

“SOLITUDE” AND THE NETHER DEPTHS: THE PITTSBURGH ESTATE OF GEORGE WESTINGHOUSE AND ITS GAS WELL

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SOLITUDE, that aggressive Victorian villa, that ice cream castle, has left little more than the vague outline of its foundations in the sod of a city park, but it was for many years the Pittsburgh home, as well as a symbol of the genius of George Westinghouse. Architecturally it was no more interesting than many another mid-Victorian mansion, nor was it outstanding among that extensive company of large houses which sprang up along the railroad lines of eastern America. Its very name, so representative of sentimental house nomenclature of the time, was a misnomer, since it stood only a few yards from the main line of the Pennsylvania Railroad, one of the great “highways” to the west. As a near neighbor of the Homewood Station, some six miles from the center of the city, its situation was then suburban although it lay within the city limits. From it Westinghouse could move quickly to his downtown office or to the great manufacturing plants at East Pittsburgh, but since his extraordinary ability was confined to neither place, his home figured largely in his career.

Solitude was itself a workshop and the inventor conducted there one of his most daring and spectacular experiments, one which helped to make Pittsburgh the great industrial center which it became. The natural gas well which he drilled on his estate combines with the house, the factories, and the great depths beneath the earth’s surface to form a composite picture which is highly characteristic of the age of Westinghouse.

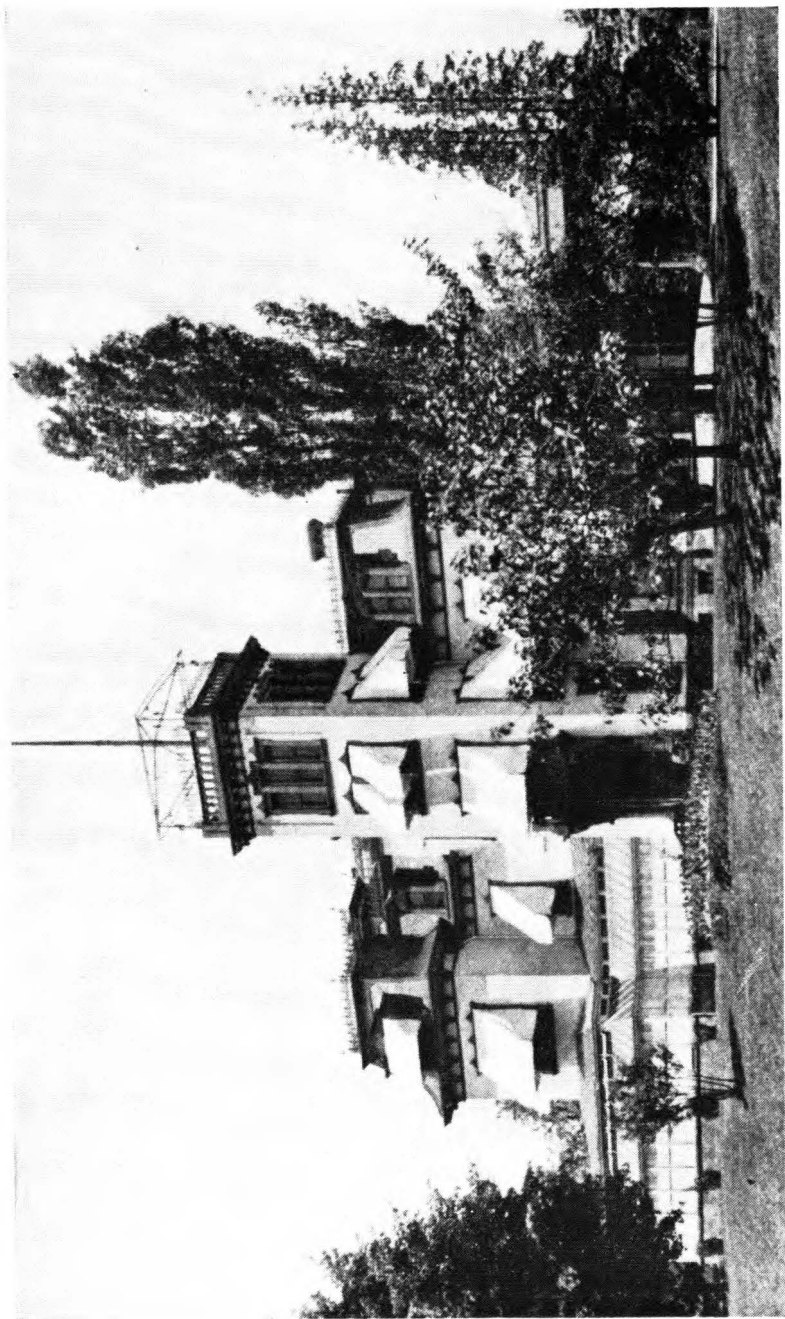
The student of the past can, with a little effort, call up the vision of Solitude as it once was—a little remote, stiff, prim, like an old picture post card or a “view” on a souvenir mug. Although

Mr. Van Trump, a member of the Society, is currently engaged in bibliographical work at the Hunt Botanical Library. For many years he has been interested in the history of local houses and estates and he has written several articles in which they figure. He has in preparation a book of his pieces on Pittsburgh architecture.—Ed.

there were truck gardens across the railroad and other property nearby, the home estate consisted of a plot about ten acres in extent, landscaped after the Romantic fashion with "specimen" trees, winding drives and shrubberies. In one corner of the lot near the Lang Avenue bridge rose the mansarded bulk of the house, three stories high, with its Italian tower, and toward the rear of the property was a stable of one story, also capped by a mansard. Between the two, off to one side, was a greenhouse, that inevitable footnote to luxurious Victorian domesticity; in the garden were resplendent flower beds, and on either side of the stable driveway two young Ginkgo trees. The house was far from palatial—this sort of thing had been more lavishly done elsewhere—and it looked provincial, harshly respectable, a little dull. If it had not belonged to Westinghouse, the place would have been no more important than twenty other Pittsburgh houses of the same period.

The estate has since metamorphosed into a public park named for its former owner, but, except for the disappearance of the house, the transition from the domestic to the municipal tone was easily made, since the place was an important one in the city and often in the public eye. The shrubberies have gone and many of the original trees. Children and dogs play among the ghosts of flower beds, while teen-agers and workmen, talking of love or pay-envelopes, pace the gravel drives which knew, once-on-a-day, the carriages of the great. A housewife with a picnic basket sits in the very middle of the former drawing room, oblivious of the phantom architecture all about her. Solitude, now more than ever a misnomer, has quite vanished into the Victorian past . . . the picture post card fades from the memory and the gas-well derrick which once roared like a geyser is nowhere to be found. Underneath its modern activity, the park is a place of shadows.

The writer has wandered in that park at all times and all seasons; he has wordlessly enquired of the shadows of trees, the serpentine paths and, in a corner, a forgotten block of stone. In a marvelous spring dusk he has stood under the shadow of the great Empress tree (vanished now also) and he has felt that if he were only to turn his head or glance lightly from the corner of his eye, he might see behind him the awkward tower with its patriotic flag pole rising against the luminous west. On a summer morning he has walked the length of the long grape arbor, which once ran west-



Solitude in Summer: the entrance facade and tower seen from the east.

ward from the house, watching, in the wonderful flecked light, the silver underleaf and curling tendrils of the multiplied vines. Were the ghosts of important personages—a president, a great scientist, or a prince—strolling there? In the autumn, when the Ginkgo trees had turned like the towers of Troy to pyres of yellow fire, he has almost glimpsed the tall figure of Westinghouse with his fine American face walking toward the workroom in the stable. And at any season he might, in passing over the great sweep of lawn to the south, encounter the rough spot in the turf where the gas well had been. Often in this place he has felt separated only by the thinnest line from greatness and the steel and plush splendors of Pittsburgh's industrial past.

But splendor at Solitude had always a muted quality, although the place was an active "social" center and, when it was en fete, the scene of considerable pomp and circumstance. Pomp requires wealth, a commodity which Westinghouse was able to supply, although he seemed to regard his money merely as a by-product of his mission in life—the conception and marketing of his inventions. There is no doubt that he was a great man, possibly the greatest who ever lived in Pittsburgh, and certainly a greater than the business or financial "wizards" who manipulated other men's ideas. He was sharp enough to manipulate his own ideas during most of his career and astute enough to be able to find assistants who could help him. No ivory-tower theorist, he was eminently interested (like his friend, Lord Kelvin) in the application of pure science to everyday life. He was at once a dreamer and a very practical man, a sound solid American of his place and time who could make those dreams come true. Perhaps he might better be called an "inspired" mechanic of almost divine proportions, a Messiah of the mechanistic 19th century. What was in his mind and what emerged from his hand has turned miraculously into many devices which have helped transform the world.

Westinghouse was not a Pittsburgher by birth and it is interesting to speculate what sort of person he might have become had he been born here or had he been exposed to the spirit of the city in his formative years. His story, like many American success stories, begins in a small town—in this particular case Central Bridge, New York, near Albany—where he was born in 1846. He was of American parentage, but his father's ancestry was German and his

mother's Dutch. The elder Westinghouse was much interested in machinery and, when George was ten, the family moved to Schenectady where his father became a manufacturer of agricultural machines. George inherited his father's love of mechanical work and during his school years spent much of his spare time in the paternal machine shop. Here he learned how to use tools, but he also studied mathematics and engineering; while he was still in his teens he designed and built a rotary engine. He served in the Civil War, first as a cavalryman and then as a naval engineer, which would argue a certain versatility even in active life. Two years at Schenectady's Union College convinced him that he had little inclination toward the life of a scholar. Shortly afterward, he invented a device for replacing on the tracks de-railed railroad cars, and he not only constructed it but traveled about trying to sell it, thus early developing a practical capacity for handling and financing his inventions which made him outstanding in his time. He possessed phenomenal energy and an extraordinary capacity for dealing with diverse problems in rapid succession. Even in his twenties, he showed the remarkable qualities that were to make him a great man.

He first conceived the idea of the air brake in 1867 after he had read an account of the use of compressed air in the boring of the Mont Cenis tunnel in Switzerland. In the same year he moved to Pittsburgh with his bride, Margaret Erskine Walker, whom he had married in Brooklyn. After he arrived in Pittsburgh, he met another young man, Ralph Baggely, who helped him build the new brake. In spite of many difficulties, Westinghouse finally arranged in 1868 for a test to be made on a train provided by the Panhandle Railroad at Pittsburgh. On the day of the trial, the train left the Union Station, passed through the Grant Street tunnel and ran toward a grade crossing between the tunnel and the river. A dray with two frightened horses was stalled in the middle of the track and to prevent an accident the engineer used the new device. In this, its first and most dramatic test, it was highly successful. In 1869 when he was only twenty-three years old, he organized the Westinghouse Air Brake Company of which he remained president until his death.

In the years immediately following his marriage and the invention of the air brake, he was much occupied with several other inventions as well as his efforts to introduce the use of his brake on

European railways. He began to travel widely and spent much time in Europe, but he always returned to Pittsburgh which remained his base of operations. During this period he also began to search for a house that would befit his new station in life and as a result Solitude (so-called by Mrs. Westinghouse) first entered the Westinghouse chronicle.

In March 1871, Westinghouse bought the nucleus of the estate, a plot consisting of nearly five acres, from James H. Hopkins who had built the house itself sometime in the late 1860's. Westinghouse later purchased other parcels of land nearby, part of which was later sold for real estate development. Additions were also made to the house, but they were carried out in the same style and the same materials. The mansard roof proclaimed it to have been a French Second Empire version, much Americanized, of the earlier Italian villa type which had lingered so persistently in American domestic architecture of the early Victorian period. The tower, four stories in height, was, one might say, a trans-Atlantic edition of a similar feature adorning Queen Victoria's villa at Osborne on the Isle of Wight. There was something tentative, awkward and naive about this mixture of ill-digested Classicism and Romantic tags, but it had a kind of shy yet aggressive dignity, a furbelowed, muted elegance which in retrospect seems charming. It was quite innocent of marble and grandeur, and even with its white paint and white awnings, it always kept something of the quality of the house of a well-to-do farmer. McKim, Mead and White knew it not nor did Richard Morris Hunt remodel its roof-lines; it did not become a French chateau when the dividends came rolling in or a Roman palace when the profits began to pyramid.

As time went on an engine room for the heating and lighting systems was placed in the cellars of the stable and a large chimney stack was built which projected above the mansard roof. Also in the stable was a workroom where Westinghouse kept his drawing board and in another part of the building could be seen a stuffed horse, the mortal remains of a favorite Westinghouse animal.

There were tunnels at Solitude to facilitate passage from one part of the estate to another. An underground passageway lighted by manholes was built to carry the heating pipes and electric wires from the stable to the house, but it was large enough so that Westinghouse or the servants might reach the engine room without

going out of doors. Through the south abutment of the now demolished Lang Avenue bridge ran another tunnel which gave direct access to the platform of the Homewood Station. The first passage has long since been filled with many years' accumulation of autumn leaves and the second is now bricked up, but they still impart an air of mystery to the park.

When very important visitors, such as Prince Michael Hilkev, the Imperial Russian Minister of Ways and Communications, who was entertained at dinner on an evening in October, 1896, arrived by rail, a red carpet and canopy stretched from the entrance tunnel to the main door of the house. On this occasion the Westinghouse gold dinner service made its appearance and pyramids of orchids adorned the banqueting table. Among the guests were Robert Pitcairn, Andrew Carnegie and H. C. Frick. There was a great reception after the dinner and the Prince left late that night for the east by special train. Much the same type of reception was accorded Prince Albert of Belgium in 1898 and both Lord Kelvin and President McKinley were guests at Solitude.

As a rule domestic arrangements at Solitude accommodated themselves to the activities of Westinghouse. His mind was never very far from his work and even when he was in company at home, whether at a large dinner party or a small game of cards, he was often visited by ideas that had to be noted at once. Isaac Watson, the butler, when serving at dinner, knew at a signal from his master when to bring a pad and pencil to Westinghouse's place. After his master had made some notations or a rapid sketch, the butler would take the paper to the big table in the library where the inventor would look at it later. Westinghouse could work anywhere—on his private railroad car, in any of the offices of the companies he founded, at the drawing board in the stable, or on a billiard table in the house.

Although the Westinghouses hadn't sufficient means completely to furnish Solitude when they first moved into it in 1871, the house was ornately decorated in later years. A new dining room was added at the back and a porte-cochere on the side next the railroad. In addition the inventor acquired the Blaine house in Washington and a large country estate at Lenox, Massachusetts; the latter, called Erskine Park, was Mrs. Westinghouse's favorite

residence. Until his death, however, Solitude always had an important place in the life of Westinghouse.

Undoubtedly the most spectacular event which occurred at Solitude was the discovery of natural gas on the property in 1884; it was a nine days' wonder which for a time caused great excitement in the city. The Westinghouses spent part of the winter of 1883-84 in New York where their only child, a son George, had been born to them. During this same period the inventor began to take an interest in natural gas in the belief that he might harness for commercial purposes this strange product of the earth's past history.

It had been known for some time that large deposits of natural gas lay under the surface of certain parts of western Pennsylvania, but it was looked on merely as a by-product of the oil industry which at that time was still flourishing in this locality. "Strikes" of gas had occurred in several places near Pittsburgh, notably at Murrys-ville in Westmoreland County, some twenty miles from Pittsburgh, where since 1878 some spectacular gas "gushers" had been drilled. Geologists regarded the gas accurately as a product of decayed pre-historic organic matter; there were other less enlightened folk who considered it an exhalation from the Pit of Damnation, the very breath of Lucifer and his angels. Many people were afraid of it because it was dangerous to handle: the tremendous natural pressure of the colorless and almost odorless gas was the cause of many accidents when it escaped from gas mains. Some manufacturing concerns had tried to use the new fuel but no attempt had been made to measure the abundance of the supply nor was there any adequate machinery that would harness and make useful this uncertain and capricious natural force. Westinghouse considered that if it could be properly piped and the city guarded against leakage in the mains, it would prove a great boon to Pittsburgh since it would provide the cheapest and the cleanest fuel for manufacturers.

As he turned the new idea over in his mind, he became convinced that he should do something about it. He had visited the wells at Murrys-ville and it seemed to him that if there were such an abundance of gas in that area surely there must be just as great a supply in the East Liberty valley—a supposition later to be proved without foundation. The long field in back of the stable at Solitude might be just the place to make the attempt and so on 29 December

1883 he signed a contract with the Gillespie Tool Company of Pittsburgh to bore the well.

After the Westinghouses returned from New York, drilling for the gas well began in earnest. The inventor's activities were looked upon with respect by Pittsburghers, but his friends and neighbors were suspicious of his new undertaking. It wasn't, after all, quite the thing to go drilling for gas in your own back yard—especially for such a treacherous, explosive element as it was known to be.

As spring advanced across the valley, the flat stretch of land back of the stable was filled with activity. To the formal elements of the Solitude landscape—the precise curved mansards of the house and stable and the young trees glistening in the sun—was added a sloping tower of coarse boards, seventy feet high, and the housing for drilling machinery. Groups of men moved about tending the machines and watching with caution the great drill as it bit deeper into the earth with every stroke. The somnolent chugging of the engine and the dull beat of the drill sounded always in the suburban air. Sometimes the tall figure of Westinghouse, clad in overalls, could be seen talking to the workmen or examining the machinery.

Twice, small veins of gas had been struck but the yield had only been moderate and Westinghouse was sure that if he just bored deep enough he might strike a really large reservoir. The drill kept thrusting deeper into the long history of the earth, probing into the unimaginable depths where lay the perished remains of pre-historic life. On the evening of 21 May 1884, the foreman Gillespie reported that he detected new traces of gas around the workings; the drill was now about 1560 feet down and although the indications were not strong he felt that they were getting near a large pocket of gas. After warning the foreman to proceed slowly and carefully so as not to endanger the lives of the men, Westinghouse went to bed and fell into his usual sound sleep.

Night surrounded the estate, the house slept, and there was only the sound of the engine turning quietly, the diminished thud of the drill as it probed more slowly and the intent voices of the workmen as they kept their watch. The hours passed and the world turned over toward dawn. Something split the silence and Westinghouse sat bolt upright in bed. There was a roaring in the air which seemed to be a continuation of some explosive sound. The gas well! He jumped from bed and glanced quickly through

the window, but it was still too dark to see much, although there was a hint of light in the east. To the sound of the continuous roaring he ran down the stairs, paying no attention to the excited stir in the now aroused house, and out into the grounds. The familiar scene had been subtly transformed, as by an enchanter's wand; the trees, the lawns and the flower beds were covered with a slimy mixture of mud and sand. Pools of filthy water lay in every direction and the whole landscape looked as if a great flood of waters had recently passed over it. Beyond the Ginkgo trees and the stable, he could see by the pale pre-dawn glimmer of light, a geyser of mud and water which was rising with an almost volcanic roar from the mouth of the well. By holding his watch to his eyes, he learned that it was about twenty minutes past three. Part of the derrick had been wrecked and there was no sign of the drillers. Westinghouse wondered if anything could have happened to them.

Soon the workmen, still rather frightened, began to emerge from the shadows; neighbors and even strangers from some distance were arriving on the scene. Gradually, by questioning the drillers, Westinghouse was able to piece together the sequence of events. Acting on his advice, the drilling had gone on so slowly that only fifteen feet had been added to the descent of the drill, when a rumbling from the depths of the earth warned the men to run for their lives. Behind them as they ran, a column of mud, gravel and water rose from the well mouth with explosive force, tossing aside the drilling apparatus and overthrowing the engine. So was consternation created in a Victorian garden by this last strange flowering of pre-historic undersea plant and animal life.

Mrs. Westinghouse, a few moments later, regarded the scene with a sort of comic dismay. Her husband asked her with a smile of enquiry if she were satisfied with the results of the experiment. She replied cheerfully that she was well enough satisfied since the house still had a roof on it and the kitchen was not wrecked. In the meantime, the geyser of mud and water had subsided and a stream of pure gas began to issue from the earth. The gas rose into the air with such force that it tossed aside heavy objects thrown into it by spectators, and large pieces of coal or even planks were splintered by the pressure. A hundred pound stone was lowered from the derrick by a rope, but it was thrown to one side. The day was given up to finding methods of restoring the grounds to their

former state, but this was difficult because the drillers were not sure how the new well would behave. Although they had drilled many wells, this was the most startling performance they had witnessed.

The flow continued unabated for a week during which time those who lived in the vicinity got very little sleep since it was accompanied by the perpetual roaring from the earth. There may have been those who thought darkly of Lucifer and his angels but if so, they kept their peace. Westinghouse had gone to work devising machinery to shut off the flow and to regulate it, and within a few days he had devised an apparatus which worked perfectly. The eruption ceased and quiet descended once again at Solitude.

When the well had been got under control and the troublesome emanation from the nether depths harnessed, Westinghouse decided to test the illuminating power of the gas. He caused a pipe to be built up about sixty feet from the well mouth, to the top of which a wire rope on a pulley was attached. One evening at a given signal, a burning mass of oil-soaked rags was attached to the wire and hauled to the top of the pipe into which the full force of the gas had been admitted. When it reached the opening a thin bluish flame hovered there for an instant and then a great column of light shot a hundred feet into the night air. The base of the pillar of fire was blue, then white; at its top it expanded into a wide tubular fan which displayed shades of yellow and orange and a sort of dull Indian red. The East Liberty valley was bathed in an almost diurnal radiance and nearly a mile away people were able to read newspapers by the light of the great jet of flame. The Children of Israel in the Wilderness were not more splendidly illuminated than the company who watched from the lawns of Solitude. Westinghouse gave several of these evening performances for friends, neighbors and visiting manufacturers. The heat generated by the flame was in summer intense; if the night was windy there was danger of fire; the roaring noise of the escaping gas again made sleep impossible; and so these feasts of light ceased to be either feasible or attractive.

The great column of fire seemed to be a bright portent for the new Children of Israel, the up-and-coming Pittsburghers, and their industrial city. Encouraged by his spectacular success, Westinghouse drilled several other wells in the surrounding district and the Solitude bore came to be known as Westinghouse Well No. 1 to

distinguish it from the others. A craze for drilling wells siezed the city; as one Pittsburgh newspaper, speaking of the East End district alone, put it laconically, "Twenty gas wells on the tapis." Few of these wells yielded much, however, and the Pittsburgh district never matched the yield of the Murrysville field. Even the Solitude well began to exhibit after a time rather disquieting symptoms which heralded its eventual exhaustion.

The chief value of the Solitude "strike" lay in the fact that it sparked Westinghouse's interest and his desire to initiate a safe and practical as well as profitable method of conveying natural gas to the local consumer. In the three years after the Solitude venture, he patented a series of devices which made gas an important factor in the Pittsburgh industrial scene.

Since the chief problem in dealing with natural gas was that of uncontrolled pressure, Westinghouse proceeded to invent a system of two pipes—the inner pipe carried the flow of gas while the outer received any leakage at several points, so that pressure in the main pipe was gradually reduced. Sometimes, as was also the case with artificial gas systems, the pressure was not constant and the gas would have to be shut off for various reasons. If the outlets were left open, accidents sometimes occurred when users of the gas tried to light their stoves or lighting fixtures. Since natural gas was almost odorless, it was doubly dangerous on this score. Westinghouse invented a cut-off valve device which was located in the supply pipe which led from the street main to the building, and which would shut off all supply until outlets in the building had been closed.

Anticipating the day when the natural gas supply would be exhausted, Westinghouse also inaugurated experiments to produce artificial gas from bituminous coal. Although these experiments were not quite so successful, they did produce a method of making gas that was an improvement on any process then on the market.

To get the natural gas to the consumer Westinghouse had to have permission to lay his new mains through the city streets. Local purveyors of illuminating gas saw a peril to their business in the inventor's activity, but he made it plain that he did not want to monopolize the city's gas business; he stated that he would prefer a cooperative group in which the manufacturing concerns who would use most of the gas should become partners with him in the venture. Finally the City Council passed an ordinance favorable to

Westinghouse and he was able to proceed with his plans. He realized that he could not depend on the Solitude well nor on any of the other Pittsburgh drillings for his supply, so he bought easements on properties at Murrysville and elsewhere.

It then became necessary to organize a company to distribute the product. The Fuel Gas Company, Westinghouse's chief competitor, had organized under an old Pennsylvania law which conferred on any public utility company which was the first to venture into its field in any given locality, a monopoly of that type of business. Westinghouse sent his lawyer, John Dalzell, to Harrisburg to see if any legal means could be devised by which he might become a competitor of the established firm. Dalzell found an old charter which had been granted to Tom Scott of the Pennsylvania Railroad for the purpose of building a branch line. However, it had never been implemented and since its provisions were broad, it could be used for almost any purpose. Westinghouse bought it for \$35,000.00 and using it as an instrument launched the Philadelphia Company (the company named in the original charter).

The Pittsburgh newspapers of 4 August 1884 contained an advertisement setting forth the prospectus of the company, together with its directors and officers—George Westinghouse was, of course, president. The company owned gas rights on the Solitude property as well as on other properties where Westinghouse had drilled wells; it also possessed the inventor's patent No. 301,191 for a "system of conveying and utilizing gas under pressure." The public did not rush to buy shares in the new enterprise, but enough money was available to get the new business started. Westinghouse's enthusiasm for his project was infectious and as the business began to look like a money maker, a lively speculation in its shares took place. He remained president until 1889 when he had to retire from active participation in the affairs of the company because of the huge scope of his activities. As time went on the firm he founded became a holding rather than an operating company and it branched out into the transportation, steam and electric industries. However, the original gas business was merged into the Equitable Gas Company (an independent firm until 1900 when it came under the control of the Philadelphia Company) which continued as an operating subsidiary of the Philadelphia until 1950 when it became an independent concern. Thus Westinghouse's venture inaugurated by the Solitude

well went on to expand and function in one form or another up to the present day.

The introduction on a large scale of natural gas into Pittsburgh manufacturing had enormous consequences for the industrial future of the city. In the early '80's it had been suggested that it might be cheaper to process iron ore at some point along the Great Lakes if coal could be brought there cheaply enough. However, the availability of a new type of cheap fuel changed the picture and turned the scales definitely in favor of Pittsburgh. New steel and iron industries were attracted to this area that might well have gone elsewhere and it was Westinghouse who helped materially to make Pittsburgh one of the great industrial cities of the world.

One has only to read the editorials in the Pittsburgh *Bulletin* of the late '80's to realize what a change the new natural gas regime had made in lightening the pall of smoke which hung perpetually over the city. Unfortunately the local deposits of gas had been wasted in a most prodigal manner and as the gas companies had to go further afield for new supplies, the price to the consumer rose to such a degree that many manufacturing firms returned to using coal. For its few years' respite from smoke, however, the city had Westinghouse largely to thank.

Westinghouse went on to other triumphs in the field of mechanical invention. His electrical devices were, after the air brake, the most famous connected with his name. In the early '90's, after a financial crisis in which he almost lost control of the great enterprises he had founded, the Westinghouse Electric and Manufacturing Company was formed. In the Panic of 1907, however, the company got into severe financial straits and in the reorganization that ensued he was forced out of the presidency. He died in New York City on 12 March 1914.

One of his biographers who was at Solitude early in 1915 after the house had been stripped of most of its fine furniture and its mementoes of Westinghouse, recalled that the most forcible reminders of the great inventor were the groups of exposed wires that ran along the walls. When the house had been wired for electricity, Westinghouse had wanted the system left exposed so that he could work with it when a new idea struck him. It was this homely touch, the combination of genius and down-to-earth practicality that made Solitude not only a Pittsburgh but an American place.

In 1918, the Engineer's Society of Western Pennsylvania, wishing to memorialize the great inventor, purchased the estate from the Westinghouse heirs and gave it to the City of Pittsburgh with the stipulation that it be used as a public park. The house itself was demolished in the summer of 1919, but the stable remains although it has been much changed and both its mansard and chimney stack are gone. The gas well, having served its purpose, has long since vanished.

Solitude is now Westinghouse Park, a playground, a place of miscellaneous public resort. Today, a child holding a ball, a matron walking a poodle, a youth in a sport shirt whispering to his girl, pass over the bones of the house, completely forgetful of the great shadows of the past. Whether they know it or not, these various persons have inherited not only Solitude but the world that Westinghouse helped make for them. He was a constructor, not a destroyer, and in these days of the most dire portents of destruction, this season of dismay, it is heartening to consider his life and his beneficent achievements.

BIBLIOGRAPHICAL APPENDIX

This rather discursive article does not pretend to be a piece of full dress historical research; it is rather an attempt to paint in quasi-narrative form, a portrait of a place important in its day, to present an informal account of certain events which may be of interest to the general reader. The writer has none the less attempted to examine all documents available to him in order to make his presentation as accurate as possible and his sources are listed in this bibliographical appendix. The essay itself is hardly more than a parochial footnote to local history, but such additions are, if not necessary, at least tributary to the general text. For the writer, who has lived near his theme for many years, it is, as well, a minor testament of the heart, a declaration of loyalty to his own back yard.

Extensive use has been made of the biographies of Prout and Leupp which still remain the best general authorities on the life of Westinghouse, inasmuch as nothing more definitive has been published of late years. Garbedian's more recent but almost fictional life (apparently written for the delectation of not overly intelligent

teen-agers) is so romantic in treatment as to be almost useless for any serious purpose; it does, however, contain on pp. 229-230 a list of the inventor's patents pertaining to natural gas. The writer has also consulted briefer accounts, some of which are listed below.

In regard to Solitude itself, the transfer of the property from Hopkins to Westinghouse dated 4 March, 1871 is to be found in the archives of the Allegheny County Recorder of Deeds (Deed Book 265, p. 515). There are further transfers of acreage from Hopkins to Westinghouse on 3 April, 1871 (Book 268, p. 555) and 14 January, 1880 (Book 398, p. 192). The Atlases of Pittsburgh and Allegheny of 1872, 1882, and 1889-90 published by the G. M. Hopkins Company, as well as the Pittsburgh Real Estate Plat Books from 1898 onward, have been useful in observing changes in the estate in relation to the surrounding neighborhood. The transfer of Solitude from the Engineer's Society of Western Pennsylvania to the City of Pittsburgh dated 30 November, 1918 is recorded in Deed Book 1962, p. 34. There are photographs of the house in *Palmer's Pictorial Pittsburgh* (Pittsburgh, 1905) p. 124, in an article in the *Pittsburgh Chronicle Telegraph* for 13 June, 1919, and in Leupp's biography. (See illustration)

Westinghouse, like many contemporary Pittsburgh "tycoons" was much interested in real estate. He was the first of the local industrialists to have his own downtown office building (erected 1888-89) and he engaged in large real estate development such as the Trafford City plan (1902) and other projects in East Pittsburgh and Pittsburgh itself. Around 1900 a large tract of land owned by the inventor adjacent to Solitude was laid out as an elegant upper middle class "plan of lots," but it was not a successful venture. The writer, who lives in one of the houses of this plan, has in his possession an elaborate brochure advertising the project which was called "Westinghouse Park."

The accounts of social life at Solitude have been taken mostly from the *Pittsburgh Bulletin* for the years 1890-1900 and from articles in the *Pittsburgh Index* for 12 August, 1911 and 21 September, 1918. The biographies noted above and scattered newspaper articles have proved useful for this section.

Comparison of various accounts of the gas well at Solitude reveal discrepancies both in the date and time of the discovery as well as the sequence of events in connection with it. The writer

has followed Leupp's account for the most part, checking it, where necessary, with other sources. Most biographical treatments of Westinghouse mention the gas well. Pittsburgh newspapers, particularly the *Chronicle Telegraph* and the *Commercial Gazette* for May, June, July and August in 1884, contain much information and the well was also mentioned in the *Engineering and Mining Journal*, XXXVII, No. 24 (14 June, 1884), p. 437, and *Harper's Weekly*, XXIX, No. 1508 (14 November, 1885), p. 747. Relevant articles from the Second Geological Survey of Pennsylvania are listed below. There is a photograph of the well by Histed in the *Pittsburgh and Allegheny Illustrated Review* (Pittsburgh, 1889), p. 32. In the issue of *Harper's Weekly* above, there is a large wood engraving showing the well in its ignited state.

Mr. Thomas Murphy of the Equitable Gas Company has provided information from the company archives, and conversations with Mrs. Roy A. Hunt, Mr. Rees T. Scully, Mr. Charles Welfer and Miss Jane Watson, the daughter of Westinghouse's butler, have been helpful.

When all the bits of the mosaic have been fitted together, the picture is at best only a partial one; the writer has at least not attempted to "restore" too freely where parts are missing. What was the reality of Solitude, what was done and said there, what was the exact story of the gas well? Who now knows? This article is a compilation of shadows; the substance is beyond recovery.

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