I. The Great Survey

In 1794, Joseph Ellicott, a rugged six-foot-three surveyor, accepted employment with a combine of six Dutch banking houses. His task was to mark out some of the 1.5 million acres of land in northwestern Pennsylvania recently purchased by the wealthy Dutch financiers. To Ellicott, with ten years of experience measuring land on the frontier, the assignment seemed routine. However, what emerged was a close association with the Holland Land Company that, except for the year 1796, would continue without interruption until 1821. Begun in the Philadelphia office of the Dutch proprietors, this relationship would bring wealth, power, and fame to Joseph Ellicott. It would also have far-reaching effects on the history of western New York.

Prior to 1794, the Ellicotts had been typical of many families that left Europe and ventured to America. Joseph's ancestors were farmers, artisans, and millers, his generation being the first to become surveyors. Great-grandfather Andrew had come from Devonshire, England, where he had lived with his wife, belonged to the Society of Friends, and manufactured woolen goods. Why he left England is unclear, but one possible explanation was the business reverses he had suffered. Whatever the rationale, he left his wife in 1730 or 1731 and came to America with Andrew, the eldest son. Instead of a brief visit as planned, Andrew and his son settled down in Bucks County, Pennsylvania, bought fifty acres of land within five miles of Boylestown, and built a little log house. He never returned to his wife or the other two children.

Grandfather Andrew promptly fell in love and married Ann Bye in 1731. His grandmother, Joseph learned, was the daughter of a landed proprietor, a devout member of the Society of Friends, and a talented woman of considerable medical skill. She and his grandfather had five sons before Andrew died of pleurisy in 1741. Samuel Armitage, a neighbor appointed guardian of the fatherless five children, apprenticed one—Joseph's father—to a weaver, another to a carpenter, and a third to a blacksmith. The remaining two were too young to leave home.

Joseph's father, known simply as Jo, showed an exceptional apti-
tude for mechanics. His guardian had early recognized that Jo was “a smart, active boy, and a good weaver, but his mind ran wholly on the study of mechanics.” Jo left weaving, worked for Samuel Bleaker repairing gristmills, and married Judith Bleaker, his employer’s daughter. The young couple was so poor that they were forced to live with Jo’s mother. Determined not to return to weaving, Jo persuaded his brothers and Samuel Armitage to build their own mill. Jo was the superintendent, the brothers all helped, and Armitage was the financier. The mill was built, and their business started to prosper.

Jo and Judith Ellicott had nine children, four boys and five girls. Joseph was born in Bucks County, Pennsylvania, on November 1, 1760. Andrew and David were older than Joseph, while Benjamin was five years younger. Sarah was the eldest sister, Letitia was two years younger than Joseph, Rachel was a twin to Benjamin, and Mary was the youngest.

Joseph was six years old when something happened that deeply affected the Ellicotts. His father, Jo, inherited a valuable property in England. Jo’s father and grandfather had died; as next of kin surviving, he received his great-grandfather’s estate. In 1767, Jo sailed to England, claimed the estate, and sold it for fifteen hundred pounds sterling, a considerable sum for those days. While in England, he indulged himself buying clocks, watches, and tools. When the now affluent Jo returned to Bucks County, people began to address him as Joseph Sr. He became the high sheriff of Bucks County and a member of the provincial assembly.

Jo devoted much of his new-found leisure to his hobby, the making of clocks. Of the many unusual timepieces his father built, young Joseph remembered one in particular. It was an ingenious astronomical and musical clock that Jo, with the aid of his fifteen-year-old son Andrew, completed in 1769. Standing eight feet high, the clock had four faces. One showed the planets moving accurately in their orbits. The second face indicated the time in seconds, minutes, hours, days, months, and years; it revealed the changes in the position of the moon. The third side had twenty-four tunes, dating back before the American Revolution. A small cylinder played a song every hour, and from the larger cylinder came a melody every three hours. By moving the pointer to a particular place, the clock played the selected tune. Among the songs heard were “Balance a Straw,” “Plague on Those Girls,” “Give Me Sweet Kisses,” “The Lass with the Delicate Air,” “The Pilgrim,” and “God Save the King.” At the fourth face was a window through which could be seen the complex mechanism. Judith Ellicott eventually gave the musical clock to her son, Joseph.
The industrious Ellicotts wanted more out of life than clockmaking. They were ambitious, venturesome, and unafraid to move. The higher standard of living made possible by Jo's inheritance whetted their appetites for greater material gain. Moreover, Jo's inheritance was a tidy stake for a larger enterprise.

Aware of the limited milling opportunities in Bucks County, Jo and his four brothers searched for a more attractive site. The five brothers, bound together by the early death of their father, remained close. Partners in the gristmill in Bucks County, they continued to operate as one unit. Jo and two of his brothers toured Maryland on horseback until they located what they wanted. It was a small meadow nestled among the roadless forests on the Patapsco River some ten miles from Baltimore. Not a stalk of wheat was being raised within miles of that location. Tobacco was the main crop, for the planters did not believe it feasible to grow wheat. Convinced otherwise, the Ellicott brothers, in 1772, bought 770 acres in two extensive tracts on the Patapsco River. That year, they began to erect a building.

Two years later, with the gristmill completed, the Ellicott clan moved to Maryland. The caravan included Jo, his wife Judith, their nine children, and Jo's two brothers. Remembering the hardships of his early life, Jo also brought along the six orphaned children of his deceased friend and former neighbor, William Evans. Jo's children and the Evans orphans got along well together, and eventually four of the children of each family intermarried. Three of the Evans boys married three of Jo's daughters, while Martha Evans became the wife of David, son of Jo.

Joseph, now fourteen, remembered the long and arduous trip in December, 1774, to their new home. Leaving Bucks County in wagons and carts, the caravan traveled to Philadelphia where they shipped down the Delaware River to Newcastle. There, they loaded their wagons, moved across the Peninsula, then took a boat down the Chesapeake Bay and up the Patapsco River. Reloading, they drove the carts and wagons the remaining mile to their final destination.

The Ellicotts literally carved a home out of the wilderness. The valley had been covered with huge trees which had grown untouched for centuries. The trees were of a large variety, with all sorts of oaks, hickory, maple, gum, ash, and chestnut. On the level ground were many kinds of shrubs that included dogwood, elder, spice wood, and red bud. Rabbits, squirrels, raccoon, pheasants, and partridges were in abundance. Less friendly were the wild cats who ventured out at night and destroyed pigs and poultry.

In their new location, the Ellicotts thrived. Tobacco growers,
whose soil was wearing out, tried raising wheat and were successful. In 1774, the Ellicotts had their first customer who bought one hundred barrels of flour. Ellicott and Co., the name used by the brothers, became the greatest manufacturers of flour for export in that section of Maryland. Near the mill, Jo opened a general store, selling groceries, dry goods, and even satin and silks.

Joseph never forgot the lovely home his father built on the bluff overlooking the Patapsco. Located near the mills and the store, it was a mansion. The garden had rare plants and lovely shrubs, and in the center was a fountain that sent water streams some ten feet high. The inside of the house revealed the Quaker tastes of the occupants. The home was kept scrupulously neat and clean, the furniture designed for comfort rather than display. It was a happy home where the laughter was easy, and the family reunions numerous.

Jo's four sons had inherited the family talent for mathematics and science. None of the boys, however, became millers or clockmakers. Andrew, the eldest, lived an active public life. After a limited education, he returned to Bucks County in 1775 to marry Sara Brown, the daughter of a prominent Quaker. With the American Revolution entering a decisive phase in 1778, Andrew accepted a commission of captain, later major, in the Maryland militia. Military service violated the principles of the Society of Friends, but Major Ellicott insisted that the Quaker stand on defensive war was wrong. Whether he received a "minute of disownment" and his membership dropped from the Society of Friends for this transgression is not fully documented. In 1781, when the fighting ceased, the Major published an almanac that included among many items a recipe for pickling hams, a brief sermon on the text of the Book of Job, a list of justices of the New Jersey Supreme Court, and an editorial in support of the Patriots.

Fascinated by mathematics, Andrew chose surveying as a career. Physically suited for the work, he stood over six feet tall and had a strong constitution. Despite a scanty formal preparation, he developed into an exceptionally able surveyor. The Major became known, too, as a competent scientist and a talented mathematician. It was as a surveyor, however, that he gained a national reputation and strongly shaped the vocational choice of his three younger brothers.

Andrew's career as a surveyor spanned more than a quarter of a century. He started in 1784 as a part of a group that extended the Mason and Dixon Line. The next year, he served on a commission that marked out the boundary of western and northern Pennsylvania, moved his family from the Patapsco River to nearby Baltimore, and
taught mathematics at an academy in Baltimore. Andrew also found
time to tutor his brothers Joseph, Benjamin, and David in the art of
surveying. The Major had diverse interests. In 1786, for example, he
was elected to represent Baltimore in the state legislature. That year,
Andrew was further honored by being elected to the American Philo­sophical Society, for which he wrote a number of scientific papers.

Other commissions to survey land followed. In 1789, President
Washington appointed Major Ellicott to fix the southwestern boundary
of New York and thus settle the disputed ownership of Erie. Joseph
and Benjamin helped Andrew with this survey, which established the
Major's reputation. While he was in the area, Andrew made the "first
actual measurements of the entire length of the [Niagara] river and
of the falls and rapids from Lake Erie to Lake Ontario." His measure­ments of the river have since been accepted as correct. Shortly after,
President Washington selected Andrew to lay out the federal capital
which Major L'Enfant had designed. Andrew started work in 1791,
brought in Joseph and Benjamin as assistants, and the three brothers
did the bulk of the surveying. In 1794, Andrew helped to lay out an­other city, that of Erie in the northwestern corner of Pennsylvania.

Two years later came his greatest challenge. President Washington,
for the third time, chose Andrew to do some surveying; he was to
identify the frontier between the United States and the Spanish-owned
lands to the south. His report was published as The Journal of Andrew
Ellicott, a fascinating story that became one of America's classics. Re­turning to teaching in 1813, Major Ellicott went to West Point as a
professor of mathematics, and there spent his remaining days.

David, Jo's second son who was two years younger than Andrew,
lived a troubled life. He had married Martha Evans in 1777, and their
four children all died in infancy. Martha was plagued by continued
poor health that prevented her from performing her regular house­work, yet was not sufficiently serious to keep her in bed. David also
had financial difficulties. Unable to cope with all of his problems,
David disappeared in 1787, not having informed anyone previously.

Seven years later, in 1794, Benjamin located David. By now Martha
was dead, so David joined Joseph and Benjamin in surveying lands
owned by the Holland Land Company. David continued to work for
the Company until 1806. The following year, he went to Philadelphia
with Joseph and settled his accounts with the Company. David then
traveled to Maryland, where he paid off several debts, and mysteri­ously vanished. His disappearance in 1807 was a bitter blow to the
closely knit brothers. David had always been mild mannered, sweet
tempered, and agreeable. Joseph tried to locate him by contacting most of the post offices of the United States, but without success. Nothing was ever again heard from David Ellicott.

Joseph was Jo's third son, and his early years had been similar to those of his older brother Andrew. His formal education had been limited to the common school of a rural community. His skill in mathematics had also developed in the scientific climate of the congenial Ellicott home. And his teaching stint, too, had been short and in a Baltimore school.

Following Andrew's leadership, Joseph selected surveying as a profession. Andrew's teaching had been so effective that Joseph adopted his older brother's habits of painstaking and meticulous work. For fifteen years, Joseph surveyed land throughout the United States. In 1785, he assisted Andrew in marking off the western and northern borders of Pennsylvania. Four years later, he and Benjamin helped Andrew to lay out the western limits of New York State. Then, in 1791, Joseph struck out on his own. Timothy Pickering, the secretary of war, appointed him to run the boundary line between the State of Georgia and the land of the Creek Indians. This he did, but while working in Georgia, Joseph became seriously ill with yellow fever and almost lost his life. After he recovered, Joseph returned to the north where he joined Andrew and Benjamin in surveying the nation's capital.

By 1794, Joseph Ellicott had become an expert surveyor and had already revealed certain characteristics that would enhance his position. He had an independent and curious mind that digested his readings as thoroughly as it studied other men. Ellicott was short tempered, somewhat tactless, and strong willed with an inner drive that made him rather dictatorial. An exceptionally hard worker, he demanded the same intense industry from others working with him. Precise in his work habits, practical in outlook, he insisted on orderly operations. Joseph was as concerned with all the details related to surveying as he was with the act of measuring land itself. He kept a businesslike relationship with other men, for his great pride and reserve prevented him from becoming friendly with many people. To his family alone could he unburden his full feelings.

Joseph felt closest to Benjamin, youngest of the four Ellicott brothers. Five years younger than Joseph, Benjamin had been born in Bucks County, Pennsylvania on March 17, 1765. He had inherited his father's mathematical talent and was given an education similar to Joseph's. Impressed with Andrew's tutoring, Benjamin also adopted
surveying as a profession. He was part of the brother team that fixed the boundary of southwestern New York in 1789 and laid out the federal capital in 1791. Benjamin resembled David in his tact, sweet temper, and charm. Physically, he was similar to Joseph, standing better than six feet tall with a sturdy frame. Benjamin and Joseph were both plain in their habits and frugal in their expenditures.

Joseph and Benjamin retained a very close relationship during their entire lives. They had common interests and attitudes. Both enjoyed surveying and were dependable, honest, keen businessmen. They invested their moneys together, although their profits were kept in separate accounts. Never married, the two bachelors lived together and were rarely separated.

The nine children of Jo and Judith Ellicott shared a feeling of togetherness. Although the four brothers and five sisters lived too far apart for frequent meetings, they apparently corresponded with one another regularly. They were genuinely concerned with each one's welfare. The coincidence of the three Ellicott girls marrying three Evans boys helped, also, to maintain this affection. Joseph and Andrew wrote long, detailed, and affectionate letters to each other. Never did Joseph forget that Andrew had given him his first start as a surveyor. During some lean years, when government pay came slowly, Joseph helped with cash. Benjamin and Rachel were twins who strengthened the wonder of their birth by an abiding affection for each other. In many ways, Benjamin and Rachel became Joseph's favorites.

By 1794, Joseph was emerging as head of the family. After his father died in 1780, he kept in close touch with his mother, looking after her needs until she died. Andrew and David were enmeshed in their own family problems. Joseph and Benjamin, however, early showed an ability to earn and save money. As Joseph's position improved, he gradually took over the family leadership. Lacking children of his own, Joseph frequently turned to the families of his brothers and sisters for the intangible comforts of a home atmosphere.

Joseph Ellicott was well prepared in 1794 for that new venture with the six Dutch banking houses. By training and experience, by ability, temperament, and ambition, Joseph had exactly the qualifications needed by the Dutch owners. He was on the threshold of an association that became a long-term relationship, a situation unforeseen even by the canny bankers of Holland.

Dutch investment in the United States had not come about suddenly. A number of Holland's capitalists had profited from loans which they had made during the American Revolution. The French Revo-
lution had accentuated the interest of Dutch investors in the United States, because the wealthy Dutchmen feared the effects of the spread of this upheaval on their holdings in Europe.

There were two firms in Amsterdam that took a particular interest in American affairs. The house of Pieter Stadnitski and Son had been carrying on a thriving business as banker and broker in Amsterdam. The house of Nicolaas and Jacob Van Staphorst had been dealing with America since 1782 when it had taken a leading role in floating the first Dutch loan to the infant republic. As early as 1788, Stadnitski had been speculating in the securities of the American government. Dissatisfied with their experiences of dealing through brokers, Stadnitski and Van Staphorst united in 1789. Joining them that year were two other Dutch houses, P. & C. Van Eeghen and Ten Cate & Vollenhoven. The four Dutch banking houses now sent their own representative to America where he was the purchasing agent and also kept his clients informed about any changes in the financial condition of the United States.

The agent chosen to represent the four houses was Theophile Cazenove. A protégé of Pieter Stadnitski, Cazenove was jovial, personable, worldly, and also able to speak English. Signing his contract on November 30, 1789, he arrived in America early the next year. Cazenove continued to lead the good life to which he had become accustomed. He had a sensitive palate for fine food and for choice drinks. In the Cazenove Journal, 1794, he repeatedly identified the names of taverns, and evaluated the quality of their food and the convenience of their lodging. Cazenove traveled in grand style, riding in a coach and four, with an extra saddle horse, a valet, a coachman, and a postilion. His home on Market Street in Philadelphia became famous for the excellence of the dinners, and in a short time, he became friendly with American leaders in the fields of politics and finance.

Cazenove's employers had given him authority to invest some of their money, so he bought shares in the United States Bank as well as in state bonds. The government finances became so stable, however, that the opportunities for large profits through speculation diminished. Cazenove now put some money into canal building and in the Society for Establishing Useful Manufactures, but both investments failed. By 1791, the mania for land speculation was sweeping the nation, so he investigated the possibilities of investing money in land. While he debated the wisdom of such a move, two Dutch banking firms, W. J. Willink and Rutger Jan Schimmelpenninck, combined with the four houses in 1792.
A limited inquiry had made Cazenove enthusiastic about speculating in wild lands. His fervor was contagious, and the six houses authorized him to make several purchases, all in Pennsylvania and New York. Cazenove favored Pennsylvania because its law permitted aliens to own real estate. In 1792, he bought 1.5 million acres in northwestern Pennsylvania. New York, however, forbade aliens from owning land. Unable to overlook the glowing reports of fertile land at low prices, Cazenove circumvented the law by creating a board of American trustees to hold the land. Through the trustees, he bought, in 1792 and 1793, some 200,000 acres in the central part of New York and 3.3 million acres west of the Genesee River. Between 1792 and 1794, the Dutch bankers purchased over 5 million acres of land in New York and Pennsylvania.

Meanwhile, some members of the six houses were becoming uneasy about the extensive land purchases in America. To preserve harmony, the structure of the union of the six houses was changed into a stock company. This gave each of the six houses a greater flexibility in disposing of its shares. Details for this corporation were worked out in 1795, and, a year later, a company known as the Hollandsche Land Compagnie, more commonly identified as the Holland Land Company, came into existence.

Before any of the lands could be sold, accurate and detailed surveys of the holdings were essential. Theophile Cazenove, now designated as the Agent-General of the Dutch-owned properties, decided to survey the tract in northwestern Pennsylvania first. This took longer than anticipated. Sickness stalled the surveyors in 1793, and the following year, reports of Indian wars limited exploration of the frontier. Anxious to move more swiftly, the Agent-General put Joseph Ellicott in charge of the survey.

Cazenove's choice of Ellicott was a sound one. Joseph was an experienced surveyor who was also familiar with much of the terrain. Ten years earlier, he had helped to locate the boundary of western Pennsylvania. In 1794, he had been employed by Cazenove as one of the surveyors and had impressed the Agent-General with his industry and careful work.

His report to Cazenove of "certain lands in the six Districts" was characteristic of Joseph Ellicott. Running to fifty-eight pages, it was carefully organized, easily legible, thorough, and factual yet with occasional personal comments. Ellicott was a knowledgeable surveyor who readily identified the "White Oak, Ash, Beech, Basswood or Ilyum, Elm, Walnut, Hicory, Mulberry, Crabb Tree, Plumb Tree, &
the Hawthorn." Nor did he miss the potential of the land, noting that "real Vegetative soil in few places exceeds two or three Inches in Depth." Joseph was also certain to remind his employer that the work of the surveyor was physically taxing, pointing out that on Saturday, June 7, "Being weary of travelling over a mountainous hilly & Miry road [we] concluded to lie by this day and wash our linen." Little did Ellicott or the Holland Land Company foresee that his stint in 1794 would be the start of twenty-seven years of employment with the Dutch proprietors.

Appointed chief surveyor in 1795, Joseph Ellicott spent the season of that year tramping through the Company holdings east of the Alleghanies. His brothers Benjamin and David served as assistants. Joseph took detailed and accurate notes of the land and, during the winter of 1795–96, prepared a full account for the Agent-General. The land was of poor quality, reported Ellicott, and this news was a deep disappointment to Cazenove. He had believed that the Pennsylvania holdings were more valuable than those in western New York.

Cazenove had made a blunder in buying the large tract in northwestern Pennsylvania. Most of the land was covered by low mountains, and a great deal of the soil was unsuited for agriculture. To this day, the population of the region remains sparse. Had Cazenove sent an agent to make a confidential report before making the purchase, he would have quickly learned the true value of the land. Even the rather crude maps of that day suggested the character of the land. Why he bought the tract is a puzzle. A possible explanation was the mania for land speculation in 1792 that muddied the judgment of even shrewder businessmen than Cazenove. Whatever the reason, the investment led to heavy losses.

Cazenove now turned his attention to the Holland Land Company holdings in western New York. Here he had a different problem—how to get a clear title to ownership.

Western New York had gone through a long history that included several major changes in land ownership. Long before the six houses bought this tract, the Seneca Indians had lived there. During the American Revolution, however, this member of the Iroquois Confederacy had suffered a crushing defeat in the Clinton-Sullivan campaign and lost its ability to resist the white man's encroachments. When the war ended, the State of New York and the Commonwealth of Massachusetts each insisted that it owned the land in western New York.

Massachusetts traced its claim to the original charter. On November 3, 1620, King James I had granted to the Plymouth Company title
to all the land between the fortieth and the forty-eighth parallel that extended from sea to sea. A portion of this territory was ceded by the Plymouth Company to the Massachusetts colony in 1628 and was confirmed a year later by King Charles I. The charter of 1628 was vacated in 1684, and another one was granted by William and Mary in 1691. This charter included the lands from 42°2’ to 44°15’ that ranged from the Atlantic to the Pacific Ocean. Western New York extended south to the 42° and almost reached the 44° to the north. On this basis, Massachusetts claimed the land in western New York.

New York also cited royal decree as proof of ownership. In 1664, King Charles II had given to his brother James, Duke of York, the Dutch possession of New York, including the present State of New Jersey. The land extended from the west side of the Connecticut River to the east side of the Delaware River. The royal grant was later confirmed by treaty with Holland. The Duke of York thus acquired land which was also claimed by Massachusetts.

The overlapping land claims were resolved in two steps. The first was taken rather easily. The land beyond the present boundary of western New York was ceded to the United States. This was done by New York in 1780 and by Massachusetts five years later.

The second step was more complex. Ownership of the 19,000 square miles east of the present boundary of western New York was hotly disputed. Massachusetts based her claim under the royal charter of 1628, while New York claimed the land by virtue of her protectorate over the Iroquois Six Nations. To settle the controversy, ten representatives from Massachusetts and New York worked out a compromise at a conference at Hartford, Connecticut, in 1786. New York acknowledged the right of the Commonwealth of Massachusetts to preemption of the soil, that is the right of first purchase from the Indians of all the land in western New York except for a mile-wide tract along the Niagara River. Specifically, this area comprised 6 million acres that lay west of a line drawn north from the eighty-second milestone on the Pennsylvania north line and extending through Seneca Lake to Sodus Bay on Lake Ontario. In return, Massachusetts recognized the political sovereignty of the State of New York over this same area.

Two years after this treaty, Massachusetts sold all of its land in New York, east and west of the Genesee, to two land speculators, Oliver Phelps and Nathaniel Gorham. These men agreed to pay $1 million ( £300,000) in three annual installments to Massachusetts for the 6-million-acre territory. Before Phelps and Gorham could sell
any of the land, however, it was necessary for them to terminate the Indian title to the tract. This they achieved in part. In 1788, Phelps persuaded the Senecas to give up 2.5 million acres east of the Genesee, and about 200,000 acres west of that river in return for $5,000 and an annuity of $500. The Senecas clung to most of the land west of the Genesee because they believed that the "Great Spirit" had fixed that river as the boundary between the Indians and the white man. When it came to meeting the payments to Massachusetts, however, Phelps and Gorham managed to scrape up only enough money for the first installment and could not meet the rest of their debt. To settle the financial problem, the Commonwealth of Massachusetts granted to the two men the full title to the land east of the Genesee on the basis of the single payment that had been made, provided that the land west of the river reverted to Massachusetts. Phelps and Gorham accepted the proposal, and this tract has since been known as the "Phelps and Gorham Purchase."

At this point, Robert Morris, the financier of the American Revolution and a large-scale land speculator, proceeded to buy most of the territory in the western part of New York. From Phelps and Gorham, Morris purchased much of the land east of the Genesee. Shortly after, he sold about half of this land to a group of English capitalists, headed by Sir William Pulteney. Encouraged by the tidy profit of this swift sale, Morris, through his agent, now bought the land west of the Genesee River, the tract which Phelps and Gorham had returned to Massachusetts. Between 1792 and 1793, he sold the great bulk of this land west of the river to Theophile Cazenove, the representative of the six Dutch banking houses that later organized into the Holland Land Company. This last sale totaled 3.3 million acres. With this purchase, the Holland Land Company owned all of western New York that was north and south of a line a few miles east of the present city of Batavia, with the exception of scattered Indian holdings in the territory and a mile-wide strip along the Niagara River.

During the almost five years since the provisional land sale to the Company, pressures especially on Robert Morris had been mounting perilously. Morris's reach for land had far exceeded his grasp of cash funds available. By 1797, he was in serious financial straits. A measure of this desperation was his offer to pay "all expenses of every kind that may be incurred in holding" the Seneca conference.² Persuading the Indians to give up much of their land would stave off disaster and keep a now frantic Morris from debtors' prison. For a different set of reasons, Theophile Cazenove, too, had developed a
zeal for the sale to be consummated. In a nineteen-page letter, he ordered certain Company agents to “spare no pains or efforts to obtain the liberation of at least two million acres out of the 3300/M.” And although he counseled that the agents “must not meddle with” the problems between Morris and the Senecas, this was patently over-balanced by his almost unlimited authorization of generous gifts where needed to sweeten Indian tempers. Cazenove, then, had become as avidly eager to buy the land as the financially strapped Morris was to sell it.

Before the Company paid for the land in western New York, however, it had insisted that Morris first eliminate the Indian land rights. Morris agreed, promising explicitly “That no Money shall be paid but in exchange of the Indian title only & authentically agreed to signed by the tribes of Indians whose property is to be bought.” Morris was unable to fulfill this pledge for several years. Although the war between the western Indians and the United States did not involve the Iroquois directly, Morris feared that if the purchase were made during the fighting, the Six Nations might “be induced to join the enemies of my Country.” Another cause for the delay involved British procrastination in delivering the western posts to the United States. With both issues settled by 1796, Morris applied to President Washington to “appoint a Commissioner” who would “preside at a Treaty” with the Senecas to purchase a “Tract” of their land. After a brief wait, Washington complied in 1797.

The long-awaited meeting began on August 28, 1797. Acting for Robert Morris were his son Thomas and Captain Charles Williamson. Originally the agent appointed for the federal government was Isaac Smith but he declined so Jeremiah Wadsworth was his replacement. Over one thousand Senecas came, led by their sachems such as Red Jacket, Farmer’s Brother, and Cornplanter.

And representing the Holland Land Company was a team of six men carefully selected by Theophile Cazenove. William Bayard, partner in the banking firm of LeRoy, Bayard and McEvers, was authorized to make the final decision. Jan Lincklaen and Gerrit Boon, who had done sundry jobs for the Company, were consultants to Bayard. Two nephews of Company director Jacob Van Staphorst, who were visiting the United States, were invited as observers. The sixth man, Joseph Ellicott, was included for several reasons. He knew something of the territory, having helped brother Andrew in 1789 to mark off the western boundary of New York. His friendship with “several of the Seneca Chiefs” was another consideration. But the most decisive
factor, perhaps, was his appointment one month before the meeting as Chief of Survey; his task was to lay out the Company lands west of the Genesee, once the title had been properly transferred.

The discussions were proceeding on a pacific note until some one began selling whisky to the Indians. What resulted was a three-day drunken orgy which ended only with the timely intervention by Farmer's Brother; he managed personally to "stave in the heads of the casks." 7

The conference was now resumed. Red Jacket, Farmer's Brother, and Complanter, realizing the implications of the sale, refused to sign away the lands. The sessions were stormy, and both sides seemed to be reaching an impasse. Morris now tried a new tactic. A promise of sixty cows won over the Seneca women. An old approach, bribery, brought support from key Seneca sachems. Morris made immediate pledges to Red Jacket $600, Complanter $300, Farmer's Brother $100, Billy $100, and, Little Beard $50. In addition, annuities were guaranteed to Complanter $250, Red Jacket $100, Farmer's Brother $100, Billy $100, and Pollard $50. 8 Thus were the Senecas persuaded to give up their ancient claims to most of western New York.

On September 15, 1797, fifty-two Seneca leaders and Thomas Morris, as attorney for his father, signed the momentous Treaty of Big Tree at present-day Geneseo, New York. According to the terms, the Senecas would retain as their reservations a little less than 200,000 of the original 4 million acres. The Morris agents had fought hard to limit further the Indian holdings to 100,000 acres but failed. In the final negotiations, the Senecas agreed to sell their enormous piece of real estate "for the sum of one hundred thousand dollars." 9 The money was to be invested in Bank of the United States stock which would be held in the name of the President of the United States; dividends would be paid the Indians semi-annually. In a confirming note to the Senecas, Secretary of War James McHenry reiterated the treaty details, adding that Joseph Ellicott "has been employed to lay off the Reservations" set aside for the Indians. 10 With the signing of the Treaty of Big Tree, Robert Morris officially transferred to the Holland Land Company what had been conditionally agreed upon in 1792 and 1793: the three tracts of 1.5 million, 1 million, and 800,000 acres, for a grand total of 3.3 million acres.

Although the Company had had no legal right to participate in the meeting, the Dutch capitalists had become heavily committed. They had promised a sizable sum to get the meeting held and to obtain a clear title to the land. And the agents did more than observe. With
Company approval, they promised a reward of $1,000 to each of the three interpreters and $2,000 to the agent of the federal government to the Six Nations, if the Indians did not retain more than 200,000 acres to themselves.

The Treaty of Big Tree was signed sooner than expected, so Ellicott immediately set out to do some preliminary exploration in preparation for the formidable task ahead. During the fall of 1797, he toured the boundaries of the Company land. He surveyed the south shore of Lake Ontario to the mouth of the Niagara River, and from the southwest beach of Lake Erie to the western boundary of New York. He also prepared a topographical map of this survey. It had not been an easy journey. The last part of the trip had been made in foul weather, and he had walked nearly two-hundred miles through snow. By the middle of November, a physically exhausted Ellicott had completed the preparatory survey.

With a clearer idea of his needs, Ellicott spent the entire winter of 1797–98 in Philadelphia preparing for the expedition. Paid eight dollars a day, he was given complete authority by Cazenove. He planned to employ a party of 150 men—surveyors, draftsmen, cooks,
ax men, and camp keepers. From Thomas Morris, the son of the financier, he contracted for the delivery of bulk items: 270 barrels of flour, 100 barrels of pork, and 15 barrels of beef. He made a long and detailed list of articles essential for a season of such living in the wilderness. Some of the equipment included 5 boats, 2 ox teams, 35 pack horses, 100 pairs of horse shoes, 200 blankets, 30 regimental tents, 70 "falling" axes, and 150 pairs of shoes. To keep a record of the survey, Ellicott ordered 6 large folio blank books, 2 "grosses" of black lead pencils, 1,000 Dutch quills, and 1 gross of binding.11

Joseph Ellicott planned the survey as carefully as a general prepared for a military campaign. Dividing the men into smaller groups, he gave specific instructions to each group leader. Because transportation was costly and time consuming, Ellicott bought many items from suppliers located nearer to western New York. From Philadelphia, a stream of letters was mailed to New York, Albany, Fort Schuyler, Queenston, and Canandaigua. Deliveries had to be made to coincide with rendezvous plans of each survey group. It was a big job, yet Ellicott was as meticulous with the details as he was thoughtful about the large items. For example, his estimate of the cost of the articles was $7,336, while the wages of the employees for six months in 1798 was calculated at $16,830.

The choice of survey instruments posed a unique problem. The purchase was bounded in part by meridians, lines running north and south. To guarantee absolute accuracy in identifying the meridian, astronomical measurements had to be made. And to do this, a transit instrument, rather than the surveyor's compass, was essential. The transit instrument is a telescope mounted on a tripod which provides the stability and accuracy missing in the conventional compass. According to Ellicott, at the time there was in the country but one portable transit instrument. That was being used by Joseph's old brother, Andrew, who was laying out the boundary between the United States and the Spanish lands to the south. Special portable transit instruments, therefore, were built, and they seemed to have been constructed by Benjamin, Joseph's younger brother.12

Cazenove gave Ellicott only the most general instructions. The Agent-General was fully aware of the importance of the project, referring to it as "le grand arpentage," the great survey. Cazenove respected and trusted Ellicott's judgment, and in May, 1798, wrote to him: "To your vigilance alone the direction, Management and superintendence of this great and import Survey is trusted." As Chief of Survey, Ellicott was to lay out the 3.3 million acres of Company land
THE GREAT SURVEY

purchased from Morris. Based on the recent Treaty of Big Tree, Joseph was to arrange with the Seneca Indians the specific boundaries of their reservations. He was also to subdivide all the Company lands "into towns of six miles square, with a map of each town accompanied with field Books descriptive of the land, waters, Mill seats, Plains, Valeys, mines, minerals etc." 13

Ellicott continued to work closely with brothers Benjamin and David. They had helped Joseph in the survey of the Company lands in western Pennsylvania and now assisted him in western New York. Joseph, however, felt a special affection for Benjamin. An example of this intimacy was his answer to Cazenove's request to name a successor if something prevented Joseph from completing the great survey. "In that case," he answered, "I could wish my brother Mr. Benjamin Ellicott should act in my place, from a conviction that he is fully competent to performed [sic] every thing in that line with as much facility as I am able to do it myself." 14 Cazenove did just that, designating Benjamin as Joseph's successor should that become necessary.

In the spring of 1798, Ellicott headed a party of 130 men who plunged into the forests to begin the project. The high standards that brother Andrew had taught Joseph were now imposed by Ellicott upon his subordinates. He refused to depend on merely marking the various trees, for these imprints too often disappeared in a short while. Instead, Ellicott used permanent stone marks; these were set up along the boundaries of the Company lands, the Indian reservations, and the lines for townships. He showed an almost passionate concern for the accuracy of the survey. At the time, the country lacked a national standard for the measurement of a foot. Ellicott, therefore, collected a number of rulers, determined the average of their lengths, and used that figure for one foot length. To perpetuate his standard of measurement, he attached a brass twelve-inch ruler to the cover of every field book.

Ellicott's concern for detail also appeared in the careful system he introduced for taking field notes. He instructed each surveyor to identify himself and his assistants on the first page of every volume of field notes. By simple inspection, he wanted the reader to see easily the hills, plains, valleys, size of rivers, distances, and quality of the land. An index book was also constructed to facilitate locating particular field books.

The great survey took longer than Ellicott had envisioned. Originally planned for one season, it stretched into three. Officially, the survey started March, 1798. Benjamin Ellicott led one group at Wil-
Joseph Ellicott and the Holland Land Company

liamsburgh near Genesee Falls, while John Thompson had charge of another band at Buffalo. Ellicott was busy, traveling between Canandaigua and Buffalo, keeping track of the groups, making key decisions, and exhorting the men to greater effort.

His first objective was to establish the boundaries of the Indian reservations. Most of this was done the first season. Except for the Tuscaroras, who refused to allow a survey in 1798, the men measured and laid off Indian reservations at Cattaraugus, Tanawanta (Tonawanda), Buffalo Creek, and several smaller places. Ellicott was particularly pleased with the survey of the Buffalo reservation. Aware of the importance of owning the east end of Lake Erie, he had managed to get it excluded from the Indian reservation. To Cazenove, he confided happily that this section was "one of the Keys to the Companies land." 18

The next task was to lay out the eastern boundary of the purchase. This proved difficult. First, it was essential that both the Company and Robert Morris agree on the exact boundary that separated their properties. A joint survey was needed. To effect this, Ellicott went to Canandaigua where he met with Major Adam Hoops, a surveyor employed by Morris. Hoops, however, refused to send a surveyor or approve a boundary that the Company would lay out. From June 4 to June 14, there occurred a series of meetings and then an exchange of letters, all in Canandaigua, which an outsider would have found comical. Annoyed, discontented, and impatient to get on with business elsewhere, Ellicott reined in his normally quick temper. Finally, he persuaded Hoops to accept some principles as a basis to start the survey in the southwest corner of the Phelps and Gorham purchase.

Two days after his trying business at Canandaigua had ended, Ellicott was in Williamsburgh to set that party in motion up the Genesee River. Conferring with his brother Benjamin, who was in charge of the group, Joseph designed a plan of survey that would utilize the Genesee River for much of the travel northward. A boat was purchased, and Ellicott departed for Buffalo, leaving Benjamin to start this phase of the big survey. However, the plan to travel by boat failed. After Benjamin's party ascended the river about ten miles, they found the water too shallow and rapid. The water route was abandoned, and Benjamin had to buy a wagon and open a wagon road from Williamsburgh north. It was July 5 when Benjamin's part of the survey at long last began.

Benjamin's group pushed northward steadily. They followed a routine of camping in the woods, pitching their tents, transporting
their provisions, and surveying the lines. Then, they struck their tents, moved to another place, camped, and repeated the process. At each mile, a stone was set up and properly lettered. By December 3, the group had surveyed ninety-four miles and had finally reached Lake Ontario. Marking the specific boundary point on Lake Ontario was delayed until a double check could be made of the interior lines. Otherwise, the second objective, surveying the eastern boundary of the purchase, had been achieved.

Ellicott, however, was keenly disappointed that the entire survey had not been completed in 1798. He had worked the men hard, keeping them in the woods until December 7. By then, the snowfall was so deep and the weather so cold that it became impractical to continue. There had been unexpected delays. His troubles with Major Hoops and his miscalculations of the feasibility of using the Genesee River as a roadway north had caused a full month's delay. In September, several of the workers had been taken ill with fever and ague. Many of the pack horses got distemper, and several were lost in a short time. Although new recruits and fresh horses were soon gained, the time loss could not be made up.

Part of Ellicott's disappointment stemmed from his great desire to please Cazenove. In his report, he stressed the achievements, rather than the work yet to be done. The major and most intricate part of the big survey had been completed. What tasks remained were relatively small—laying out patches of Indian reservations, identifying the eastern boundary at Lake Ontario, and surveying the southwestern corner of the Company's land.

One way to court favor with the Dutch owners was by strict attention to costs, and this came naturally to the business-minded Ellicott. He kept careful accounts of all disbursements, large and small. His reports to Cazenove were studded with regrets at unexpected costs. But Ellicott did more than express regrets. He cited that in 1798 trade had stagnated, that jobs were scarce, and as a consequence the men worked harder. Trade did not improve in 1799, so he reduced salaries. Pay for surveyors was cut from three dollars a day to one dollar and fifty cents. Chain bearers, axemen, packhorsemen, and boatmen had their monthly wages dropped from fifteen to twelve dollars. However, the salaries of the two group leaders, Benjamin Ellicott and John Thompson, remained at four dollars and fifty cents and four dollars a day respectively. And Joseph's pay continued at the rate of eight dollars a day.

One more task remained, putting together a comprehensive report
of the findings of the big survey. Ellicott started to organize the report during the winter of 1798–99. Getting an adequate store of provisions, he spent that winter in a cabin somewhere on the Genesee road in western New York. After the pressing summer of 1798, Ellicott welcomed the solitude, describing the “situation well adapted for that purpose; being out of reach of all Society, I have nothing to attend to but the business.” When the survey was finally completed, he spent many months preparing a full and detailed report. In cold statistics, the big survey had started in March, 1798, had ended October, 1800, and had cost the Holland Land Company precisely $70,921.69½.

The great survey was finished, and Ellicott had achieved many things. He had marked out the boundaries of the Company land, he had subdivided the territory into townships of six miles square, and he had organized these districts into ranges. At the same time, he had taken careful notes regarding the land—the quality of the soil, the topography of the various sections, and locations suitable for future settlements. Ellicott’s report showed great care and exactness, and made clear to the Company that its tract of land in western New York was extremely valuable. The next step taken by the Holland Land Company was important—the selection of a skillful agent to sell this attractive property at a good profit.