrician specifications for the best description of cable suitable for the great depths and the great lengths required to connect the western with the eastern coasts of the Pacific.
2. That the government advertise for tenders to manufacture and lay such description of cable, one-fourth the amount to be paid when the cables are all manufactured, one-fourth when they are on board the steamers and the steamers ready to sail, one-fourth when the cables have been successfully laid, and the remaining fourth when they have been worked successfully and without interruption for thirty days.

By adopting this course I think you would obtain a good cable at the lowest price.

The government could pay for such a cable by selling its four per cent. bonds, having a long time to run, at a considerable premium; and the revenue from such a cable would, in my opinion, steadily increase from year to year, and at no distant day be a source of revenue to the country.

Have you ever written to the American ministers in Japan and China on the subject? If the United States government desired it, and took the proper steps, I think that England, Russia, France, Japan, and China would each do something towards encouraging the enterprise.

Apparently the heavy losses that the nation had suffered in the financial depression, and the uncertainties of the political outlook both at Washington and Honolulu, combined

to dampen the enthusiasm of capitalists and politicians who originally favored a Pacific cable. The terms of the Hawaiian offer, as stated in Judge Allen's letter of March 10, 1879, required that if actual construction of a cable to Hawaii was not started within five years, the offer became invalid. Field gave the project all the encouragement that he felt justified in giving. In 1880 and 1881, when he and his wife traveled around the world, he spoke in favor of a cable in the Pacific ports that he visited, but received polite speeches rather than concrete help.

As the years went on, Field tried to revive negotiations for the laying of a cable at least as far as Hawaii. In 1884 he estimated that this two-thousand-mile line—about the length of the Newfoundland cable—would cost three million dollars. In later years the revival of this project had political complications, for in 1898 Hawaii was annexed to the United States. The publicity that Field had given the islands helped in demonstrating their importance to the politicians at Washington, who assisted in their annexation, very much as Perry McDonough Collins' project for an overland telegraph to Siberia by way of Bering Strait advertised Alaska to the United States Government, which thereupon bought the territory from Russia.

Eventually Pacific cables were laid along the routes that Field had suggested, and the technique that made them possible was the consequence of the experimental work that he had organized for the Atlantic cables. The men who toiled through Newfoundland fogs and grappled in Atlantic seas led the way for the linking of all continents by "whispering wires." They were the pioneers who demonstrated what could be done.

A striking demonstration of the conquest of the world by the telegraph was staged in 1871 in New York. Field's old friend, the one-time artist and professor, Samuel Finley Breese Morse, died in 1872, at the age of eighty-one. About a

year before the old inventor's death, a statue of him was unveiled in Central Park. It had been paid for partly by dollar subscriptions from telegraph operators in the United States and Canada. The unveiling had been planned for Morse's eightieth birthday but was delayed several weeks. Very few statues are erected to men still alive, so that the occasion was unusual. Morse was invited to attend but declined from modesty. The speech of William Cullen Bryant, presenting the statue to the city, was somewhat exaggerated. He said in part: "Every telegraph station is a memorial. . . . Every telegraph wire strung from post to post, as it hums in the wind, murmurs his eulogy. Every sheaf of wires laid down in the deep sea, occupying the bottom of soundless abysses to which human sight has never penetrated, is a testimonial to his greatness. . . . The whole world itself has become his monument."

That evening a stirring ceremony was conducted in the Academy of Music. A table on the stage held the original instrument used on the first line, from Washington to Baltimore. This was connected with telegraph lines extending to distant cities. At nine o'clock it was announced that all lines were clear for the farewell message of the inventor to his children—thousands of operators waiting everywhere. An attractive girl operator sent the message, to which Morse himself added his own name by manipulating the key in the dots and dashes of the Morse code.

As the white-whiskered old man was escorted to the table, tremendous applause burst forth. When he had clicked out the letters of his name, the crowd arose and cheered deafeningly. Morse was almost overcome and buried his head in his hands.

Then came the answers from telegraph stations all over the world—New Orleans, Quebec, San Francisco, Halifax, Havana, Bombay, Hongkong, and Singapore. It was a convincing demonstration of man's triumph over nature. In Morse's

valedictory, he expressed credit to Alfred Vail, Professor Leonardo D. Gale of New York University, Ezra Cornell, Volta, Oersted, Arago, Henry, Cyrus Field, and others.

Morse and Field were sincere friends. Both sons of New England clergymen of the old school, they had received similar upbringings in the puritanical tradition. Both had achieved early small successes and had then experienced tremendous difficulties and discouragement. After long struggles, both had become famous—almost household words throughout the world. Both had traveled so much that they had developed international views. They agreed on many important questions, such as the use of the telegraph to promote peace. Field named one of his sons Edward Morse Field.

When Field was disposed to mix with the prominent New Yorkers of the period succeeding the Civil War, he strolled the few blocks from his house to Madison Square, where the Fifth Avenue Hotel had become a noted meeting place for leading citizens. During the war this white-marble edifice was the headquarters for Northern patriots intent on preserving the Union. Among the well-known persons who gathered there were William Cullen Bryant, Horace Greeley, and Thurlow Weed (influential journalists); Commodore Vanderbilt, Jay Gould, Daniel Drew, James Fisk Jr., and Hamilton Fish (powerful capitalists); Boss Tweed, Samuel J. Tilden, Ulysses S. Grant, Chester A. Arthur, Roscoe Conkling, and James G. Blaine (politicians and statesmen). Other celebrities who dropped in were Henry Ward Beecher, the eloquent preacher; General John A. Dix, famous for his telegram, "If anyone attempts to haul down the American flag, shoot him on the spot"; and Mark Twain, living then at Hartford. Not all these men, of course, were friends; in fact, there were some bitter enmities among them.

For a quarter of a century this hotel was a rendezvous for prominent Republicans; important political conferences were held there. The plan to make Grant president in 1868

originated in its rooms. Even at the end of the century, the plan to make Theodore Roosevelt an unwilling vice-president was said to have had the same place of origin. Tom Platt, dictatorial political boss, used to hold forth in the "amen corner" of this hotel.

During the period when Field used to stroll into the Fifth Avenue Hotel, its standard charge for a room and a day's meals was two and a half dollars. Four meals a day were served, and the guests were seated at one long table. A guest could bring a friend to a meal without extra charge; in fact, as the hotel was supposed to be a home, a guest was expected to have occasional friends call upon him. Hospitality was the order of the day, and the American scene was less complicated than in modern times.

Shortly after the Civil War, the section of New York at Madison Square, where Fifth Avenue crosses Broadway, began classifying itself with the Rue de la Paix and the Suez canal among the great cross-roads of the world. Fashion and trade met at Fifth Avenue and Twenty-Third street—close to the Field home. This was the era of whiskers for men and enormous hoop-skirts for women. These adornments symbolized the respectability and elegance of the Victorians; they protected the masculine face and the feminine figure from depreciating criticism and vulgar contacts. It is a relief to note, however, that Cyrus Field, although he wore whiskers, was always natural and unaffected—never stodgy or smug.

Chapter Sixteen

PUBLIC-SPIRITED CITIZEN

WHEN FIELD WAS in London in December, 1872, Junius Morgan of the well-known American banking family asked him to have a look at the Cesnola collection of antiquities from Cyprus, which island had not yet been taken over from the Turks by the British. These antiquities, which illustrate the ancient arts and industries of the eastern Mediterranean, had been excavated by General (formerly Count) di Cesnola, American consul in Cyprus. They were of great value to students of the history and culture of Phoenician, Cypriote, and Greek mythology; in particular, the island had been the site of the most famous temple dedicated to Venus, goddess of love.

General di Cesnola offered some of the early relics for sale in Paris in 1870, but the full value of the collection was not appreciated until he shipped his most important finds to London and published an album of photographs. News of the collection reached America, and the director of the newly-formed Metropolitan Museum of Art in New York wrote to Junius Morgan in London asking whether the collection could not be secured for the United States, where classical studies—especially archeology—needed encouragement. The problem was to find public-spirited Americans who would contribute funds to buy the antiquities. Publicity was needed.

Although Field was not a patron of art, he interested himself in the matter; perhaps the name Cyprus (so like his own) attracted him. He looked up General di Cesnola and introduced him to Gladstone, Lord Granville, Dean Stanley of Westminster, and the American minister in London, Charles

Francis Adams. In accordance with the custom of the period, he gave a dinner party in honor of the General, and brought visitors to see the Cypriote antiquities. Articles began to appear in the newspapers about the collection. Gladstone, who was then Prime Minister, declared that the Cesnola finds were particularly important to students of the classics. The British Museum offered ten thousand pounds for part of the collection.

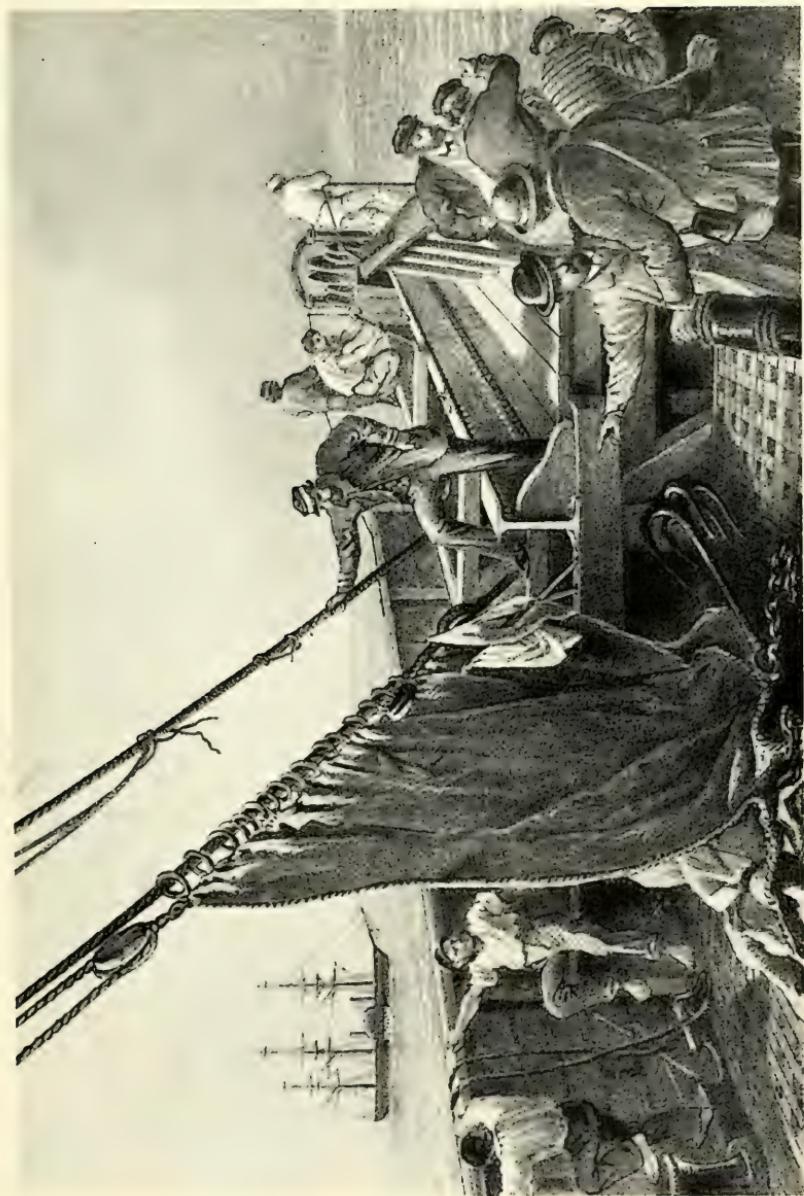
Field drove General di Cesnola to Morgan's office, and patriotically suggested an immediate purchase for the Metropolitan Museum of New York. Morgan agreed, and a part payment was made. The total paid for the collection was sixty thousand dollars, of which Field contributed a thousand and other Americans similar amounts. The collection formed the nucleus for an important department at the Museum. A book about the Cesnola antiquities was later written by John L. Myres, professor of ancient history at Oxford.

It must be confessed, however, that Field knew little of art. In this respect he was a typical American, who (as Theodore Roosevelt said) is apt to be inartistic. Field's house at Ardsley, for example, was essentially Victorian in its design and, fortunately, is no longer standing. Field was later criticized for putting elevated railways in New York's streets. Like most Americans of his time, he favored utility rather than esthetics.

In the autumn of 1873, Field was in New York when a financial panic that paralyzed American business began. Like most other observers in that and other panics, he believed that it was only a temporary reaction and that in a few days all would be well. In the numerous cablegrams that he sent to his British associates, he stated his day-by-day opinions on conditions in New York.

Thus on September 19 he cabled: "Great panic here in money market." The failure of the firm of Jay Cooke & Com-

PREPARING TO GRAPPLER FOR LOST CABLE



pany in Philadelphia had started a collapse. On the following day he advised: "Confidently believed, reliable quarter, government will take measures relieve market before Monday, but thus far panic has exceeded anything ever known." This panic had really begun in Vienna in the preceding May; it spread next to the United States, then back to Europe. It lasted several years. Field had experienced the long panic of 1837 but had been too young to understand it. The overdone expansion of the post-war period had brought no warning for him. His naturally optimistic nature made it difficult for him to comprehend the depressing factors that breed suspicion and fear, and he totally failed to understand the psychology of Wall Street operators who could capitalize panic and make money by smashing stocks down. This last characteristic was later to cost him the fortune that he had built up during a life of hard work.

Six weeks later he cabled: "Most of the firms that have suspended are those that have been doing too much business for their capital, but confidence is so shaken that many stocks are being sold at whatever they will bring. Think perhaps have seen worse, but don't yet see signs of permanent improvement." Another message was: "Western Union sold before panic at ninety. Has sold in last few days less than forty-four." This depreciation was, of course, moderate compared with the low figures ultimately reached. A terrible retribution was upon the nation for a false scale of values and too much materialism.

The distress caused by the depression aroused Congress in the spring of 1874 to pass a bill for expansion of the currency. Leading bankers and capitalists became alarmed at this threatened dilution of their resources. Meetings were held in the Eastern cities to protest against the bill and to petition President Grant to veto it. In New York on April 15, such a meeting was held in Field's house at Gramercy

Park. A resolution was adopted to present a petition to the President bearing the signatures of twenty-five hundred leading bankers and business firms of New York City.

On the committee in charge of this petition besides Field were John Jacob Astor, Ethan Allen, August Belmont, W. M. Evarts, Wilson G. Hunt, W. H. Macy, Marshall O. Roberts, A. T. Stewart, Jonathan Sturges, Moses Taylor, and J. A. Agnew. Several of these men were old associates of Field. A delegation from the committee, including Field, took the petition to Washington and conferred with President Grant. The bill was vetoed.

A letter received at this time from Gladstone is interesting as showing that, at the end of his first term as Prime Minister, he believed that the closing period of his life (he was then sixty-five) would be "spent in freedom from political commotion." Little did he realize that at three later periods he would again be Prime Minister; that in fact he had scarcely begun his political career. Gladstone's rival, Disraeli, who now became Prime Minister, was seventy and was also to be Prime Minister again at a later period. England apparently trained her leaders thoroughly before entrusting power to them. Gladstone's letter was as follows:

11 Carlton House Terrace,
March 31, 1874.

My dear Mr. Cyrus Field,—When I was about to thank you for your kind letter of the 10th, I received that of the 17th announcing to me the funeral of Mr. C. Sumner, and the great manifestation of feeling which it called forth.

His loss must be heavily felt, and his name will long be remembered in connection with the abolition of slavery, which was wrought out in the United States by methods so wonderful and so remote from the general expectation.

As respects events in this country, they have brought about for me a great and personally not an acceptable change. I have always desired earnestly that the closing period of my life might be spent in freedom from political commotion, and I have plenty of

work cut out for me in other regions of a more free and open atmosphere.

As respects the political position, it has been one perfectly honorable for us, inasmuch as we are dismissed for or upon having done what we undertook or were charged to do; and as respects the new ministry, they show at present a disposition to be quiet.

Believe me, my dear Mr. Field,

Yours very faithfully,
W. E. Gladstone.

After a trip to California with his wife and a party of friends, Field sailed once again for England in June of 1874. Having heard of a special celebration in Iceland, he resolved to satisfy an old curiosity to visit this island of the North Atlantic, south of which he had passed so often in his cable voyages, and which had once been given consideration as a half-way station for an Atlantic cable. During that summer, the people of Iceland were celebrating a thousand years of settlement of the island, and a royal party from Denmark was expected.

An American journalist, Murat Halstead, had been invited by Field to meet him in London and accompany a select party to Iceland. Somewhat jokingly Halstead called on Field at the Buckingham Palace Hotel. To his surprise he found a party really organizing to go, including several scientists and the noted author Bayard Taylor, who was to describe the millennial celebration for the *New York Tribune*. The party chartered a tiny steam yacht, instead of taking the monthly boat from Copenhagen that stopped at Leith in Scotland. The registered tonnage of the little vessel in which they braved the sub-arctic seas was less than a hundred fifty tons.

Before sailing, Field and Halstead toured the Highlands and met the others at Aberdeen, where the regulations required that they all enlist as British seamen, to be paid a shilling each for the voyage. Field enrolled as electrician. Stops were made at the Orkney, Shetland, and Faroe Islands; at the last place they met the fleet of the Danish king. After a

trip of great interest but some hardship—it has been described in a book by Taylor—they landed in state and visited the island's geysers and volcanic relics, attracting almost as much attention as the royal party. The Icelanders wondered whether this lean Yankee promoter, of whose exploits they had heard with special interest, was going to lay a new cable across the Atlantic by way of their island. Such, however, was not the purpose of the visit. It was merely Field's method of relaxation to test his energy by new explorations.

The visit to Iceland gave a temporary respite from the pessimism that was now prevalent in the United States, where the building of railroads had been overdone. The depression manifested itself in closed factories and banks. The centennial celebration of American independence was held at Philadelphia in the midst of gloom and apprehension. Among the exhibits was Alexander Graham Bell's toy and novelty, the "talking telegraph," later called the telephone. His efforts to sell stock in what afterward became the greatest corporation in the world were met by skepticism and rebuffs. This was the beginning of the Bell system, later absorbed into the American Telephone & Telegraph Company.

In contrast with the apathy and fear of other capitalists, Field retained his characteristic courage and cheerfulness during the depression. He had seen some bad days himself when his cables snapped and dropped to the bottom of the ocean. This boundless energy, coupled with his innate optimism and lack of guile, was, unfortunately, to bring disaster to his later years. Once more back in the United States he looked about for opportunities for public service. The depression in industry was deepening, and much suffering was apparent among the working classes in New York. There was need for Field's benevolent leadership.

New York had expanded amazingly in the post-war period and was growing rapidly uptown. Previous to 1850 the city was practically all below Fourteenth street. Field's residence

on Twenty-First street was originally in the suburbs, and his pasturing of a cow in Madison Square indicates the rural conditions there. As the city extended its streets uptown and absorbed the villages that had developed on Manhattan Island, there was need for coordinated municipal planning. The local politicians of the period, who were particularly dishonest, seemed incapable of supplying such leadership. New York was just freeing itself of the rule of Boss Tweed; this notorious politician was convicted of fraud in the autumn of 1874 and sentenced to twelve years in prison; he died in Ludlow Street jail in 1878.

Slums had developed in the downtown sections of the city because the people who worked there had no dependable means of transportation that would enable them to live away from their work. The dreadful epidemics of small pox, yellow fever, and cholera that periodically ravaged the congested sections demonstrated the need for the rapidly-growing city to spread northward, since, being an island, it could not grow in any other direction. The population was now over a million and rising rapidly.

The uptown stretches of Manhattan that had been dotted by farms, villages, and scattered taverns and stores—many of them disreputable and disgraceful—were altering into city squares. Shantytowns and squatters' settlements had occupied some of the most desirable locations, especially in and around Central Park. In the ill-kept streets were pigs, goats, and piles of rubbish. A unifying system of development was needed.

New York's requirements for rapid transit then, as now, were perennially ahead of fulfillment. Delays have been so customary in supplying transportation that by the time a new system is built, there is need of additional service. Traffic jams characterized New York's growth since the Erie canal gave the impetus for the city to excel its rivals along the Atlantic seaboard. To be a New Yorker meant to be elbowed

and delayed in the passage from home to business. There was some talk of a subway, but several decades were to pass before this materialized.

A new method was tried shortly after the Civil War. A short elevated railway from the Battery to Cortlandt street was opened as early as 1868 and was later extended through Greenwich Village. By 1876 the line had been completed along Ninth Avenue uptown to Sixty-First street, and trains ran once or twice an hour in each direction. The early cars were pulled by cables wound from drums, and the stub ends of the rails at the terminals were turned up in a curve to prevent any running-over. This infrequent service aroused little enthusiasm, although the promoters had talked of extending the line to Yonkers. The company finally went bankrupt, and the service ceased.

Cyrus Field, in the intervals between European jaunts, had witnessed the city's astonishing growth from the great fire of 1835 to the post-war expansion. From his home on East Twenty-First street, he had seen the rows of buildings extend farther and farther uptown until, from living in the suburbs near a cow pasture, he was hemmed in by sedate, brownstone developments that reflected the smug taste of the Victorian era. Gramercy Park, long an aristocratic center, became an island surrounded by neighborhoods of mixed and changing character.

Some of the curious old horse-cars that aided New Yorkers to get about ran near Field's home. The New York & Harlem railroad changed from horse power to steam power, as did the other pioneer railroads, but antiquated horse-cars remained on New York's streets until long past the coming of electric traction. Rich people did not have to patronize such crowded common-carriers, since they possessed carriages. But many public-spirited citizens, like Field, were concerned at the lack of dependable transportation for workmen who must maintain families on the low wages then prevalent.

Half-a-dozen miles north of the city, the village of Harlem had been expanding steadily along the valley of the Harlem River since early Dutch times and was now well grown. Obviously the natural direction of expansion for New York was northward to include Harlem. The surface lines of the New York & Harlem railroad, which had been absorbed by the New York Central, gave inadequate service for commuters and the poorer classes.

Apparently the city had reached the limit of the growth possible by the slow horse-cars, the omnibuses, and the surface steam-lines with their interference of the life in the streets. For several years there had been efforts to build and operate an elevated railway over the heads of pedestrians on the streets in order to avoid traffic delays. A trial had been made in putting up the "steel stilt" railway on Ninth Avenue on the west side, and a franchise had been granted for an east-side line on Third Avenue near Field's home. There were attempts also to build lines on Second and Sixth Avenues. But many difficulties had been encountered, and only short sections of lines were in prospect, with no unified system and without adequate finances. Severe legal difficulties were threatening, and the terrifying depression from which the nation was just emerging had made investors exceedingly cautious. The financial hurricane had wrought havoc in values and had deadened initiative.

There was need for a public-spirited promoter to complete and unify the elevated lines—a broad-minded man in whom the people would have confidence. Field, although nearing sixty, decided to supply this leadership. As with the cable project of twenty-odd years before, he did not foresee the complicated difficulties that would be met. As with his entanglement in the firm of E. Root & Company, which overshadowed his early married life, he did not realize what he was getting into.

The New York Elevated Railroad Company, which had

been granted a franchise for a Third Avenue line, was badly in debt. The creditors were not even hopeful of getting their money back. Field had seen similar situations in his mercantile experiences and had definite views about how to proceed. After careful consideration, he formulated a liberal and courageous offer.

He expressed himself as willing to acquire control of the elevated company and serve as its president without salary, as he had served in the cable-laying. But first he wanted it free of all hampering debts and insisted that future outlays must be for sound values and paid in cash. He favored canceling a contract calling for over a million dollars a mile in cost of construction—a price obviously too high and suggestive of under-cover deals. The city had been undergoing an epidemic of graft and dishonesty. It seemed to Field that, in view of the uncertainty of the creditors' recovering their investment, they should be willing to accept sixty cents on the dollar in the form of bonds. He hoped that the directors, being influential men, would agree to such a proposal and accept bonds for the debts due them.

Something of the moral spirit and resounding phrases of the period is indicated by an address about the elevated railway made before the New York Historical Society at the Academy of Music by a leading lawyer, Charles O'Conor, the same man who had once ridiculed the cable. He declared grandiloquently: "It is said, and doubtless with truth, that the great cities have hitherto been destroyers of the human race. A single American contrivance promises to correct the mischief. The cheap and rapid transportation of passengers on the elevated rail, when its capacity shall have been fully developed, will give healthful and pleasant homes in rural territory to the toiling millions of our commercial and manufacturing centres. It will snatch their wives and children from tenement-house horrors, and, by promoting domesticity, greatly diminish the habits of intemperance and vice so liable

to be forced upon the humbler classes or nurtured in them by the present concomitants of their city life." The word "concomitants" symbolizes the contemporary fondness for big words.

In the spring of 1877, Field took up the matter in his usual energetic and persuasive manner. Early in June he organized a meeting of all persons interested in the city's need for rapid transit and invited typical leaders in public affairs to be present. The poet and editor, William Cullen Bryant, now well past eighty years old, replied as follows:

The Evening Post,
New York, June 4, 1877.

To Cyrus W. Field, Esq.:

I cannot be present at the meeting to be held this evening at Chickering Hall, but I am heartily with you and your friends in the object of the meeting. I hope that a decided expression will be given to the conviction that an absolute necessity has arisen of instituting some method of conveying passengers between the upper and lower parts of the city which shall unite the greatest convenience with the utmost possible speed.

Yours faithfully,
Wm. C. Bryant.

There was opposition to Field's plans from capitalists associated with the railroads already operating from the Grand Central station and supplying service to Harlem. In reply, he pointed out that the elevated railway, starting from South Ferry on the tip of Manhattan, would pass the East River ferries on the way northward to the Bowery and Third Avenue, and would pick up and bring many passengers from downtown and Brooklyn to the Grand Central station. This would be a benefit to the three railroads using that station. In fact one reason for building the Third Avenue line was to connect the Ninth Avenue line with the East River ferries and the Grand Central.

Field's attitude in this project, as in the cable work, was simple and direct. He felt that he was doing the public a

service, and he appealed for support. His own remuneration was to come in the enhanced value of the stock he had taken over—a perfectly honest and straightforward reward. As president of the company, he forwent a salary and disdained byplays of stock-juggling. As events afterwards proved, his attitude was too naive and sincere. Predatory financial operators are inclined to take advantage of incorruptible promoters, whose moves are easy to anticipate because they fight fairly.

One of the most difficult obstacles in the early stages of the company's development was the opposition of property-owners to the construction of an elevated railway in the street just outside their upstairs windows. This opposition is easy to understand. The noise, the smoke, the jar, and the deprivation of light and privacy were serious reasons for protest. Most residents and owners of real estate along the route naturally objected to such an unpleasant demonstration of the machine age a few feet from their property.

The property-owners used every legal means at their disposal to prevent the company's use of the streets. They presented a strong and reasonable argument. Field recognized their position, but pleaded for the public's right to rapid and efficient transit and the needs of the rapidly-growing city. A system of elevated railways, he declared, was exactly what the haphazard settlements on the island should possess to bind them together into a great and prosperous metropolis. The issue was threshed out in the courts. The elevated company won an important victory, and a significant precedent was established for the common good as opposed to private rights. As events afterward proved, the building of the elevated system brought a real-estate boom in which many property-owners made a fortune.

During a year and a half of intensive effort, much progress was made. In the autumn of 1878, Field was able to report to the directors of the company as follows: "It is not eighteen

months since I purchased from some of your then directors a majority of the stock of your company at such a price that today it sells for more than five times as much as it cost me; and at the same time I bought from the same parties a very large amount of bonds, and today they sell for more than double what they cost me, including seven per cent. interest to date. The above stock and bonds I purchased on the express condition that the contracts of the company with certain parties to build this road for one million two hundred thousand dollars per mile, payable one-half in stock and the balance in first mortgage bonds of this company at par, should be cancelled. The amount that has been saved to this company by the cancelling of this contract you all well know."

This optimistic report might lead a reader to infer that building and operating of the elevated railways had been an easy job. It was quite the contrary. Problems were met that today would seem impossible but were very real at the time. Many people, for example, were at first afraid to ride so high in the air and predicted terrible calamities from collapse of the supporting columns or derailments that would hurl train-loads of screaming passengers upon traffic below. To counteract this attitude, the company induced prominent leaders in public life to sanction the elevated system by taking ostentatious rides on it, so that the faint-hearted would summon courage and try a chance in the air. Fashionable ladies helped to set the style. For many years, steam locomotives were used to haul the trains, as electric motors had not been perfected; and live coals and hot water were dropped on pedestrians and horses in the streets. The smoke belching from the locomotives blew in the windows of indignant housewives or blackened laundry hung out to dry. It even penetrated the veils of lady passengers and left patterns of soot on their faces.

As might be expected from a public-service corporation operating in a large city, there were recurrent troubles with the workmen. After the Civil War, wages and the cost of liv-

ing experienced a steady decline. As the evil effects of the depression of 1873 wore away, however, a new prosperity developed. The propaganda of labor unions began to influence employees everywhere, and demands were made to better the conditions of work and the schedule of wages.

When the elevated railway had built up its position as the most important factor in the transportation of the city's millions, the employees realized the essential part which they played in municipal economics. In particular, the trained and skilled engineers deemed themselves a vital element in New York's daily drama of the streets. They went on strike, and troubles loomed. Field met a deputation of the men and effected a quick agreement, so that the public would not be inconvenienced by lack of its customary service. Later, he invited some of the employees to a dinner at his Gramercy Park residence, where they listened with interest to a speech by the aged Peter Cooper, who told them of the city as it had been in 1800, when he was a boy nine years of age.

Years later, one of the men involved in the strike negotiations, William McDowell, wrote of Field's treatment of these employees in an article in *Harper's Magazine* shortly after Field's death. This account is interesting as showing early social conditions in New York. The article said in part: "At the time of the strike of the engineers on the elevated road in New York I had a part in bringing the representatives of the engineers and the late Cyrus W. Field, a director in the elevated company, to a meeting that resulted in a quick understanding between the conflicting interests and an ending of the strike. Mr. Field was so pleased with the fairness of the committee representing the engineers with whom he had to deal that he invited them at once to dine with him at Delmonico's, an invitation which their representatives declined for them, fearing that its acceptance might be misunderstood. Mr. Field, however, continued to feel that he wished to extend some social courtesy to the employees of the elevated

road, and at a later date, when he was all-powerful in that corporation, he issued a formal invitation to the employees to a reception at his house. To a large number the initials 'R. S. V. P.' on the lower corner of the invitation were a great mystery, and, as the story goes, the invited compared notes and sought an explanation of them. At last one bright young man announced that he had discovered what they meant, and he explained to the others that 'R. S. V. P.' stood for 'Reduced salaries very probable.' "

Obviously, Field did much for the development of New York's transportation system, at a critical time when the city's irregular growth needed just the impetus and unifying influence that well-managed elevated railways could supply. He worked for the benefit of the people of the city; in fact, he aroused resentment among financiers who had selfish aims to accomplish. For example, as soon as he deemed the condition of the operating company warranted it, he advocated reducing the fare from ten to five cents for all hours of the day, so that a poor man using the line would not be charged more than he could afford. At that time twenty cents a day for transportation was a laborer's income for an hour's work.

There were other complications to engage Field's attention. In addition to the Third Avenue and Ninth Avenue lines, elevated lines were also built on Second Avenue and Sixth Avenue by other promoters. All these lines, including Field's were leased by a third corporation, the Manhattan Company. This operating company had been promoted partly by Samuel J. Tilden, a resident of Gramercy Park, whom Field had interested in his original plans to give New York an adequate transit system and who had acquired stock at a very low price per share. Tilden, a former governor of the state, had really been elected President by the voters of the nation in 1876, but had been defeated by Hayes in the electoral college—a contest in which David Dudley Field acted in a legal capacity for his neighbor. Cyrus Field had en-

abled Tilden to buy a large block of elevated stock at a bargain, but naturally wished him to hold it until success was assured.

In 1879, when Field was in Europe, Tilden's premature sales of elevated stock on the Exchange broke the price, and Field had to buy heavily in order to give market support and allay destructive rumors. In the language of Wall Street, Tilden "unloaded" his shares to the extent of a million dollars, and Field had to buy to bolster the price. He maintained that Tilden had given his word not to sell. Naturally when he returned from Europe, he was no longer a friend to his neighbor, who he considered had betrayed him. There is a statue of Tilden today on Riverside Drive in New York.

This loss was a severe blow to Field financially. Although he was a multi-millionaire, a good part of his fortune was "on paper," that is, in securities that might depreciate in price. His conscientious efforts to hold up the price of elevated shares in the face of litigation, "watered" stock, and evil rumors were to have a still more tragic sequel. He was an exception among the experienced and ruthless capitalists of the financial district, who operated in that period according to cut-throat methods.

Since the completion of the cables, Field had varied his investments by buying coal-mining and railroad stocks, from both of which he made profits. One of his most profitable investments was in the Wabash Railway, of which he served as president for several years until he resigned in 1880. While working for the completion and organization of this railroad, he was associated with the well-known financier, Jay Gould, sometimes styled "the little wizard of Wall Street," although he was also called other names.

Gould impressed Field, who admired action, and the two cooperated in organizing the elevated system. The "wizard" gradually acquired large holdings of elevated stock. In 1882 the public were surprised to see that the Manhattan Company

was diluting its stock by issuing a large proportion of new shares. Despite Field's known probity, this tended to weaken the confidence of the public in these securities. Later there came a false rumor that the company's charter was to be canceled. The shares that had been quoted around seventy-five dollars dropped to less than a quarter of that figure. After remaining at a low price for a time, they began rising to their former levels, as the Manhattan Company absorbed its two parent companies in one of the mergers so common then. All these fluctuations and complications in the finances of the elevated railways were part of the new technique of American business that developed so markedly after the Civil War, when financiers "ran wild" in Wall Street.

When Field advocated a reduction in the fare on the elevated system from ten cents to five cents for all hours of the day, Gould objected, but Field's faction still controlled a majority of the shares. So bitterly did the opposing faction fight this reduction that a bill had to be passed at Albany to legalize the action. Governor Grover Cleveland (later President) vetoed the bill. There were high feelings and lingering resentment from this precedent-setting fight, but the fare was finally reduced despite all the opposition.

Chapter Seventeen

A NATIONAL BENEFACTOR

CYRUS W. FIELD WAS now a well-known man. His deeds, his wealth, and the essentially American qualities of his success had made him a favorite subject for sermons on perseverance and for articles about the applications of science. A generation of children had read the jingly stanzas of "How Cyrus Laid the Cable," as printed in the Sanders fourth readers that were used in hundreds of schools. Thousands of shrill-voiced youngsters had declaimed the verses that originally appeared in *Harper's Weekly*:

*Twice did his bravest efforts fail,
And yet his mind was stable;
He wa'n't the man to break his heart
Because he broke his cable. . . .*

*Once more they tried—hurrah! hurrah!
What means this great commotion?
The Lord be praised! the cable's laid
Across the Atlantic Ocean.*

*Loud ring the bells—for, flashing through
Six hundred leagues of water,
Old Mother England's benison
Salutes her eldest daughter.*

*O'er the land the tidings speed,
And soon in every nation
They'll hear about the cable with
Profoundest admiration.*

Because of, or despite, this country-wide notoriety, Field was recognized as a public-spirited capitalist of unusual organizing ability who was unlike the typical New York promoter or Wall Street operator. There was genuine affection

for him as a benefactor of mankind, and a sort of proprietary respect for his world-wide fame. He was a rich man who had made his fortune honestly in carrying out a difficult plan by hard work despite discouraging blows of fate.

There still lingered in the United States, however, an undercurrent of dislike for England and for persons favorable to that country. This was a relic of the Revolution and the War of 1812. At times, for example during the strained period of the Civil War, Field was considered unduly friendly with the British. His cordial entertainment of European visitors was not entirely liked by a nation brought up to "beware of foreign entanglements" and influenced by orators of "spread-eagle" patriotism.

A number of British and American dignitaries attended a dinner that Field gave in New York on the twenty-fifth anniversary of the first meetings of the New York, Newfoundland & London Company. This was on March 10, 1879, when a more hopeful feeling about the country's financial future was succeeding the discouraging panic that began in 1873. Sir James Anderson sent a cablegram pointing out that since Field began his first promotion, sixty thousand miles of cable had been laid, at a cost of about a hundred million dollars. He continued: "Distance has no longer anything to do with commerce. The foreign trade of all civilized nations is now becoming only an extended home trade; all the old ways of commerce are changed or changing, creating amongst all nations a common interest in the welfare of each other."

Another cablegram, from the Dean of Westminster, Arthur P. Stanley, called the celebration "the silver wedding of England and America." It continued: "What God hath joined together let no man put asunder. . . . Already instantaneous communication between the Old World and the New has been consigned to the commonplace book of history. It has become one of those familiar things which we forget all about because they are familiar . . . things which are of the

highest value, but of which it is hard to speak without talking platitudes." Already the old difficulties of communication were being forgotten; after a dozen years of cable service, the public was taking it for granted—its story was, as the Dean said, a "platitide."

The Reverend William Adams, old friend of the Fields, said of the cable at this dinner: "Though the ear catches no articulate words passing along its quivering strands, yet this polygot interpreter is speaking now, with tongue of figure, beneath the astonished sea, in all the languages of the civilized world." This was a reminder of the wonder and appreciation that the first cables originally aroused.

The distinguished Victorian churchman, Dean Stanley, who did so much to make Westminster Abbey a British shrine, preached in New York during the autumn preceding this banquet. At that time he visited Ardsley and spoke of the capture and the heroic death of Major André, which had taken place in that locality. The capture of this British spy, in his effort to negotiate with Benedict Arnold, had taken place near Tarrytown; the execution had been across the Hudson near Washington's headquarters. The story was that Washington had closed his shutters in order not to see the hanging.

The visitors at Field's house-party proposed that some of them cross the Hudson to Tappan and endeavor to find the place of execution. These inquiries near Washington's reputed headquarters failed to reveal the desired information. At last an aged resident over ninety years old said that he remembered when the body of André was dug up and taken to England in 1821. He had stood by when the grave was opened and had noticed that the roots of an apple tree were growing over the coffin. The tree was found to be still there.

That evening when the youth and bravery of André were discussed again, Field impulsively said to Stanley: "Mr. Dean, if you will write an inscription, I will buy the land and put

up a stone." His purpose was simply to mark an incident notable in American history. But when the newspaper headlines reached the public, their sensational phraseology gave the impression that Field, an Anglomaniac, was erecting a monument to a British spy who had worked to make the Revolution a failure. The old "spread-eagle" patriotism was whipped up and resentment flamed against him who had been "gallant Cyrus." It was one of the "tempests in a teapot" that Americans welcome for excitement.

Dean Stanley was astonished at such a reaction. He wrote: "If you find that there is really a feeling against it, pray do not think of it. The game is not worth the candle. Poor Major André, engaging as he was, is not worth rekindling of forgotten animosities."

With his customary perseverance, Field continued with his plans. He tried to get the New York Historical Society to cooperate and give the monument the aspect of an ordinary historical marker, but that organization declined to be implicated. According to Field's instructions, a stone like an ordinary cemetery-monument was cut and inscribed as follows:

Here died, October 2, 1780,
Major John André, of the British Army,
Who, entering the American Lines
On a secret Mission to Benedict Arnold,
For the Surrender of West Point,
Was taken Prisoner, tried, and condemned as a Spy.
His Death,
Though according to the stern code of war,
Moved even his enemies to pity,
And both armies mourned the fate
Of one so young and so brave.
In 1821 his remains were removed to Westminster Abbey.
A hundred years after the execution
This stone was placed above the spot where he lay
By a citizen of the United States, against which he fought,
Not to perpetuate the record of strife,

But in token of those better feelings
Which have since united two nations
One in race, in language, and one in religion,
With the hope that this friendly union
Will never be broken.

Arthur Penrhyn Stanley, Dean of Westminster.

“Patriotic” Americans, whose feelings had been aroused, were indignant that Field should carry out his plan in the face of their opposition. Some of them procured dynamite and blasted the offending monument. Field had a new one cut and placed. In November of 1885, this also was dynamited. Deciding not to replace the marker again, Field announced that the spot was now sufficiently marked. It was indeed: the “insult” to the nation’s glory was “avenged.” Unknown patriots had demonstrated their spirit.

In October 1878, another memorial in which Field participated aroused no such resentment. On the seventy-fifth anniversary of the marriage of his parents, he and three other sons gave the town of Haddam for a park or public green the site of the meeting-house to which the “old parson” and his new bride had come in early married life. A similar gift of a park and memorial tower was made by Cyrus and David to the town of Stockbridge. The father’s first charge as a young man had been at Haddam, Connecticut, after which he had gone to Stockbridge; but he was recalled to Haddam for a term of years in later life, after which he retired to Stockbridge to spend his last years among the Berkshires.

Field’s hard application on the elevated-railway problem emphasized the need for relaxation to improve his health, which had never been strong. He arranged a trip to the south of France and Algiers for the winter and early spring of 1880. While taking this rest, he had time to reflect and mature his plans. He was now sixty years old, and the nervous energy that had sustained him on difficult tasks was a

little diminished. Reviving prosperity in the United States had restored his fortune, despite the serious loss due to Tilden's defection. In particular he had made a large profit by helping to complete the Wabash Railway, of which he had been serving as president.

Perhaps it was time to retire from active business and live on the several millions that his courage and initiative had brought him. Once before he had "retired"—in 1853 when he was thirty-three—but he had not been able to remain idle. Now he would be more content to play the observer and merely advise other men instead of leading them.

He was still negotiating about a cable to Hawaii but was resolved to let others do the active work and worrying. Perhaps a good stimulus for that scheme would be the fulfillment of his old desire to take a trip around the world, starting by way of the Pacific. When he returned to New York, therefore, he resigned the Elevated and Wabash presidencies and put his business affairs in condition for a prolonged absence. October, he believed, would be a favorable month for beginning the long trip.

The coming political campaign, however, began to engage his attention, particularly because of his friendship with the Republican candidate for president, James A. Garfield. This self-made man had begun life as a canal-boy in the rough days when Ohio, where he was born, ranked as "the West"; he had succeeded in attending Williams College and, entering politics, had become widely respected. Field decided to postpone his trip until after the election, so that he could vote for Garfield and influence other votes in favor of the Republicans.

He was able to exert some indirect influence a week before the election in a speech that he made at a banquet where he was the guest of honor. This affair was a spontaneous expression by friends and neighbors who wished to give him a "send-

off" for his world cruise. The notice of the event that he received was a sincere example of the fondness for him felt by many associates and admirers. It was worded as follows:

Cyrus W. Field, Esq., New York:

Dear Sir,—A few of your neighbors and personal friends are desirous of meeting you in a social and informal way before you start upon your tour round the world. They will be glad if you will give them the pleasure of your company at a dinner on some evening in the latter part of October. Tuesday, the 26th, is suggested as a suitable time; but if any other day will better comport with your convenience, you have only to name it. They are not willing you should go away without their greeting and God-speed.

This banquet was more than a perfunctory ceremony for a multi-millionaire; it was a real tribute, and Field enjoyed it thoroughly. One of the speakers, General Horace Porter, declared enthusiastically: "Beyond the sentiment of friendship we all have a profound admiration for one who, at a period of life when most men, having surrounded themselves with the rich things of earth, in personal comfort, art, and literature, would be content to retire to some shady Arcadia and enjoy the rest to which they were so fully entitled, is bristling with all the activity of youth, seeking new worlds to conquer and projecting new enterprises."

Before he left the country, he had an opportunity to do a service for the New York Historical Society, which nevertheless declined cooperation with his efforts to maintain a monument to Major André. He wrote them in support of their proposal to erect a monument to Nathan Hale, who, as a captain in the Revolutionary army, had been executed by the British as a spy. The André and Hale cases were similar, but André had been a British rather than an American spy.

Field wrote the Society as follows: "I am glad to hear that it is proposed to erect a monument to Nathan Hale. Many years ago I joined with others in such a memorial at Coventry,

Conn., where he was born. But one ought to be erected in this city, and, if possible, on the very spot where he died. That spot you have, I understand, ascertained to be at or very near the armory of the Seventh Regiment. What an inspiration would a monument there be to our young soldiers! There ought to be inscribed on it his own immortal words: 'I only regret that I have but one life to give for my country.' If the New York Historical Society will obtain permission to have a monument erected there, I will, with pleasure, bear the whole expense."

Election day was November 2. Field succeeded in sending a number of voters to the polls to vote for Garfield, who was elected. The next morning at the early hour of four o'clock, he left in a special car for San Francisco. As a former railroad president and a power in Wall Street, he was shown every courtesy. People everywhere knew his name and had seen pictures of the bearded Yankee who had given the world an Atlantic cable and New York "a street railway that ran up in the air." At San Francisco he sailed for Japan.

The trip across the Pacific demonstrated to him the immense distances of that ocean as compared with the moderate span from Newfoundland to Ireland. Even after making stops at various islands, there would be enormous difficulties, he could see, in such a long cable laid in such deep water. He realized that the line would eventually be laid, but perhaps not in his lifetime.

Much as he needed such a change and rest as the trip gave him, the monotonous expanses of water made him restless and he wondered what was going on back in the city of the elevated railway. Such a feeling was not conducive to leisurely sightseeing in Oriental lands like Japan, China, the Malay States, and India. As many other Americans have done, he surveyed the conventional tourist sights in a somewhat absent-minded mood.

One of the pleasantest features of the trip was the cordial-

ity with which he was received by British officials, who ordinarily did not open their hearts to American travelers. His wide acquaintance with such well-known men as Gladstone, John Bright, Dean Stanley, Edward Archibald, Sir Charles Bright, Sir James Anderson, Goldwin Smith, etc., enabled him to talk with the British wherever he went. Also from his association with the American presidents and their cabinets he was able to enlighten his hosts on conditions at Washington.

His stay in India was the most extensive, because of his familiarity with the British officials. The Governor General at that time was his old friend, the Marquis of Ripon, whom he had entertained when Her Majesty's High Commissioners came to the United States to negotiate the *Alabama* claims. India interested him more than the countries he had just seen, because he felt racially allied both to the people and the governing class. The spectacle of teeming masses of the white race living under such straitened economic conditions gave him much food for thought.

His thoughts, however, reverted continually to the Western World where his deepest interests lay. Instead of spending leisurely months in Oriental wanderings as he had at first intended, he arrived in the south of France in early March, having given Asia a rather cursory survey. A few weeks more of idling and he was back in New York by the middle of May. His round-the-world trip had lasted less than six months.

The new Secretary of State, the "plumed knight" James G. Blaine, who was as influential as Garfield, wrote him an official welcome, as follows:

Department of State,
Washington, D. C., 23d May, 1881.

My dear Mr. Field,—Welcome, thou wanderer! We intend now to anchor you for some time in your native waters.

Your arrival is timely. You can be of great service to the country

and to the administration, which counts you among its chief friends. . . .

Hastily and truly,
James G. Blaine.

President Garfield, as a loyal son of Williams College, planned to attend that college's commencement on July 6. His wife and several members of the cabinet, including Blaine, were to accompany him. Field courteously invited the Presidential party to break the journey at Ardsley and to spend a day or two at his place on the way from Washington to Williamstown. The invitation was accepted.

But when President Garfield went to the Pennsylvania station on July 2 to begin this trip north, he was shot by an aggrieved office-seeker and after a few weeks died. He had been in office only since March. The nation was shocked; for the second time since the Civil War a well-beloved president had been killed by a crank.

Field was deeply affected, and his sympathy went out especially to the wife and five children. He wrote to a friend in Washington to ask, in case the President died, whether the family would be left adequately provided for. The answer was that only about twenty thousand dollars would be available.

On the day of the Williams commencement, July 6, he sent the following message by telegraph and cable to capitalists whom he knew both in America and Europe: "If President Garfield should die from the wounds received on 2d instant he would leave for his wife and five children about twenty thousand dollars. I shall tomorrow, Thursday, morning exert myself to the utmost to raise a sum of money to be presented to him at once, as I feel confident it would help his recovery if he knew that in the event of his death his family would be provided for. I shall cheerfully subscribe five thousand dollars towards the sum to be raised. If you or

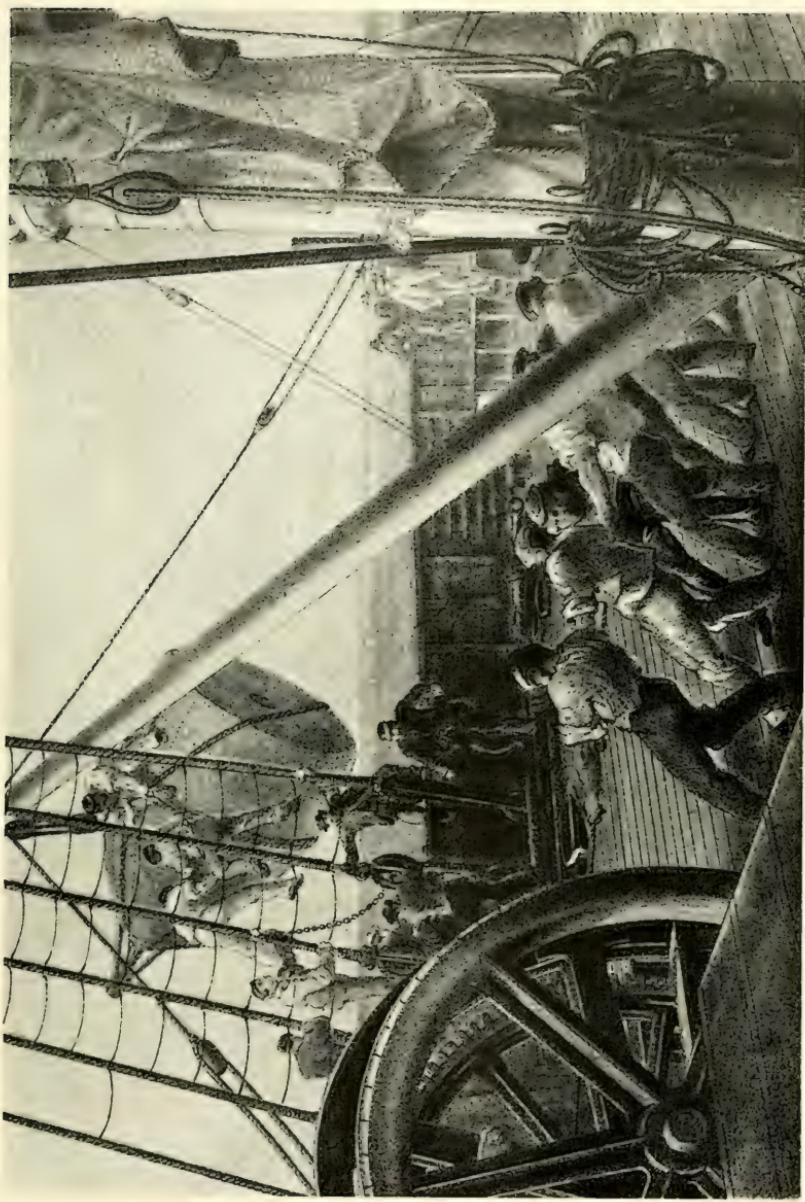
any of your friends would like to join, please telegraph to me early tomorrow, Thursday, for what amount I may put your name, and oblige."

Such an appeal coming from Cyrus Field aroused immediate response. Contributions ranging from five thousand dollars to a silver dime (given by a child) were sent to his office at 145 Broadway. A total of over three hundred sixty thousand dollars was raised. This was invested in sound bonds and brought in an assured income. It helped to educate the children, one of whom, Harry A. Garfield, later became president of Williams College and organizer of the internationally-known Institute of Politics. After the death of Mrs. Garfield, the funds were divided among the five children. They always felt supremely grateful to Cyrus Field for his generous impulse. At this time, Field managed to get a bill through Congress to pay a pension of five thousand dollars to widows of ex-presidents; Mrs. Polk and Mrs. Grant benefited by this.

Field himself was almost the victim of an act of malevolence in the following spring. A mail-carrier, riding on the Third Avenue elevated, stepped off the train and threw his mailbag on the station platform. When the bag hit the platform, there was an explosion of a parcel inside. Examination showed that the burned remnants of the parcel were addressed to Field. A similar package in the bag was addressed to William H. Vanderbilt.

After this exhibition of American gratitude, Field gave orders that all packages delivered to the house must be plunged into a tub of water. His daughter, Isabella Field Judson, reported that this order caused consternation among the young ladies of the household, who feared for their new spring gowns and Victorian finery. However, no other bombs were found, and the usual routine was resumed at Gramercy Park, which was now near the center of the city's shopping district. Stores were moving uptown and eastward. Around

PREPARING LARGE BUOY FOR LAUNCHING



Madison Square flourished luxurious hotels, sedate clubs, and fine residences—centers of social and political life.

Observers of New York at that period, the early eighties, have described the city as noisier than today. Horse-cars clanged up and down the streets warning clumsy trucks off the rails. The paving was the noisiest possible, cobbles and blocks of stone; a smooth asphalt surface had been tried and judged too slippery for horses. Steel-shod hoofs on the uneven paving-blocks added to the rumble of the heavy vehicles and the roar of the steam-driven elevated trains.

The district had changed greatly from the time when the Fields led their cow to pasture in Madison Square. Electric lights were coming in; Edison's first generating plant was opened in September of 1882 with fifty-nine customers. This first electric-lighting system was downtown in the business district near Field's office. Homes were still lighted by oil lamps and gas, but gradually they too were wired for the miraculous incandescent bulbs. Telephones were coming into use—"talking telegraphs" as they were first called in derision. Field supported these innovations when they were introduced and sometimes aroused jealousy among conservative neighbors, especially at Ardsley where his telephone was the pioneer.

A new metropolis was rising as New York expanded uptown. The Brooklyn bridge was completed, and the downtown sections of the city were rebuilt. The lean years of the seventies were forgotten as America forged ahead into prosperity and progress. Inspired by the constructive spirit now under way, Field acquired a desirable plot of land at the foot of Broadway—the historic site of Washington's headquarters—and arranged for the erection of the well-known Washington Building for the use of business offices. This tall structure was long a landmark to vessels coming up the bay. The attractive view from the Battery, with ships and sea air to re-

mind Field of his years of ocean vigils, was one of the consoling factors of his later years. No. 1 Broadway was a desirable address.

The position that Field occupied in financial and political circles brought him the ambition to own a New York newspaper and to demonstrate an improved news service by a more generous use of cables and telegraphs. His fortune was sufficient to enable him to acquire the *New York Evening Express* and *The Mail*, and to combine them into *The Mail and Express*. During six years of the middle eighties, he directed the policy of this paper. At first, his enterprise and liberal views made the enterprise seem promising, and he enhanced his following among readers of the metropolitan district.

He gradually learned, however, as have many other wealthy men, that running a daily newspaper in a large city is a complicated and highly-specialized job. A liberal policy and a generous purse in such an undertaking lead to suspicion and abuse. People do not understand a man who is exceptionally truthful and quixotic. American journalism of less idealistic and broad-minded views has usually succeeded better and survived the years longer.

Field himself did not possess any particular literary ability and was never a talented writer. Like most men who talk easily and persuasively, he was less convincing when addressing an unseen audience. His special gift lay in winning over a small group whom he could inspire with his personal energy and magnetism.

As the years went by, he realized that he was not so interested as he had imagined in controlling a metropolitan newspaper. Competition in the field was sharp and recriminations violent. There was small satisfaction in courting criticism, misinterpretation, and slander. It is interesting to note in this connection that Field was one of the comparatively few Americans successful in recovering a large sum from a New York newspaper for libel. He sued James Gordon Bennett,

publisher of the *New York Herald*, because of damaging statements about "sham dividends" on preferred stock of the Wabash Railway, and won a verdict for \$25,000. Ordinarily he overlooked such unfair attacks and forgot them as quickly as possible.

After his Wall Street disaster in the summer of 1887, Field looked around for a buyer for his paper and a few months later sold it under pressure of his debts. It had not been a satisfactory investment. Most individuals, he had discovered, possess a rather limited ability and should keep within those limits. His own forte was promotion rather than competitive operation; he was too fair-minded and chivalrous to challenge successfully the standards that then prevailed among American newspapers.

Chapter Eighteen

LUCK TURNS AGAIN

THE EIGHTEEN-EIGHTIES were a comparatively happy period for a majority of the American people. In the seventies the country had suffered a terrific chastisement for over-indulgence during the post-war expansion. The nineties were to bring a similar chastening. Between those two depressions stretched a succession of unruffled years when the nation displayed its best gifts and its pleasantest graces. The Civil War animosities were gradually fading, and even the disgraceful abuses of the Reconstruction period were being forgotten.

In foreign affairs, relations with England were much improved since payment of the *Alabama* claims. There was sympathy for the French because of their defeat in 1870, so that their abortive attempt to place a royal family in Mexico during the Civil War was overlooked. A new friendship for Germany was growing, as more and more American scholars were attracted to its universities. America was still dependent upon European capital for development of the West, but a surprising growth in national wealth was building an independent financial system. The upward surge of American industries and Western agriculture was a promise for future strength and self-reliance.

The Field family had grown up. Of the four attractive daughters, three married. The oldest, Mary, married a broker named Lindley, who joined with the older son, Edward Morse Field, to form a brokerage firm that possessed enviable connections with important capitalists. The third daughter, Isabella, married into the well-known Judson family; she edited Cyrus Field's letters and autobiographical notes

after his death. The other son, Cyrus William Field, also married but developed lung trouble.

A number of grandchildren were born, so that Cyrus Field, with his white beard, became something of a patriarch. The family loved to gather on the extensive estate at Ardsley, where many guests were entertained. The original twenty-one acres had been expanded into several hundred. Commuting to the city was a matter of only half an hour's train ride, and the neighboring towns of Irvington and Dobb's Ferry were becoming busy centers.

In 1882, Field bought a large tract of land in the valley of the Saw Mill river, adjoining his estate at Ardsley. His plan was to build a number of model cottages for working-men, the rent to be ten to twenty dollars a month. Some of his friends in England had made similar use of their estates. However, the building of a city aqueduct for water supply upset his plans, and five years later he suffered heavy financial losses. He liked country life and hired a number of workers to care for his extensive grounds, where he raised chickens, as he had dreamed of doing during bleak nights on the north Atlantic. His workers received very considerate treatment. Unfortunately he was not able to carry out all his plans for them.

The Northern Pacific railroad had recently been completed to the Pacific coast, and traveling to the West was now becoming more enjoyable. Field, as a power in the railroad world, received special privileges on such trips. Late in the summer of 1884, he left in a private car with several members of the family for a trip to the coast. They were away six weeks and covered over eleven thousand miles; this was the Victorian equivalent of automobile touring.

After seeing Portland and Tacoma, they explored Puget Sound on a small steamer and saw there the forest from which the tall masts of the *Great Eastern* had been cut for transport to England around Cape Horn. Crossing into Canada, they

met Donald Smith and his party, to whose special train the Fields' car was attached. Smith (later Sir Donald, then Lord Strathcona) was a director of the Canadian Pacific railway, then building; in 1885 he drove the last spike at the completion ceremony. He now showed his authority by naming a peak in the Rockies "Mount Field," as a compliment to his guest. A little station where the train happened to stop was also called "Field"; this settlement, which is not far from Banff, still exists. The party crossed the mountains and stopped at Winnipeg, which was becoming important in the opening of the Canadian West.

Field was usually a cynosure of interest when he traveled thus among Americans or British who knew the story of the Atlantic cable. Especially when he used the telegraph—as he did frequently—he was served with alacrity by the operators, who respected two names in particular, Morse and Field. His daughter, Isabella, reported that telegraphers used to ask, "Are you the original Cyrus?"

Before the presidential election, he was back home to vote. The Republican candidate was the vaunted James G. Blaine, who as Secretary of State had welcomed Field from his trip around the world. The Democratic candidate was the Governor of New York who had opposed Field's five-cent fare on the elevated railways. After a campaign of high-power oratory and much mud-slinging, the "plumed knight" was defeated by the stern-faced Cleveland. For the first time since the Civil War, the Democrats had elected a president. Among the disappointed candidates was Stephen Field of the United States Supreme Court, who had also been a candidate in 1880.

The sad condition of a former president of the United States now engaged Field's ready sympathy. His old friend, Ulysses S. Grant, was in trouble. After eight years in the White House and a trip around the world, this former worker in the leather trade had re-entered business, this time as a New York broker. Unfortunately a great soldier is not generally

a good business-man or a skillful politician. Grant picked a dishonest partner and was doomed to fail. The people of the nation adjusted their views to the idea of a former inmate of the White House working as a financier to win a competence for old age. Suddenly, with the swiftness that Wall Street knows so well, Grant found his resources swept away, and he was reduced to selling his swords and medals to raise cash. A painful disease incapacitated him, and the hero of a great war found that former glory helps little when bad luck befalls. Handicapped though he was, he began to write his memoirs in order to produce an income for his widow after he was gone.

Field was much distressed at the news of Grant's condition. He started a subscription to raise funds for the family of the ex-president, as he had done for the family of Garfield. When Grant heard of this, his characteristic modesty induced him to request Field not to continue the kind action. He wrote Field as follows:

New York City, January 6, 1885.

My dear Sir,—Through the press and otherwise I learn that you, with a few other friends of mine, are engaged in raising a subscription for my benefit. I appreciate both the motive and the friendship which have dictated this course on your part, but, on mature reflection, I regard it as due to myself and family to decline this proffered generosity.

I regret that I did not make this known earlier.

Very truly yours,
U. S. Grant.

Cyrus W. Field, Esq.

There was nothing, of course, for Field to do under these circumstances except to accede to the request and ask his associates to do likewise. He replied as follows:

6th January, 1885.

My dear General Grant,—I have this moment received your letter of this date, and I shall, as requested in the letter from your son, send a copy immediately to Messrs. A. J. Drexel and George

W. Childs, of Philadelphia; to General W. T. Sherman, St. Louis, and Mr. E. F. Beale, of Washington.

I have for several days been very anxious to call and see you, but have been prevented by press of business and a severe cold.

With great respect, I remain,

Dear General Grant,
Very truly your friend,
Cyrus W. Field.

Six months later Grant died of cancer, at the age of sixty-three. After his troubles were over, a large sum of money was subscribed to build a grandiose tomb for him in one of the most conspicuous spots in New York City. It is a favorite calling-place for sight-seeing busses and tourists. The effect inside is like the interior of an Egyptian pyramid.

During the summer of 1885 Field was again in England. On July 4 in London he gave a dinner for thirty friends, of whom eight were Americans. Excellent speeches were made by the Duke of Argyll and John Bright, both venerable figures. The Duke said that the best friends of his life had been Americans—Charles Sumner the statesman, Longfellow the poet, Prescott and Motley the historians, and Cyrus Field. As to the late unfriendliness over the *Alabama* claims, so completely had America proved its rights that it was difficult to find an Englishman who would admit that he ever thought differently. The Duke, who was himself a statesman and author, had a ripe old age ahead of him.

John Bright, unfortunately, was to die a few years later. In his speech, he recalled the days of the Civil War, when, in the absence of a cable, he used to spend the week in anxiety over the news which the Saturday steamer would bring from America—news two weeks old. On several occasions during the war, for example after the battle of Bull Run, he thought, as did many other Englishmen, that the South would win. The ultimate victory of freedom over slavery filled his life with happiness. As always, Bright's fine voice and sincerity thrilled his listeners.

Field was still in England when Grant died. He helped to arrange a memorial service for the ex-president in Westminster Abbey, at which Dean F. W. Farrar spoke. A large crowd attended, including representatives of the Queen and the Government.

His friends were growing old. Upon his return home, he joined with his brothers, David, Stephen, and Henry in sending a telegram to George Bancroft, the historian, upon the occasion of his eighty-fifth birthday. Bancroft had been a fellow passenger with Cyrus Field and Mrs. Field in returning from Europe in 1849. He was destined to live until over ninety. On this occasion, he telegraphed back: "When I am gone, keep the departed traveler kindly in memory."

In the summer of 1886, Field was again in London, renewing old friendships and dining out. He was present, for example, at a special dinner in the Liberal Club. One of the speakers, who had been on the *Great Eastern* during the cable-laying, recalled that, even when Field's fortune hung in the balance of a coil of cable, his poise and courage never failed him. There was more to this remark than appeared at the time. Within a year, Field's fortune was to hang in the balance, not of a metal cable slipping to ocean depths, but of a flimsy tape from a ticker recording the depths of a fallen stock.

In late August, as he had done two years before, he took a western trip, partly in Canada. He helped to set the fashion for Americans to use the newly-built railroads to visit the coast and the Canadian Rockies. These long-distance trains were becoming more and more comfortable, as George Pullman learned to design better sleeping-cars and dining-cars.

During that autumn, his long fight for a uniform fare of five cents at all hours was won for the passengers on the New York elevated lines. This lower rate had the effect of changing the types of passengers carried. When ten cents was charged—a relatively large proportion of a worker's wages—the affluent classes patronized the lines. At that time, the cars

were new and a ride in the air was a novelty. After the lower rate went into effect, rougher types and larger crowds were attracted, so that riding on the elevated became less fashionable. Stately gentlemen in somber coats and veiled ladies in kid gloves were elbowed aside by the Caseys of "Thoity-Thoid" street and the Goldbergs of Harlem. Many influential persons believed the change to be a mistake; some of these were owners of stock in the company. Field was criticized in the offices of powerful financiers and in well-to-do homes.

When Field took over the organization of the elevated-railway system in 1877, he aimed to benefit the public and to promote the orderly growth of the city. He succeeded in this plan, and gave the city a fast and economical traction system that bridged the critical quarter-century between the slow surface-car and the subway of the twentieth century. It is true that the elevated railway was something of a nuisance in the streets on which it ran, and that the puffing little engines dropping live coals and belching smoke were unlovely objects. But drastic methods had been necessary to solve a difficult problem. A great metropolis was in process of growth.

Electrical transportation had not then been devised for practical operations, and the underground railway was still in the future. Field used the best methods that were available, revived a financial failure, and systematized a badly-managed utility. He introduced sound economics, personal honesty, and a sense of responsibility into the workings of a public-service corporation closely linked by necessity with corrupt politicians and predatory financiers. It was his old-fashioned integrity and direct frankness that enabled him to carry out his plans in the face of opposition and abuse. People had faith in him and recognized his unselfishness.

At times the public's trust in him was shaken, as when "watered" stock was injected into the company's finances, but it was realized that he had to compromise with other influences among the stockholders. Evil rumors were circulated

at times about the company's future, as about all public-service corporations, and the stock quotations were artificially maneuvered, but Field did all that he could to prevent this. He conceived it to be his duty to support the stock in the market, as he wished to keep it a high-grade investment security, rather than let it become a Wall Street football subject to every whisper or plot.

A man so honest-minded and open-handed as Field, associating with experienced manipulators in finance, was destined eventually to lose out. His prestige and large fortune sustained him for ten years of elevated-railway history. Then he succumbed to the tape of a Wall Street ticker; the conqueror of the ocean depths was swamped by a deluge of stock certificates; the optimist who had sold cable stock to hesitant capitalists was himself sold out by pessimists and skeptics.

Field's diary of May 16, 1877, contained this item: "Bought this day a controlling interest in the New York Elevated Railroad Company and was elected president of the company." Slightly over ten years later, on June 24, 1887, he lost in a few hours, by a transaction in elevated-railway stock, the fortune that had required years to build. This day's operations were called in Wall Street the "Manhattan squeeze."

Much discussion has taken place as to just what happened on that fateful day and what went on behind the scenes. Different versions have appeared. Field made no recriminations, as he had against Tilden eight years before when he lost a million to the wily politician. His losses now were much larger, probably five million dollars, but he stood the disaster as he had stood similar ones on the high seas when a precious cable slipped away into the ocean depths.

It is possible to state the general happenings of that summer day; it may never be possible to determine the plans and motives that actuated them. In some respects what took place was similar to what had taken place on previous occasions—but to a more extreme degree. Field tried to sustain the drop-

ping prices of elevated-railway stock. The drop became more and more drastic. He flung his fortune into the gap, but it proved insufficient. More stock was being sold than he was able to buy. He lost out.

The Manhattan Company had been doing well for several years and was a profitable investment. It attracted small capitalists who trusted the management and who believed that an even brighter future was ahead. The stock was quoted above its par value of a hundred dollars a share. Since the reduction of the fare to five cents in the previous autumn, the crowds using its service had increased tremendously.

Field believed that higher prices for the stock were justified and could be brought about. He gained the impression that two well-known financiers, Jay Gould and Russell Sage, agreed with him and would cooperate in a movement to build the price higher, as they were large holders of Manhattan stock. Gould afterward said that he warned Field against the venture. At that time, Gould and Sage were two of the greatest powers in Wall Street. Field considered them his friends and supporters.

Field had been a large holder of elevated-railway stock since he acquired his original holding in New York Elevated Railroad at a low price because of the discouraging conditions. His constructive work in reorganizing and improving the elevated lines had greatly increased the value of his investment. There had been additional stock issued and other complications, including a merger, by which an operating company, the Manhattan, had combined the original Third and Ninth Avenue lines with the Second and Sixth Avenue lines of another company.

Encouraged by what he believed was promise of support from Gould and Sage, Field now began adding other thousands, bought in the open market, to the thousands of shares of Manhattan stock that he already owned. The price quoted on the Exchange strengthened and began to rise. Apparently

other optimistic investors were also buying. At previous times, Field had thus sponsored the stock to instill confidence in the stockholders. He resolved to buy boldly and thus give a strong impetus to the improving prices.

But after a further slight rise, the quotations appeared to hesitate, and then to recede. Apparently other stockholders were not so enthusiastic as Field and were selling their shares in expectation of lower prices. It is common practice, of course, to make a profit by selling in anticipation of a drop and then buying at lower prices. Some professional operators make a practice of thus driving stocks down by heavy sales and disquieting rumors; they become highly skilled in capitalizing pessimism and playing on men's fears. Gould and Sage were experienced operators.

By innate character, Field had always been an optimist. His success in life had been based on constructive work in building things up. This trait is typically American and was especially natural in an era of expanding industry and national development. His direct and honest nature did not make allowance for the forces of destruction and guile.

As the quotations on Manhattan fell lower and lower, he resolved to utilize his resources to the utmost to stop the decline and buoy the stock up. It seemed, however, that, despite the thousands of shares which he was buying, more thousands were being thrown on the market. Other operators were selling greater amounts than he could buy. Things began to look ominous for him; his personal fortune, large though it had been, was limited. His holdings in other securities, such as Western Union and Missouri Pacific, were also dropping in value, as though in sympathy with Manhattan. These three were "Gould stocks" in the language of Wall Street. Were Gould and Sage selling from their large holdings?

Having lost so much, Field dreaded to admit defeat and to stop his loss while quotations were depressed. A good rally

might restore all that the decline had wiped out. At previous crises in his career, he had stuck by his convictions and won out in the end. His conquest of the ocean depths had been attained only after the most calamitous defeats.

Rallying all his resources, he attempted to bolster the market for Elevated shares. But there seemed to be no end to the flood of stock being offered for sale at constantly lower prices. Soon he was in desperate straits, as his available funds dwindled. The seeming impossible had happened.

Driven to the extremes of asking for a loan, he went to his collaborator in the Elevated financing, Jay Gould, who was known to have enormous resources. The veteran financier agreed to lend him a large sum. Field was grateful and hurried to use this in buying more Manhattan stock. It was insufficient to stop the debacle; there seemed to be no bottom to the drop in values. If Gould was selling as Field bought, the latter did not seem to suspect it.

To cover his huge losses, Field had to have more funds. His most available asset was the many thousands of shares that he had just bought so prodigally. But their market price was still dropping. Returning to Gould, he had to offer his large accumulation of Manhattan stock at a price far below what he had paid. Gould agreed to accept the offer, thus acquiring at a price near par millions of dollars worth of shares that were worth nearly twice that valuation—a profitable day's work.

The certificates were transferred from Field's strong-box to Gould's. Field paid off his obligations. He had lost in one day about five million dollars—the fortune built up in telegraph and railroad promotions by years of honest work.

Aside from his real estate, there was not much left to him. The homes at Gramercy Park and Ardsley Park were, fortunately, in his wife's name; his equity in the office building at the foot of Broadway was involved in encumbrances. He sold his newspaper *The Mail and Express* at a disappointing

figure; it had not been a success. At sixty-eight, he was financially back where he had been at thirty.

Much sympathy was expressed for him, with indignation at the other stockholders of the Elevated company who had failed to help him support the stock. The "Manhattan squeeze" passed into financial history. It had been a terrible day for Cyrus Field. There is something of a commentary on the American financial system in this story of a well-meaning and honest man who starts the day with a fortune of several million dollars and finds himself a few hours later almost ruined, with all that such a loss implies in consequences for his family and his old age.

Chapter Nineteen

THE WORLD MOVES ON

AFTER THIS TRAGIC blow to his old age, Field presented a brave face to the world. He hesitated to curtail his family's comforts, and they continued to live much as before. They had come to rely upon him as an unfailing resource. It is difficult to curtail a large family's standard of living, especially when the members are well known in social circles.

The era was one of increasing luxuries and expansion. Leading citizens were expected to encourage advances in America's fads and fashions. The brownstone fronts of New York's proud élite required a more and more pretentious outlay of style. Automobiles had not yet appeared, but resplendent carriages and spanking teams of horses flashed along the avenues. The buildings were getting higher; the success of the Eiffel tower in Paris was encouraging the construction of "skyscrapers" supported by a steel skeleton. The pioneer epoch was drawing to a close; the nation had entered a stage in which the inventions and ground-work of the previous generation were taken for granted.

Field had been a pioneer—one of the earnest band of early Americans who dreamed visions and worked earnestly to attain them. What they conceived that the country needed was improved means of communication and transportation, a prompter and more reliable linking together of isolated and straggling communities. Now that this aim was largely fulfilled, a more intense exploitation of the continent's resources was under way. Sharp exploiters were coming to the front—men who understood how to grab, how to evade the law, and how to destroy. The age of innocence in America's development was over; a gilded performance was now being staged.

A notable figure in the city's drama, Field at seventy was still active and energetic, though quieter than before. An observant writer in the *New York Sun* described him as follows: "In his last years, Mr. Field was a quaint and familiar figure downtown. Tall, slightly bent, with his white, full beard, and his hair bushy behind his temples, he appeared in the street, summer and winter, in a long black coat, peering keenly from under his heavy eyebrows at all who approached him. His face was alert, vigorous, and searching, yet with young men he was curiously amiable, patting them on the back, volunteering service in a fatherly tone, and keeping closely his own counsel in a decided yet unoffending manner."

His old friends were dropping off, one by one. Peter Cooper had died in 1883 at well over ninety years of age. His neighbor Samuel J. Tilden died three years later. In England, John Bright died in 1889. The robust Gladstone, though ten years Field's senior, was still active and reappearing intermittently as Prime Minister.

A few weeks before Bright's death, Field cabled him a cheering message. It concluded as follows: "It may comfort you in your long illness to know that your name is on the lips and in the hearts of millions on this side of the Atlantic, who can never forget how you stood by the cause of our country." Field had ceased his frequent trips abroad and now spent more time with his gardens and chickens.

Around Ardsley, where he still maintained an extensive estate, he was called "Uncle Cyrus." The neighbors had not always liked his progressive suggestions, which tended to disturb the customary calm. But they recognized the essential kindness and benevolence of the aging promoter. The employees on his estate spoke gratefully of his generosity and concern for their comfort.

His friends and family found an opportunity to express their respect on December 2, 1890, in a celebration of fifty years of happy married life since a young New York business-

man had taken a Connecticut bride to the metropolis. There had been seven children and sixteen grandchildren. Numerous friends called on that day to wish happiness to the frail old couple.

From England, Sir James Anderson sent a long letter of congratulations and good wishes, signed by eighty-four names, many of them of prominent persons. Among these were men who had been connected with the cable work, such as Samuel Canning, William Thomson, Willoughby Smith, Latimer Clark, W. H. Russell, Robert Dudley, and H. D. Gooch. Other interesting names were the Duke of Argyll, W. E. Gladstone, Catherine Gladstone, H. M. Stanley of Alderly, Oscar Wilde, Constance Wilde, W. S. Cunard, and Jane Cobden.

Sir James wrote in conclusion: "The days and years are rolling away, and we may well cling to the memory of exciting and happy days when we were twenty-five to thirty years younger and the future filled with nervous anxieties." He himself was sixty-six; he recalled that it had been twenty-five years since the first cable-laying in the *Great Eastern* and fifty years since he went to sea as a sailor boy.

At the golden-wedding celebration, it was evident that both Cyrus Field and his wife were in delicate health. During the following summer of 1891 the other members of the family watched them with grave solicitude. Medical advisers reported that any sudden excitement might be fatal.

Late in August, on the birthday of Mrs. Field, the family dined together for the last time. David Dudley Field, although much older than his brother, was able to be present with words of cheer and good wishes. The two were as friendly as ever. Cyrus was frankly affectionate; David retained a genuine fondness for his younger brother.

In these last months of his life, when Cyrus Field deserved happiness and quiet, a dreadful series of blows befell him.

On November 23, 1891, his wife died. His affectionate nature was deeply shocked at this snapping of a long thread. Theirs had been an unusually happy partnership, despite many anxieties over debts and cables. She had encouraged him during dark days and always believed in his success. The Reverend Arthur Brooks wrote a moving appreciation of her kindness and tact in an article for the periodical, *The Churchman*.

Scarcely had his wife been buried, when Cyrus Field learned of the failure of his elder son's brokerage firm operating as Field, Lindley, Wiechers & Company. This was Edward Morse Field, who had taken up grain brokerage; he had formed a partnership with Daniel Lindley, the husband of Mary Field, oldest daughter of Cyrus. When first formed, the firm had succeeded brilliantly, because of its social connections with prominent New Yorkers. Then rumors were heard of wild speculations by Edward Field, and heavy losses. They were all too true.

Cyrus Field had helped his son's business ventures in a trusting spirit. When Edward came to him and confessed that the firm's condition was shaky, the generous old man assumed that the trouble was merely temporary. Always optimistic and open-handed, he turned over to his son practically all of his own securities, believing that the loan of them would tide over the dangerous crisis. It was vain to attempt to stem the flood of obligations and questionable dealings that swept over the firm. Bankruptcy was inevitable.

Investigation of Edward Field's affairs showed such grave irregularities that he was arrested. His mental condition became alarming, and he was confined in an asylum. For the rest of his life he was judged insane and incompetent.

During these sad revelations, Cyrus Field's oldest daughter, Mrs. Lindley was seriously ill, and before Edward Morse's trial came up in court that winter, she died. The trial was

for forgery, and the well-known lawyer Bourke Cockran did all that he could for the defendant. It was useless.

Cyrus Field collapsed under these terrible shocks. On his seventy-second birthday, at the end of November, he found that of the large fortune he had invested in telegraphs and railroads, only a thousand pounds in Anglo-American cable stock remained. He felt unable further to assist his family, for which he had always cherished a deep affection. His daughter Alice, who had never married, was also ill and mentally unbalanced.

So depleted were the family's resources, according to his daughter Isabella, that in the spring he would not have been able to go to the country home at Ardsley if his friend Pierpont Morgan had not advanced the necessary funds. Morgan, who was often accused of ruthlessness in business, did many a generous deed that was never advertised. It was he also who paid the premiums on Field's life insurance, one policy of which had been taken out nearly fifty years before.

The change to the country air did not benefit the aging man, as his family had hoped. His weakness and nervousness increased. The accumulation of calamities had proved too much for a constitution that had never been strong and had been sustained chiefly by enthusiasm.

Early on July 12, 1892, the family were called to the bedside, including the brothers David, Stephen, and Henry. The end came that morning. Cyrus Field's long struggle was over.

An account of his last illness was published in the *New York Tribune*, which said: "He was delirious and suffered from several attacks of acute nervousness, and on those occasions he again went through the trials and struggles of the days when he was working night and day at that stupendous undertaking which has made him famous. At one minute he would imagine that he was at a port on the Newfoundland coast superintending the departure of ships with the cable to the Irish coast. In his delirium he would cry out, 'Hold those

ships! Don't let them sail yet. I must make further experiments.' "

His mind wandered to the great crises of his active and adventurous life, when he sailed the North Atlantic, paying out cable through fogs and storms. At times he talked of old friends and associates, and imagined that the figures around his bed were those of Morse, Gladstone, and others prominent in his early career. Toward the end he was quieter and, although he was not able to speak, his eyes followed with affection those who had gathered there. He was buried at Stockbridge near his wife and parents.

The New York newspapers devoted much space to his obituary. Although the advantages of ocean cables for news service had long been taken for granted, and a new generation of editors had come on the scene, it was still realized that Field had been the pioneer of such advancement. The *New York Herald* gave over a page to his death and biography.

As an indication of the period in which Field died, the newspapers announcing his death printed a vast variety of news. They were totally unlike the newspapers of his youth. The city of St. John's, Newfoundland, for example, was reported half destroyed by a disastrous fire. In England, the aged but robust Gladstone—ten years Field's senior—had just been re-elected to Parliament; he was to be Prime Minister for several years more. In America, the bitterly-fought Homestead strike of steel-workers raged in Pennsylvania. At Washington, a bill for the free coinage of silver had been defeated in Congress. There was an item in the paper about litigation over Edison's incandescent-light filament. In New York, electric storage-batteries were replacing horses on the Second Avenue street-cars, and improvements were being made on Broadway's cable-railway. In the city's slums, babies were dying from a heat wave.

After Field's death, many eloquent testimonials were paid to his memory. The troubles of his later years were still fresh

in the public memory, and much sincere sympathy was felt for him. Previous to those misfortunes, the public had thought of him as a wealthy and socially-prominent New Yorker who had achieved an enviable fame. Only the older generation really remembered his cable triumph, although the younger elements had read articles and poems about it.

His special appeal to the public imagination lay in his exemplification of typical American characteristics of energy, initiative, hard work, and perseverance. A large circle of associates, both in business and private life, recalled his liberality and charity; these memories, which were not published, illustrated a very real aspect of his character. Field had been a generous and frank personality. He had taken dangerous chances and had attained a brilliant success, although bad luck overtook him at the end.

Some persons who disliked him and had been jealous of his victories were pleased at his failures. The usual crowd of wiseacres, who habitually oppose exceptional individuals and trim their sails to mediocrity, shook their heads sagely at "what they had always expected." They were a similar crowd to the ones who had laughed in the eighteen-fifties at the idea of sending electrical impulses under the ocean, and who had "foreseen" the early failures in cables.

At various times, Field had been criticized for appearing brusque in business deals and dictatorial in his methods. Such characteristics were probably the consequence of his impatient desire to get things done and his remembrance of occasions when the business world had treated him harshly and brutally. The actual records show deeds that prove an honest nature and a kind heart.

If courage and generosity are the two greatest traits that a man can possess, Field ranked high as a personality, regardless of his successes and failures. His success in laying cables was partly the consequence of favorable factors of nature, such as

electrical laws and oceanic conditions. Chance influences most careers. His failures in business were due to personal characteristics not at all discreditable to him. Taken all in all, he was a fine type of American citizen—a pioneer, a public benefactor, and a brave man.

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