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## Contents

The Letchworth Park School Gerald F. Bigelow and Brian Nagel	1
The Sharrott Estates Prehistoric Site Edward J. Lenik	26
The Paul Site Don Thomas Crane and Donna Ottusch-Kianka	34
A Preliminary Report on the Attribute Analysis of Mohawk Ceramics Robert D. Kuhn and Susan Bamann	40

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**THE LETCHWORTH PARK SCHOOL 1874-1946  
HISTORICAL AND ARCHAEOLOGICAL  
INVESTIGATIONS**

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**ABSTRACT**

In the fall of 1986 the Genesee Region of the New York State Office of Parks, Recreation and Historic Preservation requested the Rochester Museum and Science Center (RMSC) Research Division's Cultural Resource Survey Program (CRSP) to conduct a cultural resource investigation at the site of a proposed storage building in Letchworth State park. The RMSC/CRSP carried out a Stage I archaeological reconnaissance survey and Stage II site testing program between November 18 and December 8, 1986.

These investigations demonstrated the presence of incomplete late nineteenth century structural remains in the northeast corner of the project area. Historical and ethnographic research confirmed that these incomplete wall lines were the remains of the Town of Genesee Falls District #2 School, built in 1874, and known after 1910 was the Letchworth Park School. No other cultural resources were located in the project area.

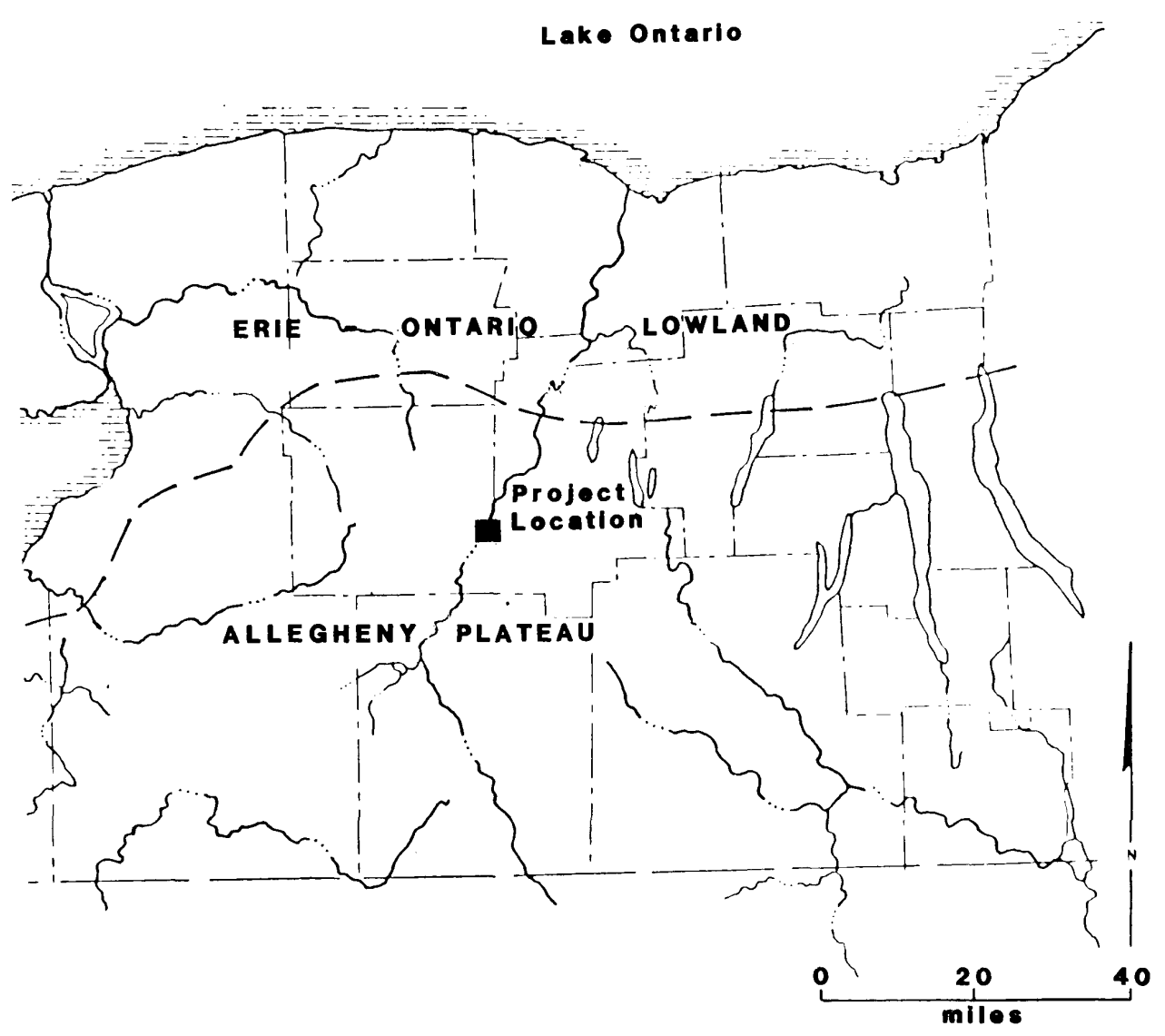
Further historical research after completion of the Stage II fieldwork revealed an extensive body of written records pertinent to the Letchworth School. From discussions with local historians, it also became apparent that former teachers and students were available for interviewing, and several individuals generously cooperated in providing personal memories of the early twentieth century school. The archaeological, ethnohistoric and oral history evidence created an unusual opportunity to study the of changing social and educational attitudes reflected in the form and use of a rural school.

**INTRODUCTION**

In November 1986 the Genesee Region of The New York State Office of Parks, Recreation and Historic Preservation requested all archaeological records check and field survey by the Cultural Resource survey Program of the Research Division, Rochester Museum and Science Center. The area of mitigation was a small lot within Letchworth State Park, Town of Genesee Falls, Wyoming County, New York, the proposed site of a storage building and access road.

Record checks of archaeological site rites at the RMSC and the New York State Historic Preservation Office revealed two prehistoric find spots within one mile of the project area. In addition, historical documentation demonstrated the former presence of a nineteenth century schoolhouse within the project area, and a pioneer cemetery and several historic structures located within several hundred meters to south. The NYSOPRHP therefore authorized the RMSC to conduct Stage IB and subsequent Stage II archaeological surveys and testing in order to locate the historic schoolhouse foundations, investigate their stratigraphic and horizontal integrity, and locate any undocumented cultural resources. The archaeological fieldwork was conducted between November 18 and December 8, 1986.

The project area is located on the west side of Trout Pond Road within Letchworth State Park, Town of Genesee Falls, Wyoming County, New York (Figures 1, 2). The lot is situated on gently sloping well-drained upland, and comprises a graveled parking area and access road, flanked on the north and south by deciduous and coniferous forest (Figure 3).

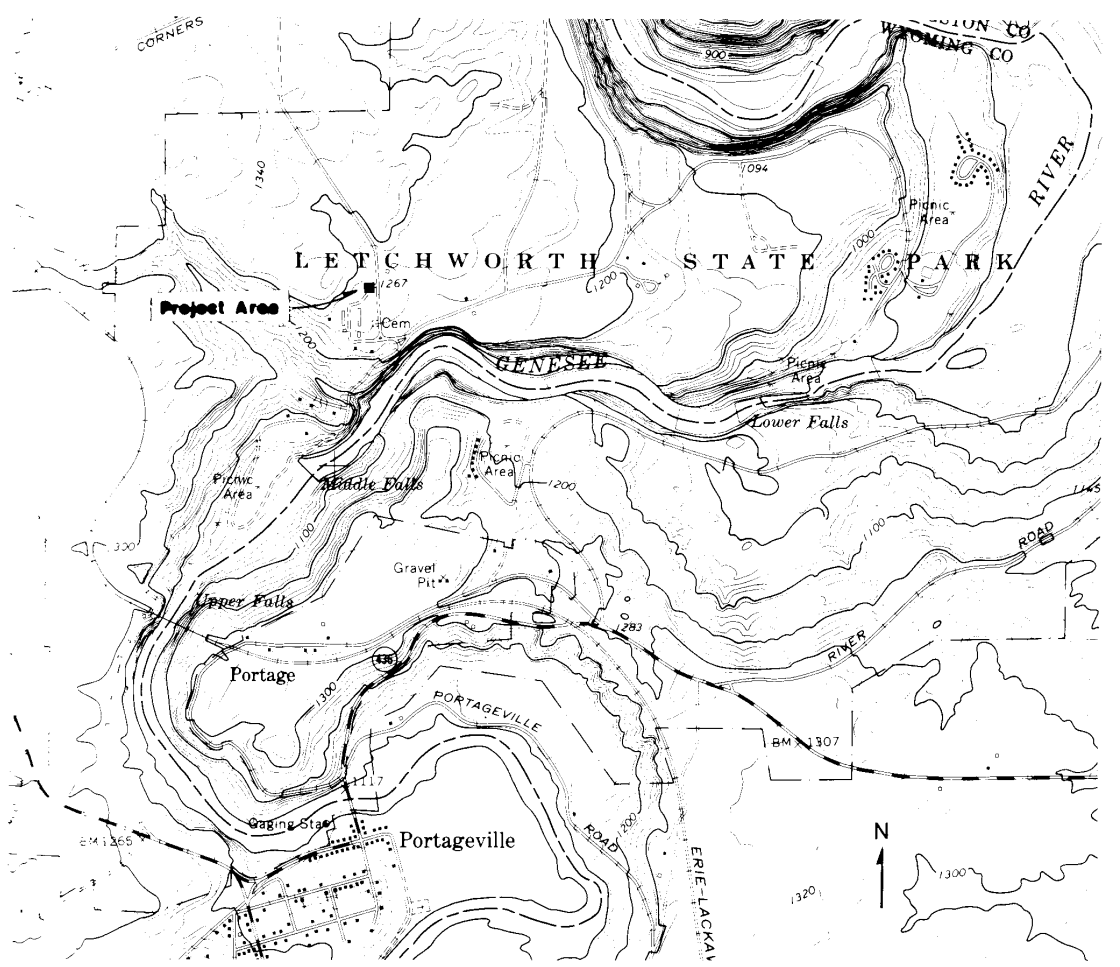


**Figure 1.** Regional Map

## DOCUMENTARY RESEARCH

### *Known Resources*

Records at the Genesee Region of the New York State Office of Parks, Recreation and Historic Preservation indicated that the project area was the site of a nineteenth century schoolhouse (Figure 4). Historical research has demonstrated that the schoolhouse is one of the best documented structures of its type; it is described in preserved original builder's specifications (Anderson 1984: 4-5), discussed at length in an early trade journal (Barnard 1876: 302-304), mentioned in a teacher's memoirs (Lyon 1977), and remembered fondly by former students and teachers who still live in the local area (personal communications from Sylvia Everett, Edalyne Everett, Adelle Eustace, Harry and Florence Lee and Margaret Mason). Combined with archaeological data from recent excavations, the wealth of written and oral information has created an opportunity to reconstruct detailed changes in the form and function of a rural school during the years 1874-1934, a period of radical transformations in American culture. The



**Figure 2.** Project Area Location (USGS 7972)

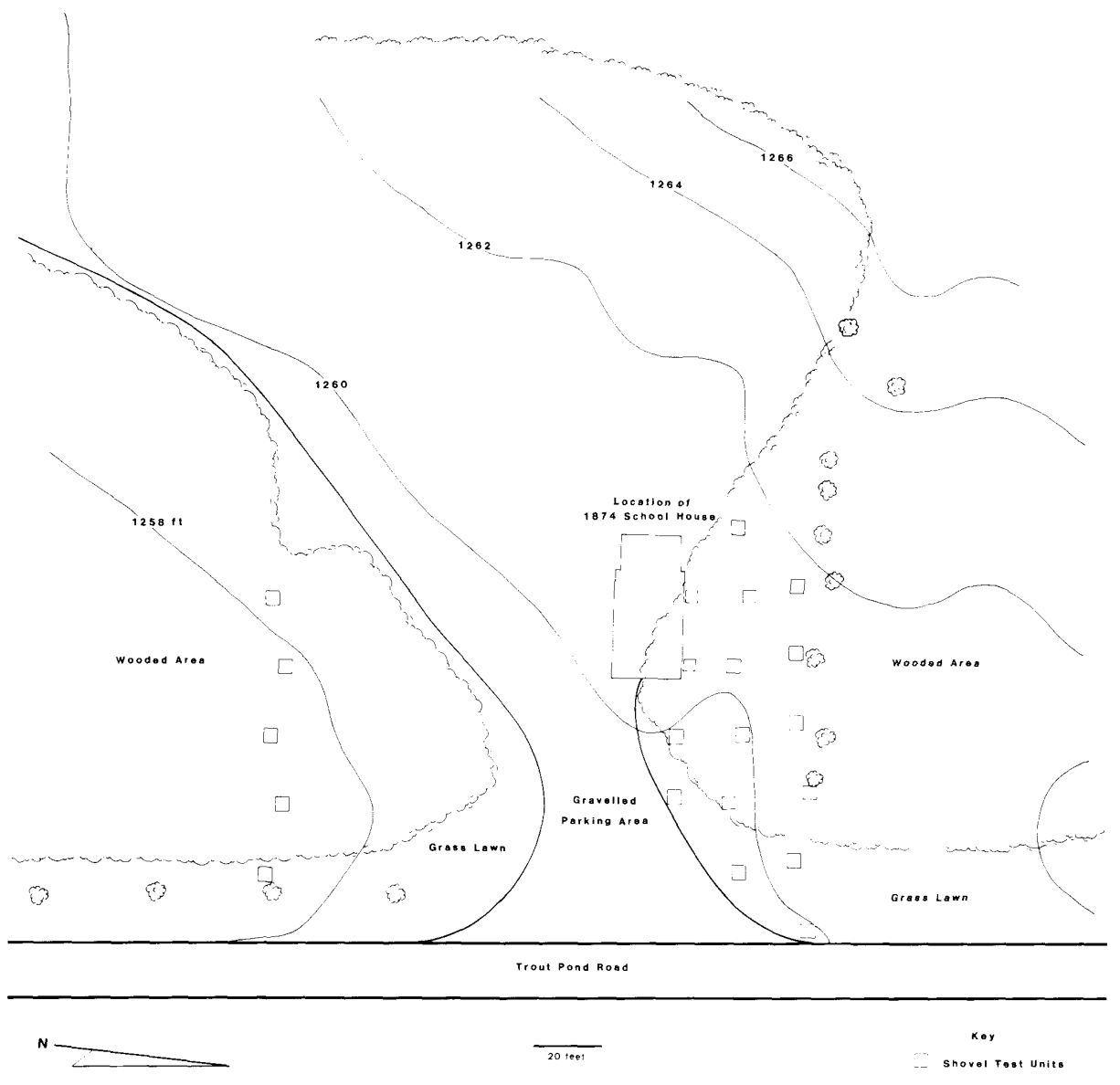
role of the school in local education, however, is best understood in the context of community development, which is recorded in nineteenth century and modern sources (e.g. Beers 1880; Beale 1982).

### *Community History*

The area which later became Letchworth State Park was wilderness until the early 1800s. Land sales in the region, which was part of the Cotringer Tract, began in 1816, but settlement by "squatters" preceded that date (Beers 1880:197). As in other frontier settlements on major rivers, logging and milling lumber were important early industries along the southern Genesee.

The first schoolhouse to serve the educational needs of the growing community was located in the Town of Nunda, Allegany County, until 1827, when its administration was transferred to the newly incorporated Town of Portage. In 1846 sections of the Town of Portage on the west side of the river were annexed by Wyoming County, and incorporated as the Town of Genesee Falls. Much of Genesee Falls, including the schoolhouse grounds, became part of Letchworth State Park when William P. Letchworth died in 1910, three years after he deeded the land to the State of New York.

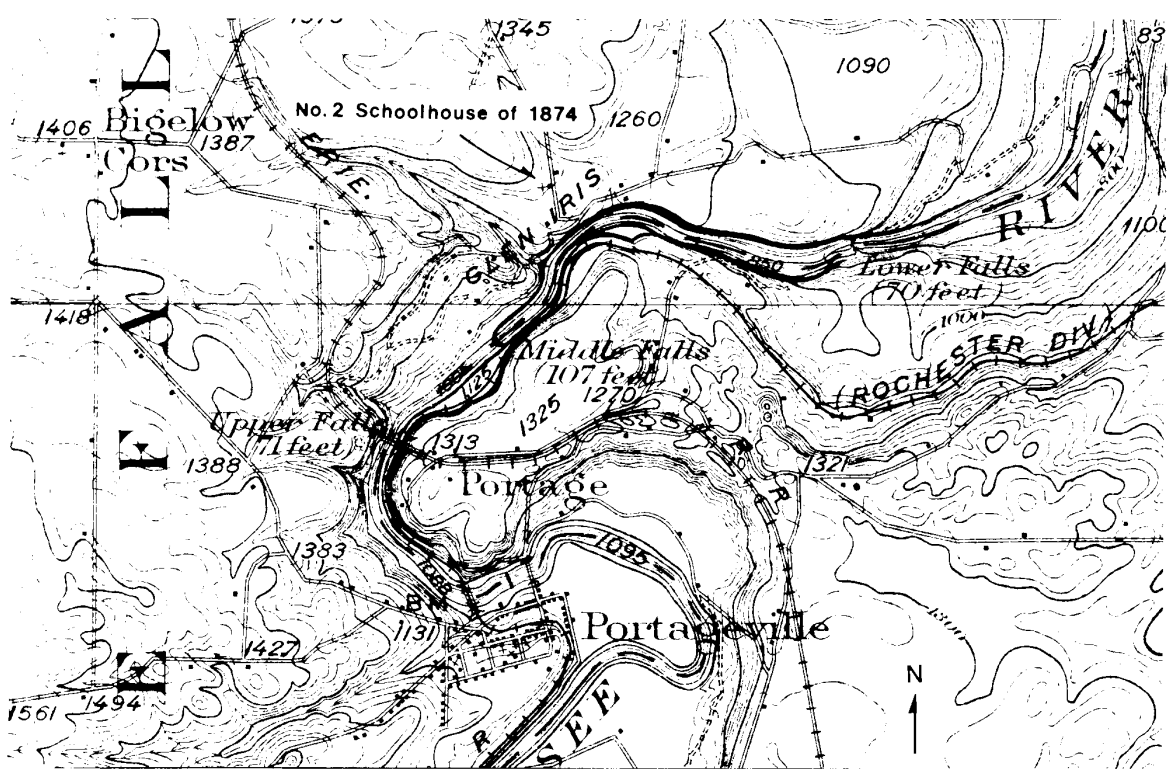
William P. Letchworth was an influential figure in nineteenth century New York State industry and



**Figure 3. Project Area**

philanthropy, and the driving force behind the building of the schoolhouse which is reported here. A wealthy industrialist from Buffalo, he decided to establish a home on the banks of the Genesee near Portage after viewing the natural beauty of the river gorge in 1858. In 1859 he purchased 200 acres, including the Middle Falls, and rebuilt a large house on the west side of the river near the falls, naming the place "Glen Iris".

Later, in the 1860s, he expanded the estate to about 1000 acres, which took in the entire Genesee Gorge between Portageville and Mount Morris. A lover of nature, Letchworth preserved the gorge from further commercial development, and enhanced its natural beauty through selective planting of thousands of trees, and the clearing of scenic overlooks. In this work he was guided by William Webster, a landscape architect, and an associate of Frederick Law Olmsted, the primary creator of Manhattan's Central Park, among others. Letchworth was also a student of Native American culture, and observed the rapid loss of local Seneca lifeways and lore in the mid-1800s. His concern for their culture was most tangibly expressed



**Figure 4.** Location of the Town of Genesee Falls District #2 Schoolhouse 1905 (USGS 1905)

in the salvage and preservation of the Seneca Council House and Mary Jemison's Homestead, and their relocation for public viewing on his property (Beale 1982).

#### *Early Schools*

The earliest documentation of public education in what is now Letchworth State Park dates from 1835, when School District #10 was created in the Town of Portage, Allegany County. At that time the new district proposed to raise \$241 for the construction of a new schoolhouse to replace an earlier building of unrecorded date (Anderson 1984:2). The new District #10 schoolhouse was built sometime after 1835 between the western gorge road and the ravine edge, just north of the Middle Falls. This school remained in use until 1874, but its administration was transferred to the Town of Genesee Falls as part of School District #2 in 1864 (Figure 5) (Anderson 1984).

#### *The Letchworth Park School*

In 1873 a committee was formed to oversee the building of a new school. The members included Marcus Pond, Myron Finch, and William P. Letchworth, who had been elected a trustee in 1870. The board of trustees met on April 19, 1873 and Letchworth submitted the following proposal for the new building:

I will make to the School District above named, the following proposition, I will execute and deliver to it a deed of not less than one-half and not exceeding three-quarters of an acre of land, that is to say six rods by sixteen deep situated in the northeast corner of what is commonly known as the burying grounds lot on the farm formerly owned by Merrit Davis. The same to be used and occupied by said District solely for a schoolhouse site and grounds. I will erect thereon a schoolhouse of the dimensions and description named in the specifications herewith submitted and properly fence the grounds and put two privies



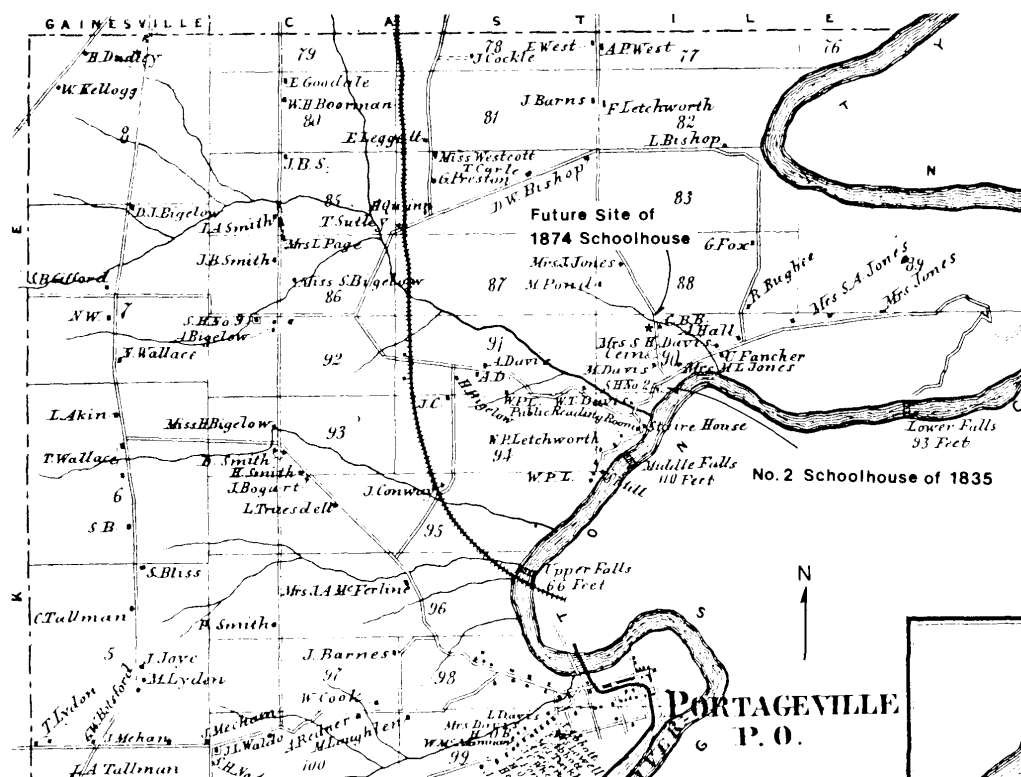


Figure 5. Map of Genesee Falls 7866 (Beers 1866)

thereon, all of the material, work and labor to be furnished and paid for by myself and the same to be complete and delivered to the District on or before the first day of April 1874.

The said school district shall pay me therefore the sum of one thousand dollars in two payments. The sum of five hundred dollars on the first day of October next and the sum of five hundred dollars the first day of April next.

The said school District shall also execute to me a quit claim deed of the present school house site and grounds connected therewith. Dated April, 1873. Signed Wm. P. Letchworth." [Anderson 1984:3].

The original building specifications are also preserved:

#### Specifications for Schoolhouse

Dimensions as per plan 20ft. wide and 30ft. long with rear buildings 10 by 16 by 8 Some changes may be made at option of the builder; but canopy over front door with ornamental brackets or similar ones as in plan shall be retained.

Bell tower may be changed in shape from plan at option of builder. Stone walls 18 inches thick laid dry 3 feet below surface and 1-1/2 feet above surface grade in lime mortar with good quality foundation stone, earth to be graded from building 1/2 inch to the foot. Sills 6 X 8 joists first floor 3 X 12 laying 4 inches in the sills and resting on the wall 16 in. to centre and bridged with 1 X 2 in. diagonal bridging with four 8 penny nails to each piece.

Ceiling joists 2 X 10 16 inches to centre. Sides of building may be constructed with 2 in. planks or studding not less than 2 X 4 and sheathed with inch boards. Cornice shall be of same projections as in drawing but may be altered as to style and plan of construction to suit builder. Rafters 2 X 6 feet to centre. Roof boards to be 1 inch thick and sound with best sawed shingles laid close 4 1/2 or 5 in. to the weather if 16 in. long and more or less should they be longer or shorter. Rider boards 1 inch.

Clapboards to be dry and sound 6 in. wide, 4 3/4 in. to the weather-5 in. corner boards. Windowpanes as per drawing with counter check sash in main building to be hung with weights and to have strong centre fastenings with pulley and endless cords to raise and lower top sash. Doors double thick 7/8 narrower dry sound flooring to swing out. Doors have strong black latch and bolt and one strong lock with two keys. Front steps and platform as per drawings of sound 1 1/2 in. plank standing on red cedar or walnut posts set 3 feet in the earth. Floor dry sound pine or oak 1 inch thick or a double floor at option of builder.

Wainscoting 3 1/2 ft. high 7/8 in. thick and not over 6 in. wide seasoned pine, oak, or chestnut with cap to finish window casings which will be cased an inch to receive sash weight. Casings 4 in. with 1 1/4 by 3/8 lead. Glass, best American well-bedded and set. Doors outside to have weights and springs to pull them together. Chimney to have smoke (and) ventilating flues plastered smooth to the top with register and cord near the ceiling and platform. Plastering two coats sand walls and plaster coating, painting two coats of pure lead and linseed oil of durable and tasteful color. Materials to be of good substantial quality and condition when put into the work, all to be done in a good substantial and workmanlike manner. Seats and desks to be put in to accommodate twenty-five scholars." [Anderson 1984:3-4].

The building was completed in 1874 and was considered a model rural schoolhouse of advanced design. All extant written records suggest the school was one of William Letchworth's special projects, one of many that reflected an interest in improving educational opportunities for the working class. That the schoolhouse was described in detail in an educational journal two years after its completion (Barnard 1876: see Appendix 1 below), was no doubt a product of Letchworth's pride in the school, and a desire to see a successful formula applied in other places. This early account is an invaluable record as it contains explicit descriptions of the building, the name of the architect-H. J. Selkirk, of Buffalo-a schematic floor plan (Figure 6), and most importantly, it states the rationale for the adoption of certain architectural features. This information, together with archaeological data discussed below, indicates that Selkirk's original specifications were followed closely, but not exactly, in the actual construction.

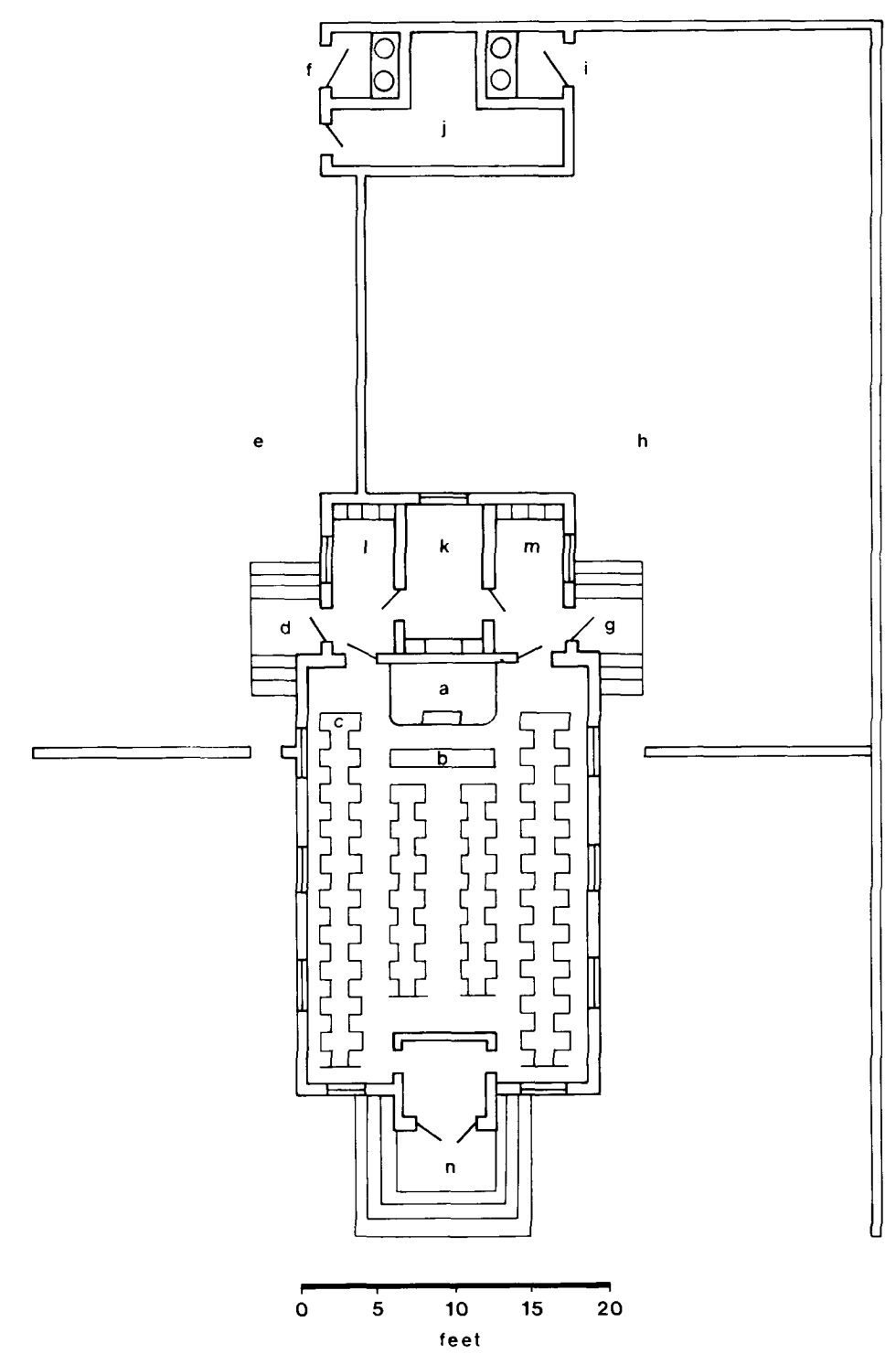
For example, it is clear that the building's proposed dimensions were largely adhered to; the main schoolroom was 30 X 20 feet, and according to Barnard's description, the ceiling was 11.5 feet high. However, the original plans called for a rear wing of 10 X 16 feet, while Barnard stated that it was 10 x 17 feet (1876:302). Excavations of preserved foundations (Figure 7) confirm that Barnard was correct, and that the original plans were modified.

The presence of a cellar under the school is another point on which the documents of 1873, 1876, and the archaeological evidence diverge. Barnard suggested that the height of the foundations allowed "ample space for lighting a basement playroom, to be used in stormy weather or when the ground is muddy" (1876:302), but the archaeological record corroborates the testimony of informants who remember a low crawl space which was hardly sufficient as a playroom. Barnard's suggestion that a furnace could be placed there was also speculative; it appears that a woodstove in the classroom heated the school during its whole history.

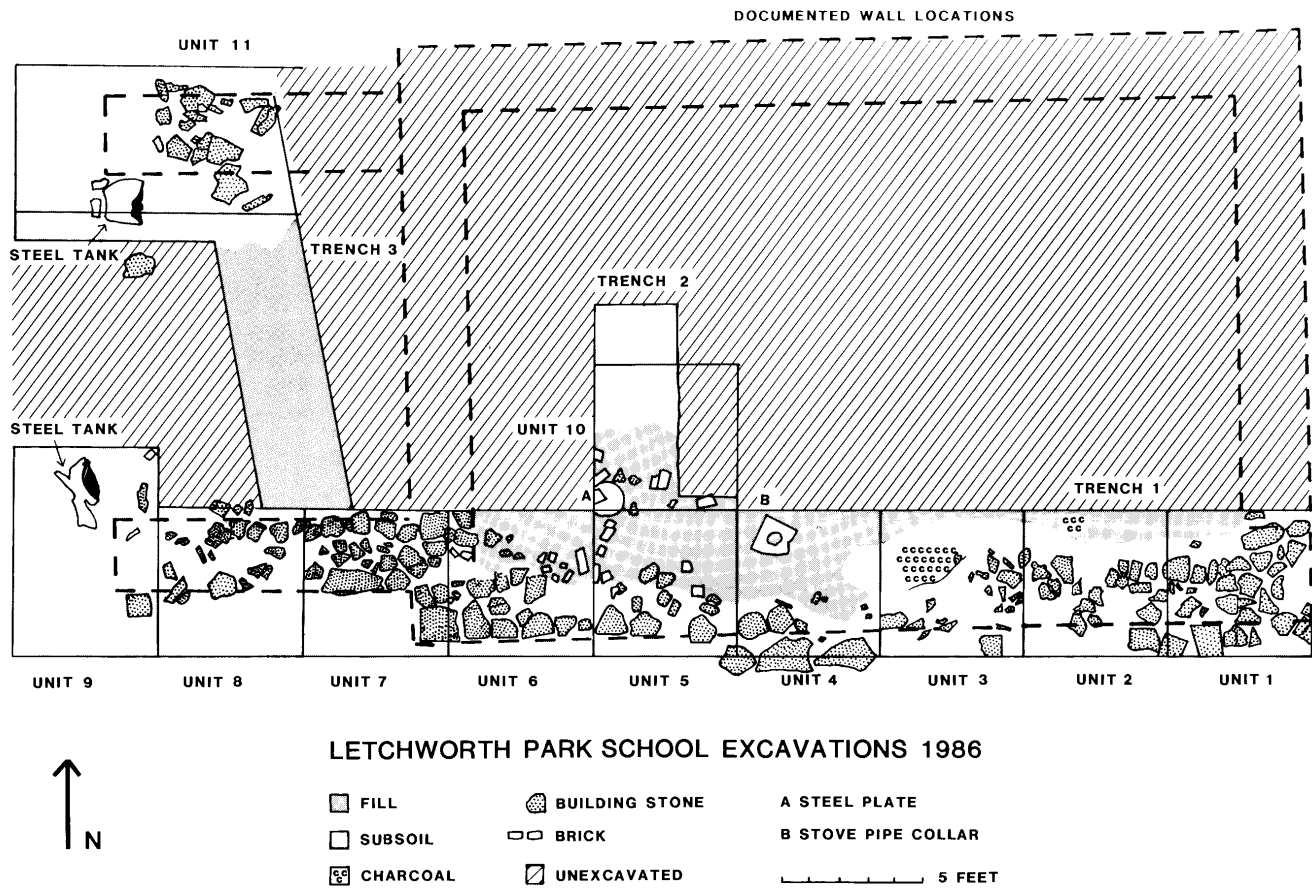
Other aspects of the building recorded in 1876, however, conform exactly with the 1873 specification, and the later report also clarifies and expands upon the earlier proposal. The structure displayed the high quality materials and workmanship which were prescribed in Letchworth's proposal. Certain principles followed in the construction were considered quite progressive, and Barnard's report recommends their use elsewhere. For instance, the walls, floor and ceiling of the classroom included an internal layer of tar paper which insulated the building. Other advanced features included large windows which were counter-weighted for easy adjustment, and an air vent with registers which was built in a separate flue in the chimney (Barnard 1876:303).

Barnard's report also provides much information about the school's original interior floor plan and finish. The walls were wainscoted to 2 feet 10 inches, with painted plaster above. The large front entrance was reserved for public meetings, and two smaller doors in the west end of the main room were the entrances for the teacher and children. These doors flanked a platform where the teacher's desk stood; the platform was 2 feet 4 inches high, a grand elevation probably related more to the platform's secondary use as a stage, rather than reflecting a conscious effort to make the teacher tower over the pupils. The Students sat in four rows of single desks down the length of the classroom. The exact seating capacity is unknown, but the proposal for the school suggests desks were provided for 25 students. A large piece of furniture shown on the 1876 plan was probably a long recitation bench, a fixture known in later years.

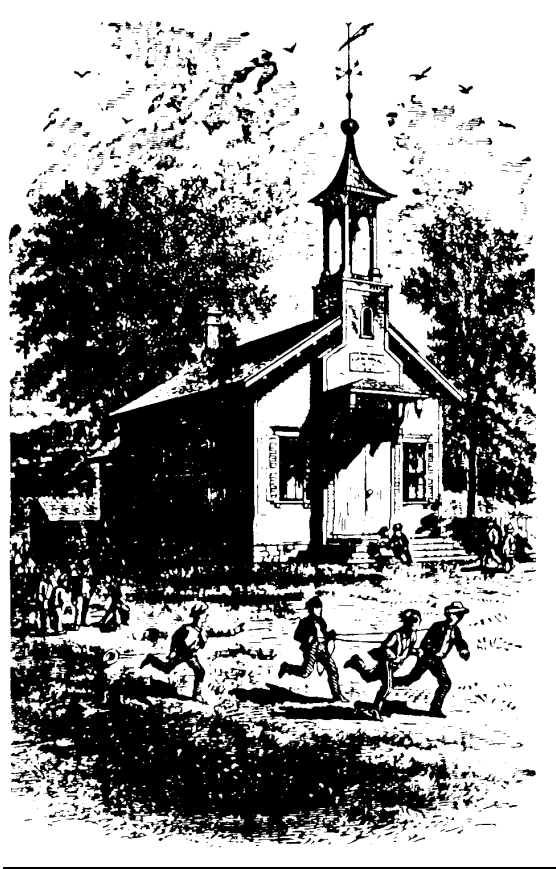
The rear wing contained three rooms; the southern was the boys' entrance lobby, which contained storage pigeonholes for lunch pails, slingshots, frogs, etc., and the northern was the girls' entrance room



**Figure 6.** 1876 Floor plan of the District #2 Schoolhouse; a) teacher's platform, b) recitation bench, c) desks, d) boys' entrance, e) boys' playground, f) boys' privy, g) girls' entrance, h) girls' playground, i) girls' privy, j) woodshed, k) teacher's room, l) boys' storage area, m) girls' storage area, n) public entrance (after Barnard 1876:301)



**Figure 7.** Archaeological Evidence of the Letchworth Park School



**Figure 8.** 1876 Engraving of the District #2 Schoolhouse (Barnard 1876)

which had corresponding storage facilities. The middle room was reserved for the teacher, and the school library and teaching supplies were kept there, in cabinets which flanked the chimney.

Barnard's report also included an engraving of the school (Figure 8). When compared against later photographs (Figure 9, 10) this early pictorial record indicates that the structure's belfry was part of the original design, and changed little over the life of the building.

The 1876 article is particularly detailed in its descriptions of the school's yards and privies, topics which were barely discussed in the original proposal. In the early years of its use, the school had two playgrounds, one for boys and one for girls, separated by a high board fence. The privies were reached via the playgrounds, and were located at the opposite ends of a rectangular woodshed. From the plan in Barnard's report, it seems that the privies were typical two seat sheds over pits.

Thus the Genesee Falls District #2 schoolhouse in 1876 was a new, carefully designed building, and it was publicized nationally as a "state of the art" rural school.

#### *The School c.1914-1946*

The extensive body of information on the school's last period of use is a product of its former students' and teachers' nostalgia for the times they shared in the old building. Without the written and photographic accounts of Mildred Anderson (1984) and Florence Lyon (1977), and the interviews generously granted by Sylvia and Edalyne Everett, Adelle Eustace, Harry and Florence Lee and Margaret Mason, there would be no descriptive records of the District #2 school after 1876. It is fortunate that this information is available for study, because it demonstrates that the school changed over time, both in form and in function.



**Figure 9.** The Letchworth Park School in the 1890s (courtesy of Clark Rice)



**Figure 10.** The Letchworth Park School in the Early 1900s (Anderson 1984)



**Figure 11.** The Interior of the Letchworth Park School 1913 (Anderson 1984)

The outer form of the building changed little over the years. However, the interior's finish and floor plan were modified, and the recreational use of the grounds shifted dramatically in the new century. By 1913-1914 the plaster walls had been covered with green burlap, but the wainscoting was never painted. An interior photograph (Figure 11) shows that the old desks were replaced sometime prior to 1913, and the seating capacity was reduced to approximately 16-18 (Anderson 1984:4). The photograph also reveals that the recitation bench was moved to the south side of the classroom prior to that date. By 1918 a pump organ had been installed near the bench on the south wall (Lyon 1977:21).

Kerosene lamps on ornamental brackets, also shown in the 1913 photograph, were used to light the school between 1913 and 1947, and were probably original accessories; the building was never electrified. The school also lacked plumbing during its period of use, and drinking water obtained from a farm spring across the road was dispensed in a cooler. Students eager for fresh air vied for the job of hauling the water (Lyon 1977:14).

Raising the flag was another daily task for which the students competed. During the school's later history the flag was hung from a pole over the front steps, a pole which was cleverly designed to fold downward for attaching the flag. Photographs (Figures 9, 10) suggest that this unusual fixture was installed sometime around 1913. Before that time there was a large flagpole in the front yard.

The early photographic record of the school also demonstrates that the front entrance platform was changed prior to 1913; the original platform was equipped with steps on three sides, but was replaced by a landing which had steps only on the front (Figures 9, 10, 12).

These alterations represent relatively minor improvements and building maintenance. However, several modifications made during the school's later history were more ambitious, and illustrate basic changes in the activity patterns of the students and teachers. For example, interviews revealed that the outdoor privies were replaced sometime between 1914 and 1921 by indoor chemical toilets located in the former boys' and girls' entrance lobbies (Figure 13). The toilets emptied into steel tanks with agitation rods, which were fabricated by the Kaustein Tank and Furnace Company, of Perry, N.Y. (Jan Vrooman, pers. com.). At that time a washbasin stood under the window in the teacher's room, which was converted to a formal library area (Lyon 1977: 21).

The installation of similar indoor facilities was a common improvement in many American rural schools at that time (Figure 14). At the Letchworth Park School, as the building was known after 1910, this modification was part of a more general change in school use; photographs from the period 1890-1913 demonstrate that the fences which separated the school's playgrounds and privies were also removed prior



Figure 12. The Letchworth Park School Class 1913 (Anderson 1984)

to the installation of indoor toilets. As discussed below, these architectural changes seem to signal an important shift in attitudes toward the use of space outside of the classroom.

Sometime in the late 1920s the last significant structural change occurred when the windows on the north side of the school were moved, and two were placed between the windows in the south wall (Figure 15). Informants state that this alteration was made to eliminate cross-lighting, and to ensure that light fell over the left shoulders of the students, a special concern of the district at that time.

### *The Final Years*

In its early years the Letchworth Park School provided instruction for Grades 1-12, but later only students in Grades 1-8 attended. Older scholars were taught at the high school in Castile. After William Letchworth died in 1910, and his property became a New York State Park, the estate's tenant farms were gradually vacated, and as the departing tenants were not replaced, the number of local students dwindled. In 1913 the school class consisted of only five children. By the 1930s district schoolhouses were being closed throughout rural America, and students were increasingly bused to large centralized schools. The Letchworth Park School was also a victim of this phenomenon, and its last class graduated in 1934, when the remaining students were sent to Castile. The building stood empty until 1947, a year after the Genesee Falk School District #2 was absorbed by the newly centralized Common Free School District, and the old schoolhouse by default became the property of the State of New York. The school and its contents were then auctioned off, the building was razed, and much of the timber was salvaged and used for remodeling a school to be used for residential purposes in Warsaw.

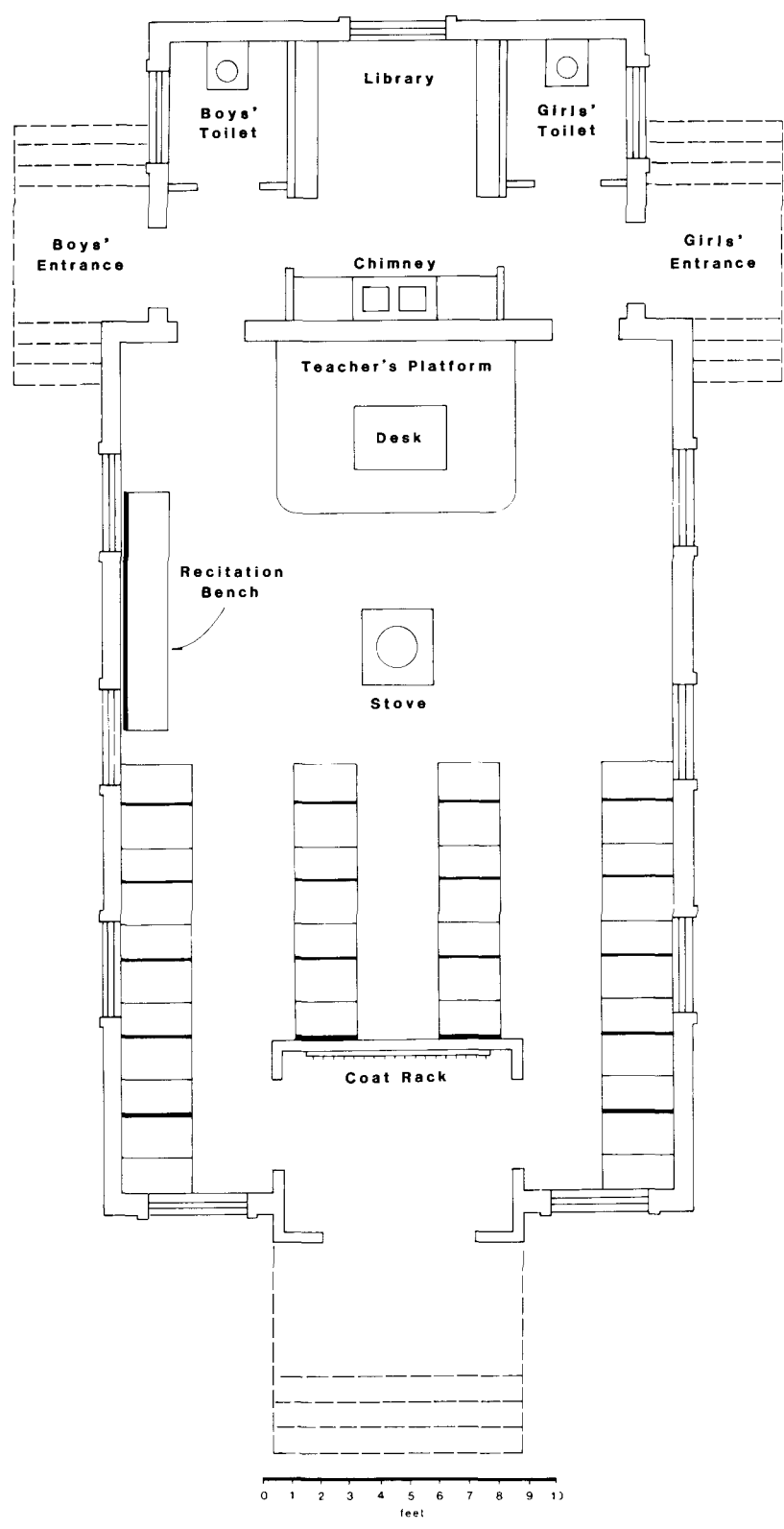
## THE LETCHWORTH PARK SCHOOL AND CULTURAL CHANGE 1874-1946

The Letchworth Park School was built in 1874, abandoned in 1934, and razed in 1947. During the school's lifespan America fought two wars, her economy was transformed through rapid industrialization and technological innovation, and far-reaching social changes occurred in response to many new influences, including massive immigration. Although the school was isolated from urban areas where many of these shifts were most acutely felt, the available evidence for change in the school's form and functions seem to reflect the local impact of large scale cultural trends.

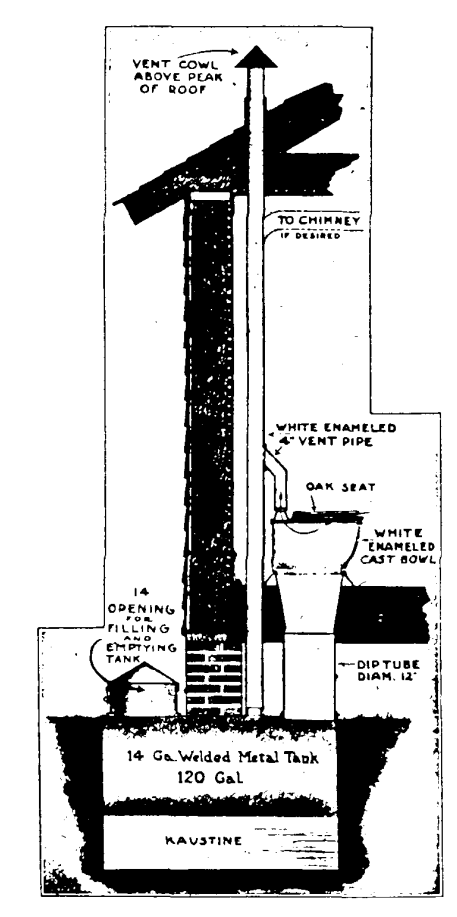
### *The Late Victorian School 1874-1914*

The Town of Genesee Falls District #2 schoolhouse of 1874 was not a typical district school of vernacular form; it was planned by an architect, and its design incorporated principles which were





**Figure 13.** c.1921 Floorplan of the Letchworth Park School (reconstructed from interview information)



**Figure 14.** Advertisement for Smith Chemical Closets, 1915, a Type Of Kausteine Process Chemical Toilet (see Gulliford 1984:221)

considered important by Victorian educational theorists. As early as 1832, American educators developed plans for rural schools which expressed current philosophies of education (e.g. Alcott 1832; Barnard 1838; Dwyer 1856; Johonnot 1871). By late Victorian times an increasing number of teachers and architects proposed that school buildings should be specialized structures containing ideal teaching and learning environments. The Letchworth School displays features characteristic of this period of professionalization in teaching. The dimensions, for example, conform very closely to the size range recommended in the *American Journal of Education* in 1873: "For a very small district the building may be 24 x 32. Teacher's platform 6 x 10, or 5 x 8, 8 or 10 inches high." (in Gulliford 1984:188). Large, ornate belltowers were also frequently built into the better, more expensive schools of the time (ibid: 171-175). Even the arrangement of the privies-located at opposite ends of a wood or storage shed-was a common architectural formula in public buildings (ibid: 175). Henry Barnard's description of 1876 mentions other aspects of the school which mirror prevailing educational philosophies. Separate entrances for boys and girls, and their location at the front of the classroom, were carefully planned because:

... the pupils face the school upon entering it, thus causing less interruption than where the entrance is at the back of the pupils already seated, who cannot be restrained from at each opening of the door from turning to look at the incomer. [Barnard 1876:303].

The use of single desks was another means of maintaining order because:

Less interruption occurs where each scholar holds an isolated position. An industrious scholar placed beside an indolent one at the same desk, may lose the benefit of instruction during the whole term, by reason of his close proximity to a profitless and possibly mischief-making companion. [ibid].



**Figure 15.** The Letchworth Park School 1934. (courtesy of Florence Lee)

Like many of his peers, Barnard also recognized the need for a comfortable, light and airy room for students, and he advocated the use of specialized techniques to create such an environment.

For example, the large, counter-balanced windows were praised as:

. . . a feature which should be identified with every school-house, as better ventilation is secured by the facility with which windows are raised and lowered and adjusted to the precise needs of the time, by the slightest touch of the hand. [ 1876:303].

The extensive use of tar paper to seal the classroom walls, floor, and ceiling, and the inclusion of a specialized air vent, were other advanced techniques which improved control of the classroom environment.

One of the most interesting aspects of the school which Barnard commented on is the layout of the areas outside the classroom. From the published plan, and from Barnard's explanations of its intended use, it is clear that the separate entrances for girls and boys, the teacher's room, the playgrounds and the privies together formed a complementary series of autonomous activity areas which were designed to distance the male students from the female students, and additionally, to separate teachers from students of the opposite sex. The latter point is revealed in Barnard's statement that "If (the teacher's room) is occupied by a male teacher, the door on the girls' side is kept locked, if a female teacher the opposite door is secured." (1876:302). Other comments by Barnard underline the primary intent to protect the privacy of the female students:

It (the schoolhouse) has an entrance in the wing on the left for boys and upon the right for girls. The latter . . . pass through a gate in a high board fence which . . . encloses a small square play-ground exclusively for the girls, within which is a closet, the purpose of which is concealed by its being placed in the corner of a building used as a coal-house or woodshed . . . The fence referred to-'a tight board one, picketed and seven feet high extends between the wing and the shed. The rail bars of this fence have

boards placed diagonally above the rail, so that little feet cannot get upon them or climb over the fence from the rear of the yard. Into this yard the boys are not expected to enter. [1876:302].

When the boys leave the school-house they enter at once upon their playground in the rear, away from the road, while the girls enter at once their private playground, and can use the conveniences located therewith in that seclusion which the natural delicacy of the sex requires, and which should not only be observed, but encouraged." [1876:304]

From these descriptions it appears that the design of the early Letchworth Park School was influenced in part by cultural values which were widely held in late Victorian America. First, access routes into the classroom and seating arrangements were intended to ease the maintenance of *order*, and to encourage the personal concentration necessary for *self-improvement*, aspects of behavior which were strongly promoted in late 19th century America (Howe 1976). Second, *new architectural concepts*-which today would be part of environmental design-were consciously exploited to increase the comfort, and thus the *efficiency*, of the students (Gloag 1974). Third, student activities outside the classroom were sexually segregated, reflecting a prevailing Victorian view of women as *delicate, ultra-modest, highly sensitive creatures* requiring careful protection from the coarser male students (Riegel 1970:57-61; Green 1983).

### *The, Twentieth Century School 1914-1946*

The memoirs of Florence Lyon, who taught at Letchworth Park School from 1918-1921 and 1923-1926, describe a place of learning with an atmosphere far removed from the Victorian ideal. By 1918, the fences which separated the playgrounds were gone; they appear in a photo from the 1890's, but are absent from a similar view taken around 1900 (Figures 9, 10). The chemical toilets had also been installed in the back wing by 1918 (Lyon 1977:21), and thus the carefully thought out placement of the Victorian privies was also abandoned. Lyon's book records very clearly that these architectural modifications were material expressions of changes in behavior; her account contains many references to students of both sexes playing anywhere and everywhere around the school. While in 1876 Barnard praised the fenced private playgrounds, in 1919 Lyon recorded that:

... the children discovered a new play area-the attic-and went there regularly. I could hear hammering and sawing and great activity up there. Finally ... they insisted on me going up to see the new playroom. The ascent was not easy for the attic was reached by a trap door in the ceiling of one of the back rooms. [Lyon 1977:22].

Even allowing for the fact that Florence Lyon was clearly a "good sport" teacher, and that other instructors may have more severely restricted their students' play, it is apparent from the architectural changes that the district board no longer thought that a stringent separation of male and female students was desirable. The elimination of rigidly differentiated play areas for boys and girls seems a reflection of much more general changes in social attitudes that characterized the period between 1890 and 1918. For example, Victorian stereotypes of women were seriously weakened by the voting rights struggle, an increasing employment of women outside the home, and the rise of the Progressive and Socialist movements which advocated greater economic and political roles for women (Riegel 1970:240-306).

General educational theory also underwent radical revision in the late 1800s and early 1900s as the philosophies of Dewey, and other contemporary educational reformers focused less on student obedience and self-control, and emphasized creative expression and initiative (Finkelstein & Vandell 1984:78, 85). Although the Letchworth Park School was a rural institution, it appears to have adapted to and closely followed these general shifts in educational philosophy and social values which were intrinsic to the modernization of America.

### ARCHAEOLOGICAL TESTING

An archaeological survey team of two to three field assistants, a crew chief and a field supervisor conducted archaeological testing of the project area between November 18 and December 8, 1986. Surface reconnaissance of the area was not attempted because the entire area was obscured by forest vegetation and parking lot gravel.

Two forms of subsurface testing were employed. In the undisturbed wooded areas on the north and

south margins of the project, a total of 22 shovel test units were excavated (Figure 3). Shovel test units 12 X 12 inches (30 X 30 cm) in area were placed at 20 feet (6 meter) intervals on 4 east-west transects, and were excavated to depths of 12-20 inches (30-50 cm). Subsoil was reached and penetrated in all tests. Soil profiles were recorded and soil colors were compared against standardized Munsell (1973) charts. Excavated soils were carefully trowel-sorted for artifacts and bone refuse, and all shovel test pits were backfilled.

Shovel testing could not be employed for subsurface investigation of graded and graveled areas because of their extremely hard, compacted deposits. Park records suggested that the site of the schoolhouse lay largely within these areas, so a backhoe was used in excavating three opportunistically placed trenches for locating foundation walls and yard deposits (Figure 7). Walls which were exposed in these trenches, along with some interior features, were further cleaned and defined by troweling and brushing. Artifacts were provenienced within structural features in numbered excavation trenches. Few faunal remains were observed. All cultural features exposed in the excavation trenches were drawn to scale and photographed on black and white and color film.

### *Survey and Testing Results*

#### *Soils*

Sediments in the top 10 inches (25 cm) of soil profiles over most of the central project area were disturbed by grading and filling. In the wooded sections soil profiles typically consisted of a surface stratum of 4 to 14 inches (10-35 cm) of dark yellowish brown (10YR 4/4) sandy loam underlain by lighter yellowish brown (10YR 5/6) gravelly loam. Both soils are components of the Chenango Series of loams which form on 3-8% slopes on the western margin of Letchworth State Park. The project area was part of a farm before the school was built, and may have been under cultivation until the 1870s.

#### *Historic Period Remains*

Historic period artifacts were found almost exclusively within structural foundations. Only one shovel test pit-STP 1.2-contained artifacts; two fragments of green bottle glass and a fragment of coal (Appendix 2). Most of the recovered finds were iron nails and window glass fragments, reflecting the expected dominance of architectural remains in a non-domestic archaeological site. However, a scattering of Euroamerican ceramics, bottle glass fragments and unidentified iron objects may provide evidence of lunchtime picnicking or refuse dumping on the site. The artifacts were conserved and stored in the Research Division, Rochester Museum and Science Center.

Exploratory Trenches 1, 2 and 3 revealed mortar and cobble foundation walls of a rectangular building oriented east to west (Figure 7). The southern wall was fully exposed in Trench 1, which was 45 X 5.5 feet (13.7 X 1.7 m) in size. After initial clearing by backhoe, Trench 1 was hand troweled and divided into nine 5 X 5 feet squares, Units 1-9. Unit 1 contained the relatively intact junction of the south long wall and the eastern gable. Small sections of foundation were visible in Units 2-3, and it appears that the wall in this area was badly disturbed during the grading of the lot. Ash and mortar deposits in these units probably also date to the building's destruction in 1947. Better preserved stone alignments were uncovered in Unit 4, which also included a sheet iron stove pipe wall collar in the fill. Units 4-6 also displayed the highest density of brick fragments on the site. The best preserved wall segments appeared in Units 5-7, and Units 6 and 7 revealed the junction of the smaller rear portion of structure with the larger main room (Figure 16). In contrast, walls were poorly preserved in Units 8 and 9, although a large flat stone in Unit 9 may be associated with the western end of the southern foundation wall. If so, then the west gable of the rear wing may have rested on piers, rather than on a continuous stone footing. Throughout these units the subsoil, which was clearly visible along the wall exteriors, was dark yellowish brown silty gravel (Munsell 10YR 4/6), while fill and remnant occupational deposits were generally dark brown (Munsell 10YR 3/3) in color.

Trench 2, which ran north and south over 12.5 x 3 feet (3.8 x .9 m), revealed a feature of ash, broken brick, and oxidized earth in association with a steel plate in Unit 10. Trees prevented further northward extension of this trench.



**Figure 16.** Excavation Units 6 and 7; The Junction of the Main Schoolroom and the Back Wing (facing North).

The northern wall line was uncovered in Trench 3, which extended to the north from Trench 1, and covered 25.8 X 3 feet (7.9 X .9 m). Although the small section of wall which was exposed in Trench 3 Unit 11 was badly damaged by the backhoe, much of the north wall lies in the forested area outside of the graded area, and it appears to be substantially preserved. The remains of two chemical toilets, discussed further below, were found in Units 9 and 12, westward extensions of Trench 3.

The location of the wall lines, their reconstructed dimensions, and their associated late nineteenth and early twentieth century finds, all indicate that they are the foundations of the District #2 Schoolhouse of 1874. Dense layers of building debris within the wall lines suggest that demolition refuse was pushed inside the foundations when the lot was graded in 1947.

The feature exposed in Trench 2 Unit 10, consisting of a discoidal steel plate surrounded by ash, broken bricks and apparently oxidized subsoil, may be the displaced remains of the chimney and woodstove, which is also represented by the stovepipe wall collar found in Trench 1 Unit 4. Iron register slats found in several locations in Trench 1 were probably parts from the ventilation system in the chimney.

The excavations also exposed the school's indoor toilets, an area of the building which was poorly documented. The preserved remains of the toilets, which were attached to the western gable, consist of two steel barrels with small bore interior pipes which were crushed and caved-in during the post-demolition grading of the lot.

Although the stone foundations of the side walls apparently extended as far west as the barrels, no western foundation wall was preserved. The absence of a foundation wall on the back of the rear wing may be a secondary design feature to facilitate cleaning the chemical toilets, or the wall may have been destroyed when the building was bulldozed and the tanks were capped with gravel. In general, the westernmost area of the site appeared to have been thoroughly disturbed by post-abandonment grading, and therefore no further subsurface testing was employed to locate traces of the early privies or fence lines. In addition, these areas fell well outside the project limits.

It appears that very little occupational debris is present in primary contexts around the schoolhouse; in all of the excavation units subsoil was present directly under the post-demolition fill strata outside of the building foundations. Some apparently intact occupational deposits were located within the foundations, but much of the building remains have been extensively disturbed by demolition and lot resurfacing.

## SUMMARY

Excavations in Letchworth State Park, sponsored by the Genesee Region of the NYSOPRHP, revealed the fragmentary foundations of a schoolhouse built in 1874. The archaeological remains support the documentary record of the school, which was built by William P. Letchworth, and which was designed to be a model rural educational institution. Written records, combined with early photographs and oral testimony from former students and teachers, demonstrate that the Letchworth Park School underwent changes in its physical structure and patterns of use between its opening and the graduation of the last class in 1934. These changes appear to reflect the local impact of large-scale shifts in social attitudes and educational theories which were current in late nineteenth and early twentieth century America.

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## APPENDIX 1.1

from "Plans of School-Houses with One School-Room"  
by Henry Barnard  
(*Barnard's American Journal of Education* 1876 v. 26:302-304)

The site and ground contains about an acre in the form of a parallelogram, the shortest side being upon the road. The building itself stands about fifty feet from the road, and facing it. The soil is a gravelly loam, with good drainage; the situation airy, with delightful prospects about it. The ground is graded to a descent of one foot to twelve from the building in every direction to the distance of twenty feet. The house has three entrances; one a main entrance with double doors in front intended to be used only when the edifice is occupied for public meetings or school exhibitions. It has an entrance in the wing on the left for boys and upon the right for girls. The latter before reaching the entrance door pass through a gate in a high board fence which extends from the building at right angles to the limit of the ground, and from there encloses a small square play-ground exclusively for the girls, within which is a closet, the purpose of which is concealed by its being placed in the corner of a building used as a coal-house or woodshed. In



the opposite corner of the same building is placed the boys' closet, the access to which and the woodshed are from the outside of the yard. This shed, containing two closets, is placed directly back of the wing of the school-house at the distance of thirty-three feet. The fence referred to—a tight board one, picketed and seven feet high—extends between the wing and the shed. The rail bars of this fence have boards placed diagonally above the rail, so that little feet cannot get upon them or climb over from the rear of the yard. Into this yard the boys are not expected to enter. It is embellished with flowers and creepers planted in beds upon its borders.

The bottom of the sills of the school-house are two and a half feet from the ground, affording ample space for lighting a basement playroom, to be used in stormy weather or when the ground is muddy. Such a provision avoids any necessity for using the school-room as a play-house—a liberty which should never be allowed. The basement may also be used for storing extra seats required to be used at public meetings and exhibitions, and for placing a small furnace for warming the building. The main building is 20 X 30 feet, the wing 10 X 17 feet. The entrance halls or vestibules in the wing are 5 1/2 feet wide. They are each lighted by one window, and contain at the outer end cases of shelves standing on a five inch base with twenty numbered spaces or pigeon holes, 12 X 14 square and 14 inches deep. The outer doors to the vestibules, as well as the front door to the building, open outwardly, thus saving space within the building, and affording readier egress in case of sudden alarm. The front doors swing against posts on the platform to prevent straining the hinges. The teacher's room occupying the space between the girls' and boys' hall is 6 feet wide. It is lighted by one window, and contains two closets which occupy the space between the chimney and the side walls. In these closets or cases which are shelved and secured by doors and lock and key, are kept the district library and experimental apparatus belonging to the school. The chimney which is built from the bottom of the basement below, passes up through this room against the outer wall of the main building, being entirely independent of it except that it passes through the cornice at the ridge. It contains two flues, one for fire and the other for ventilation of the schoolroom. It has two registers in the school-room, one at the base of the room and the other near the ceiling. The teachers room is entered by a door on each side two feet four inches wide.

If occupied by a male teacher, the door on the girls' side is kept locked, if a female teacher the opposite door is secured. The room is lighted by one window. It affords space for a small table or desk, a washstand and lounge. The ceilings in the wing are nine feet and in the school-room eleven and half feet high. Each window contains twelve lights, ten inches by twelve. There are eight windows in the main schoolroom, of twelve lights, each ten by fifteen inches, three on each side and two in front. All the sashes in the building are hung upon pulleys, and balanced with weights. This is a feature which should be identified with every school-house, as better ventilation is secured by the facility with which windows are raised and lowered and adjusted to the precise needs of the time, by the slightest touch of the hand.

There are four rows of single desks—a greater number can be used. It is now universally conceded that single desks are better than double, as by their use better discipline is sustained, and consequently greater proficiency in studies. Less interruption occurs where each scholar holds an isolated position. An industrious scholar placed beside an indolent one at the same desk, may lose the benefit of instruction during the whole term, by reason of his close proximity to a profitless and possibly mischief-making companion.

The walls of the school-room are wainscoted vertically two feet ten inches from the floor. A platform five feet eight inches by eight feet wide and two feet four inches high, is located between the two entrance doors of the school-room. Two feet two inches above the platform is placed the blackboard, filling the space between the two doors. It is five feet high, and made by gluing a coat of manila paper upon the hard-finished plaster wall, and coating the manila paper with ground slate made into a paste applied by means of a brush. A strip of molding is secured against the rim of the blackboard over the paper to keep the outer edge from becoming detached from the plaster. The teacher's desk occupies the central position upon the platform. The space upon either side of the platform is occupied by a few chairs for visitors. The floor of the school-room is made of one and one quarter stuff, and lined underneath with tarred roofing paper. The sides of the building are sheathed with one-inch hemlock boards, covered with a coating of tarred roofing paper, under clapboards. The attic joists above are covered with a double floor of common boards, between which is also laid a coating of tarred paper. As the attic has thorough ventilation the building is cool in summer and warm in winter. The using of tarred paper to complete the enclosing of the heated space in the building as has been done here, is but a trifling expense, and is strongly recommended. The inner doors

of the building are paneled; all the outer doors are made of two thicknesses of narrow inch stuff battened. The double doors in front are two and a half feet wide and seven and a half feet high. The rear outside doors are two feet eight inches wide and of the same height. The platforms before the entrances are capacious, being six feet by eight, and rest upon the chestnut pole set three feet into the ground. The steps have but seven inch rise. The advantage of having entrances as planned in this building is that the pupils face the school upon entering it, thus causing less interruption than where the entrance is at the back of the pupils already seated who cannot be restrained from at each opening of the door from turning to look at the incomer. By this arrangement also the pupil sits with his back to the two large windows in the end of the building, and gets the benefit of light over his shoulder. The side blinds may be closed so that on a bright day all the light may come from that direction tempered agreeably to the eye. When the boys leave the school-house, they enter at once upon their play-ground in the rear, away from the road, while the girls enter at once their private play-ground, and can use the conveniences connected therewith in that seclusion which the natural delicacy of the sex requires, and which should not only be observed, but encouraged. The vestibules of these entrances, in case of school exhibitions or other public occasions which are of frequent occurrence in an enterprising district, may be used for retiring rooms. The platform may be converted into a stage by the simple process of putting up curtains. The audience enters at such times by the main entrance of the building, which is thus found at once to possess the convenience of a concert hall of the city. Important also is the facility under this plan by which the building may be transformed into a place of public worship, with its vestibule an entrance hall more cleanly from less frequent use.

This commodious little structure while having all the desirable features of a school-house, may be said to be in miniature an exhibition room, town hall, and church. Its cost in the Western part of New York may be set down in round figures at Fifteen Hundred (\$1,500) Dollars. By judicious expenditure this may be made to include seats and desks, a small furnace for heating, a bell, and three coats of paint.

This building was erected and equipped at the sole expense of Hon. William P. Letchworth, of Buffalo, a member of the New York State Board of Charities.

#### APPENDIX 2.1 ARTIFACT INVENTORY

##### STP 1.2

###### Kitchen Group

2 fragments green bottle glass

###### Activities Group

7 fragment coal

##### STP 2.4

###### Architectural Group

1 wire 20d. nail

##### Trench 1 Unit 2

###### Kitchen Group

1 piece brown bottle glass

###### Architectural Group

1 square cut 4d. nail

1 wire 6d. nail

2 square cut 10d. nails

2 square cut 30d. nails

##### Trench 1 Unit 4

###### Architectural Group

1 wire 8d. nail

1 fragment clear window glass

##### Trench 1 Unit 5

###### Architectural Group

2 square cut 4d. nails

- 1 square cut 6d. nail
- 2 wire 8d. nails
- 2 square cut 10d. nails
- 2 fragments clear window glass

Personal Group

- 1 fragment umbrellaa rib

Trench 1 Unit 6

Architectural Group

- 1 square cut 4d. nail
- 3 square cut 8d. nails
- 1 wire 10d. nail
- 2 square cut 12d. nails
- 9 fragments clear window glass

Trench 1 Unit 7

Kitchen group

- 1 fragment clear bottle glass (19th century pharmaceutical?)

Trench 10 Unit 10

Kitchen Group

- 1 fragment undecorated ironstone cup
- 6 fragments clear glass tumbler
- 5 fragments clear bottle glass
- 5 fragments aqua bottle glass

Architectural Group

- 4 square cut 4d. nails
- 1 square cut 6d. nail
- 5 square cut 8d. nails
- 4 square cut 10d. nails
- 1 iron fragment, possible hook
- 1 fragment iron edge strap
- 27 fragments clear window glass

Trench 3 Unit 1

Tobacco Pipe Group

- 1 fragment kaolin fragment (mouthpiece)

Trench 1 General Recovery

Kitchen Group

- 1 fragment undecorated whiteware
- 1 fragment brown bottle glass (recent)
- 1 fragment refuse bone, large mammal rib

Architectural Group

- 1 square cut 4d. nail
- 2 wire 6d. nails
- 1 square cut 6d. nail
- 1 wire 8d. nail
- 12 square cut 8d. nails
- 4 wire 12d. nails
- 15 square cut 12d. nails
- 2 square cut 30d. nails (1 broken)
- 4 fragments clear window glass
- 3 iron ventilation register slats

Activities Group

- 1 incomplete iron pipe wrench
- 2 iron band fragments

Trench 2 General Recovery

Kitchen Group

2 fragments clear bottle glass

3 fragments blue bottle glass (pharmaceutical?)

Architectural Group

1 square cut 4d. nail

6 square cut 8d. nails

6 square cut 10d. nails

10 fragments clear window glass

Trench 3 General Recovery

Kitchen Group

1 fragment decorated whiteware

2 fragments clear bottle glass

1 fragment aqua bottle glass

1 fragment blue bottle glass (pharmaceutical?)

Architectural Group

2 square cut 10d. nails

**THE SHARROTT ESTATES PREHISTORIC SITE,  
SANDY GROUND NATIONAL REGISTER DISTRICT  
STATEN ISLAND, NEW YORK**

Edward J. Lenik

Orange County Chapter

**INTRODUCTION**

The Sharrott Estates prehistoric site is located within the Sandy Ground National Register District in the Woodrow section of southwestern Staten Island, New York. Specifically, the site is 300 feet (91.4 meters) west of Bloomingdale Road and between Clay Pit Road on the north and Sharrott Road on the South (Figure 1).

In September and October 1982, a Phase I cultural resources sensitivity survey of the proposed Sharrott Estates housing development was conducted by Archaeological Research Consultants of Midland Park, New Jersey. The results of this survey revealed the existence of a prehistoric site in one section of a proposed housing development. Specifically, two loci of chert flakes considered to be of aboriginal origin were found along the eastern edge of the Sharrott Estates property, between Sharrotts Road and Clay Pit Road (Cotz and Lenik 1982: 12, 26, 28).

The first artifact cluster was located along the eastern border of the property and consisted of two prehistoric chert flakes found on the surface of the ground and two additional chert flakes which were recovered from a one foot by one foot (30.5 cm x 30.5 cm) shovel test. The second artifact cluster was found approximately 50 feet (15.2 meters) to the north of the first. Two chert flakes were found on the surface at this northern locus. One shovel test was excavated at this locus but the result was negative. The 1982 survey report recommended additional testing in both areas in order to define the nature and extent of prehistoric occupation of the site. In April and May 1983 archaeological test excavations were conducted within this site. The results of this Phase II site testing work is presented below.

The prehistoric site is located in the northeast portion of the Sharrott Estates/Sandy Ground project area. It is a rectangular section of land measuring 75 feet (22.8 meters) in length by 50 feet (15.2 meters) in width and borders the eastern edge of the proposed housing development between Sharrotts Road and Clay Pit Road. This sensitive zone of potential prehistoric occupation encompasses an area of 3,750 square feet and was intensively examined and tested.

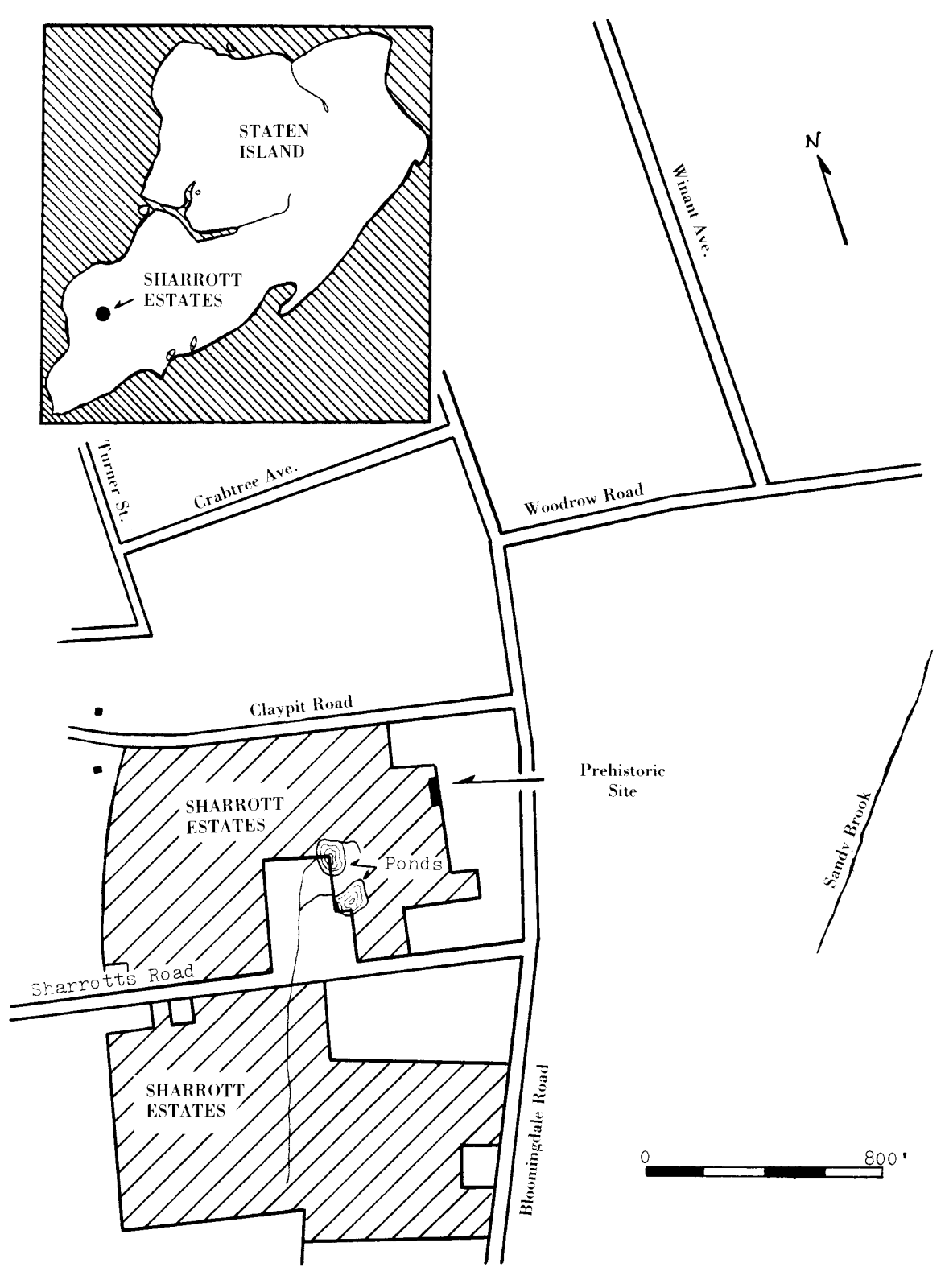
**ARCHAEOLOGICAL RESEARCH DESIGN**

The stated purpose or research design of this Phase II archaeological testing program was threefold:

1. To assess the nature of prehistoric occupation within the site. That is, to identify the type of settlement, subsistence or other activities engaged in at the site,
2. To determine the extent of prehistoric occupation at the site and to establish its placement in time, and
3. To locate, recover and record cultural features and artifacts through archaeological excavation and intensive surface collecting.

The archaeological sampling strategy that was utilized at the site included the following methods and procedures:

First, a total of thirteen (13) 3 ft X 3 ft (.9 m X .9 m) squares was excavated within the area. Of this total, eight units were excavated around the first artifact cluster called Locus 1, and four units were excavated around the second cluster, or Locus 2, at the northern end of the parcel. One (1) additional 3 ft X 3 ft (.9 m x .9 m) square was excavated between these loci (See Figure 2). Each 3 ft x 3 ft (.9 m X .9 m) square was excavated separately in arbitrary two inch (5 cm) levels to culturally sterile depths. Small trowels, dustpans and brushes were the most commonly used tools and all soil from the excavation



**Figure 1.** Location of Sharrott Estates Prehistoric Site.

was screened through a 1/4 inch hardware cloth screen. Each artifact recovered from the site was bagged according to its vertical position or level within each square.

Secondly, the eastern edge of the property served as a north-south base line for the site. From this baseline, a series of 15 transects was laid out from east to west across the site. These transects were 50 feet (15.2 meters) in length by 5 feet (1.5 meters) in width. Each of these transects was intensively surface collected in an attempt to find additional surface artifact clusters or other evidence of prehistoric occupation. Any surface artifact recoveries were recorded and bagged according to these units.

Finally, we examined and analyzed the prehistoric artifact collection made by a local collector from a site along Sandy Brook to the east of Bloomingdale Road. This site has already been destroyed by a housing development. However, due to the close proximity of this Sandy Brook site to the Sharrott Estates Site, we felt it was possible that there might be some relationship between the two, or that it could provide us with some comparative data.

### ENVIRONMENTAL SETTING

In order to understand the nature of the site, it is necessary to consider its physical environment and its relationship to the prehistoric human settlement system. The Sharrott Estates/Sandy Ground area in southwestern Staten Island is considered to be a part of the Coastal Plain physiographic province which consists of a unique combination of geological formations, soils, and landforms. The geological history of the coastal plain begins about 135 million years ago with the deposition of marine sediments during the Cretaceous Period of the Mesozoic Era. During this time numerous large scale fluctuations in sea level occurred which caused periods of submergence and emergence together with episodes of sedimentation and erosion (Widmer 1964:89-144). Thus, Staten-Island developed as a result of marine sedimentation.

The sediments of western Staten Island in general, and our project area in particular, are comprised of clays, silts, sand and gravels of Cretaceous age which are overlain by similar deposits of Pleistocene age. The soils are generally fine in texture, and subsoils are predominately clays and loam. Coastal Plain soils have a high available water capacity and good moisture retention because of the presence of large quantities of clay minerals. The archaeological excavations at the Sharrott Estates Site clearly reflected this geological feature. As a result of leaching, the more soluble bases have been lost from the soil and therefore they are extremely acid.

In general, the environmental conditions on the Coastal Plain of western Staten Island has not changed significantly during the time of human habitation of the region. Beginning about 3,000 years ago the climate and landforms as well as the flora and fauna had begun to approximate their present configurations (Salwen 1975:55). The soils of western Staten Island were covered in former times with extensive stands of mixed hardwoods. However, because of the high natural fertility of the soil much of the land in the project area has been cleared of its native vegetation for agricultural use, as well as for domestic and industrial development. By the beginning of the seventeenth century, evidence suggests that extensive forest clearance had already taken place in the northeastern United States prior to the extensive European settlements. It was an almost universal northeastern Indian practice to annually burn sections of the forest and underbrush to enhance hunting activities. This practice plus horticultural clearing by the Indians created an open park-like character in the forests (Salwen 1975:62-63).

In 1963, a disastrous fire reportedly engulfed much of western Staten Island including the Sharrott Estates/Sandy Ground area. This event markedly changed the physical characteristics of the landscape. The physical evidence and results of this fire are clearly visible in the zone around the site. There are no "old" trees in the area and several burned-out stumps were observed in the dense growth south of Clay Pit Road. The landscape appears to be marred with vehicle tracks and bulldozed piles of earth which may be the result of the 1963 fire-fighting activity.

Most of the site is a flat open field with some grass or scrub-brush growth. The trees in the immediate area surrounding the site are of very recent growth and the predominate species are white birch, oak, gum, and maple. During this archaeological study, pheasants, woodcock, and a variety of other bird species were observed in the area. The topography of the site slopes gently and almost imperceptibly from east to west and the site is at an elevation of approximately 115 feet above mean sea level. Much of the

site had been stripped of its topsoil cover and numerous bare spots were evident. The visible subsoil is a fine tan-orange colored sand and water erosion of the site seems to be an on-going process in the area. Two post glacial ponds are located approximately 300 feet (91.4 meters) west of the site. These ponds, together with adjacent swampy areas and small feeder streams would have provided a supply of potable water for human populations. The ponds would also have served as a potential food resource area particularly in the form of annual migrations of waterfowl. In the course of our field work we observed the presence of several large turtles as well as some fish in the northern-most of the ponds.

### ARCHAEOLOGICAL EXCAVATIONS

A north-south baseline was established along the eastern edge of the Sharrott Estates/Sandy Ground property and sections of the site were gridded in a series of 3 ft x 3 ft (.9 m x .9 m) squares to the west of the base line. As stated earlier in this report, eight squares were excavated around Locus #1, four around Locus #2, and one square, locus #3, was excavated between the two. A description of the soil stratigraphy and artifacts recovered from each of these areas is presented below.

In order to learn the nature of site utilization in this area, the excavation strategy chosen was to hand trowel each square in arbitrary 2 inch (5 cm) layers. The objective of this approach was to expose cultural features which would be highly visible on each resulting surface. The 3 ft x 3 ft (.9 m x .9 m) test units were to be expanded if features were encountered. However, no cultural features were found in the excavations at this site. Furthermore, it must be emphasized that the initial survey and testing in 1982 revealed that the area was highly disturbed by both human and natural agencies.

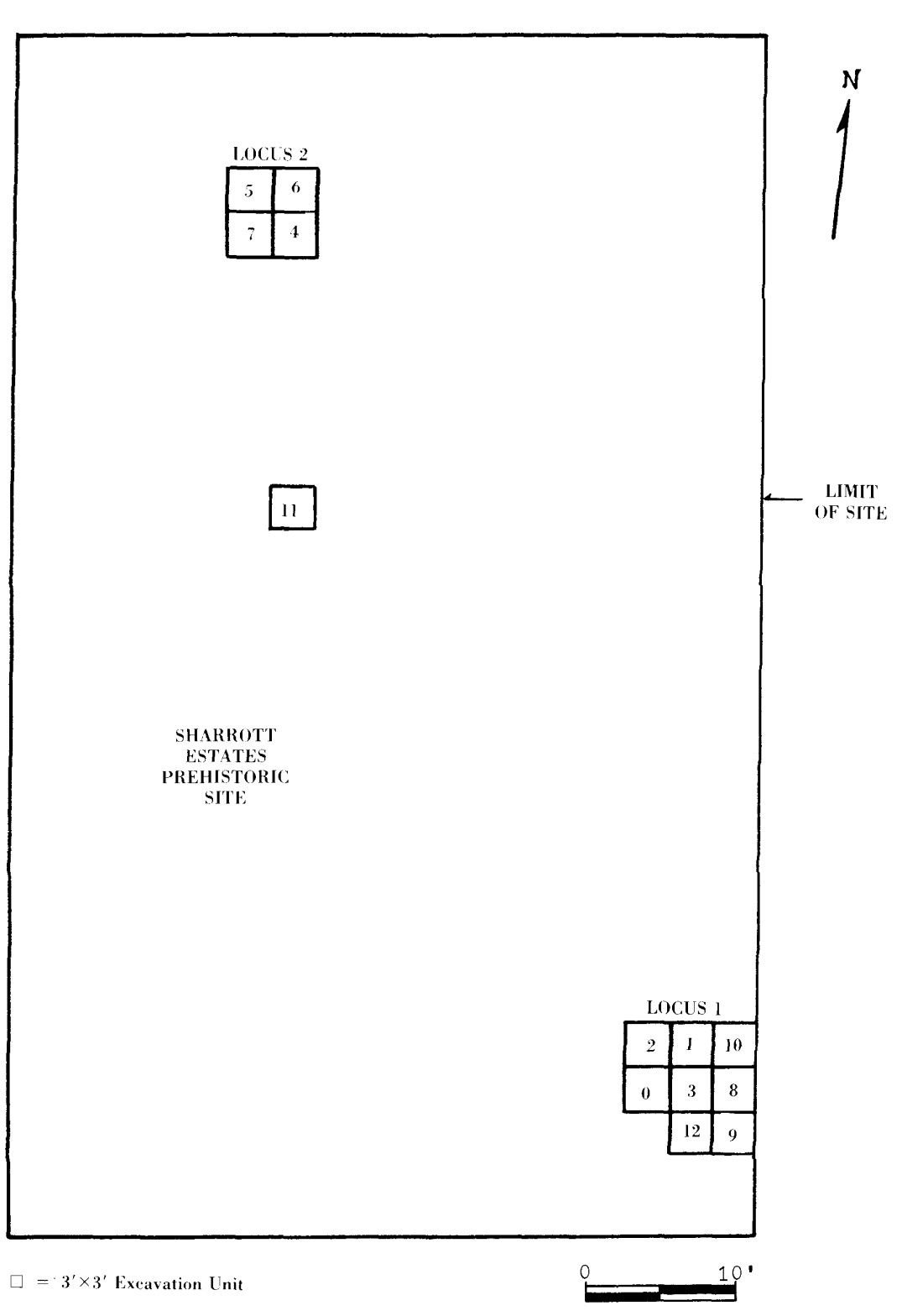
Locus # 1: All of the eight squares excavated in this section revealed the same stratigraphic pattern. The squares in this location were numbered 0, 1, 2, 3, 8, 9, 10, and 12. All of these units were excavated to a maximum depth of 32 inches (81.3 cm). Essentially, there was only one soil horizon present, a deep deposit of sand primarily of a tan-orange or brown-orange color. Only a few small rocks and pebbles were found within this sand horizon and occasional root disturbance was revealed. Water was encountered at a depth of 10 inches to 12 inches (25.4 cm to 30.5 cm) within each square and this necessitated pumping in order to continue the excavations to a deeper level.

Prehistoric artifacts were most common in the upper 12 inches (30.5 cm) of the tan-orange sandy soil horizon. Never-the-less, they were also found in the lower levels but in rapidly decreasing amounts. The artifact finds consisted almost entirely of lithic debitage, that is, the stone waste material from the prehistoric tool manufacturing processes. A few stone tools, most of them fragmentary, were found as well and these recoveries were concentrated in the upper levels. A description of these specimens will be presented later in this report.

Some soil erosion appears to have occurred within the site and there are several factors which can account for this natural event. First, the topography slopes gently from east to west. The highest elevation is 125 feet (38 meters) above msl in the area adjacent to the A.M.E. Church on Bloomingdale Road sloping down to around 115 feet (35 meters) above msl within the site. The church is located some 300 feet (91.4 meters) to the east of the site. Also, a considerable amount of dumping has taken place throughout the entire area. A variety of 20th century garbage and debris is scattered around the site. This dumping together with the lack of ground cover and the natural occurrences of wind and rain has greatly disturbed and contaminated this prehistoric site. Admixtures of coal, slag, glass, pieces of metal, historic ceramic fragments and other recent cultural debris were found in all excavation units in association with the prehistoric material. For examples, pieces of coal were found in nearly all 2 inch (5 cm) levels down to a depth of 20 inches (50.8 cm) below the surface.

It is an obvious fact that the archaeological record is produced by human behavioral as well as natural environmental processes. Human activity is, of course, the basic contributor of cultural material to an archaeological site. Never-the-less, natural site formation processes occur during and subsequent to the deposition of cultural material which may alter the arrangement and inventory of artifacts at the site. The processes of sedimentation and erosion together with the freezing and thawing of soils, rodent activity, and tree root disturbance all serve to displace artifacts from their original contexts both laterally and vertically. It is evident that some of these processes have taken place within the site. Erosion, or the wearing away of the ground surface, has probably caused a downward movement of some cultural material within the site. The downward flow of water over the surface of the site would tend





**Figure 2.** Plan of Excavation.

to move lighter small stone flakes further and more quickly than larger more dense objects. No large stone tools or artifacts such as hammerstones or anvils were found at the site. This suggests that some displacement of stone debitage from its original context, caused by fluvial action, may have taken place at the site.

Locus #2: Four (4) 3 ft X 3 ft (.9 m X .9 m) squares were excavated in the northern portion of the site. These squares were numbered 4, 5, 6, 7, and all of them were excavated to a total depth of 32 inches (81.3 cm).

The soil stratigraphy in Locus #2 is identical to that found throughout the site. Once again, there was no topsoil cover in this area and the soil consisted of one horizon, a fine sand with virtually no rocks or pebbles. There were no obvious stratigraphic breaks within this sand horizon although some slight differentiation in color was observed. In general, the top 10 to 12 inches (25.4 cm to 30.5 cm) was a brown-orange colored sand which graded into a lighter tan-orange color at deeper levels. The water table was encountered at a depth of 16 inches to 18 inches (40.6 cm to 45.7 cm) in this area, and we had to pump the water out in order to continue excavations to deeper levels.

Prehistoric artifact recoveries in Locus #2 were extremely sparse. These artifacts consisted entirely of stone debitage and three fire cracked rocks. Most artifacts were recovered from soil levels C and D, that is between depths of 4 inches and 8 inches (10.2 cm and 20.3 cm). In fact, all the artifacts were recovered from within the top 18 inches (45.7 cm) of each square as the lower levels were completely sterile. *No features* were encountered in squares #4 through #7. As was the case in Locus #1, several pieces of coal, slag, glass, shell, metal and historic ceramic fragments were found in the upper levels in association with the prehistoric waste flakes.

Locus #3 consisted of one 3 ft X 3 ft (.9 m X .9 m) square which was located between the two major areas of excavation. The test unit was designated as excavation unit number 11 and was excavated to a depth of 30 inches (76.2 cm).

The soil in excavation unit number 11 was a tan-orange colored sand. Several prehistoric waste flakes were recovered from this unit with most of the finds occurring in the top 6 inches (15.2 cm) of sand. No artifacts were found below a depth of 14 inches (35.6 cm) below the surface, and no features were revealed in this test.

Finally, several additional prehistoric artifacts were recovered from the surface of the ground during our intensive examination of the 50 ft X 5 ft (15.2 m X 1.5 m) transects within the site. A total of eight waste flakes were found in the northern third of the site in areas adjacent to the excavations in Locus #2 and Locus #3. These flakes were simply scattered finds with no clusters indicated by their horizontal distribution over the landscape. No features or stone tools were found in this careful foot-by-foot search of each transects.

### LITHIC ANALYSIS

As we have already indicated, the overwhelming majority of the artifactual material recovered from the excavations was lithic debris. Only a few projectile points or stone tools were found. The lithic debris from the site was carefully examined and analyzed. The debitage from each excavation unit was separated into categories based on type of stone and type of flake. Six (6) varieties of raw material including chert, jasper, quartz, argillite, quartzite, and sandstone were found to be present. These are listed with their frequency of occurrence by type of flake in Table 1.

Nearly all of the debitage from the site consists of small flakes and chips. One chert and one quartzite core that appear to be worked were also found. The total quantity of lithic debitage numbers 771 specimens. The majority of this material consists of biface trimming flakes which totaled 566 fragments. There are also 152 primary flakes in the collection and 51 cortical flakes.

The analysis of debitage concentration reveals that Locus #1 is an area of especially high density. The reason for this is not entirely clear. The ground slopes more sharply in this area and perhaps the run-off of rain water and erosion, from east to west, accounts for some of this material.

It is interesting to note that in 1982, four (4) primary waste flakes were found in surface and subsurface contexts in Locus #1, and two (2) primary flakes were found on the surface of Locus #2. Nine (9) more primary flakes were found on the surface of the site in 1983. One might expect that these primary

**Table 1.** Analysis of Lithic Debitage

Material	Cores	Cortical Flakes	Primary Flakes	Trimming Flakes	Total Quantity
Jasper	—	29	18	138	185
Jasper (Heat Treated)	—	1	3	12	16
Chert	1	17	54	244	316
Chert (Heat Treated)	—	2	3	9	14
Quartz	—	1	46	150	197
Argillite	—	—	28	13	41
Sandstone	—	1	—	—	1
Quartzite	1	—	—	—	1
Totals	2	51	152	566	771

flakes would be representative of the material to be found below the surface. Clearly this was not the case as the vast majority of artifact finds were very small trimming flakes. The disproportionate occurrence of "large" artifacts on the surface of sites is due to a number of factors both human, such as the re-use of raw material, and natural such as erosion. This phenomenon is known as the "size effect" (Baker 1978:288-293) and our findings in the Sharrott Estates Site indicate that the surface artifact collection was not representative of the site's total artifact inventory.

The analysis of the lithic debitage from the site indicates a preference for chert on the part of these prehistoric toolmakers. Our analysis shows that chert accounted for 43% of the total finds with jasper making up 26%, quartz 25%, and argillite 5%. These raw materials were probably secured from local sources on Staten Island. Chert, jasper, and quartz pebbles are available from streams and gravel banks in the general area of the site. Such deposits are known as Pensauken Gravel, a Pleistocene fluvial deposit that includes brown and tan jaspers and black to light gray cherts (Lavin and Prothero 1981:14).

Our examination further shows that some of the waste flakes, a total of 30 specimens, were subjected to heat or thermal alteration. Experiments have shown that the heat treatment of jasper improves its workability by reducing its fracture toughness and this is accompanied by a brown to red color change (Sehindler, Hatch, Hay and Brandt 1982:526-544). However, we are unable to say whether this was a deliberate and conscious act of the prehistoric toolmakers at the site, on whether the flakes were altered by the forest fire which occurred in this vicinity in 1963.

One complete projectile point was recovered from Excavation Unit (E.U.) number 0, level C, in Locus #1. This specimen was a triangular point made of black chert which measured 27 mm X 26 mm X 4 mm. It is a Levanna style point which dates from the Middle to Late Woodland Period or c.AD 700 to AD 1600 (Ritchie 1971:31). Two broken Levanna style projectile points were also found in Locus #1. One of these broken specimens is made from gray chert and was recovered from E.U. #3, level D. The tip of the point and one of its tangs are missing and thus accurate size measurements cannot be made. The second broken specimen was found in Excavation Unit number 2, level A and it was made of white quartz. Its tip is also broken and missing and it measures 17+mm X 22 mm X 5 mm.

Only one recognizable stone tool was recovered from the site. This specimen was a utilized flake of brown jasper which was recovered from Excavation Unit number 10, level B, in Locus #1. In addition, seven biface fragments made of chert, jasper and quartz were recovered from within Locus #1 as well. These biface fragments probably represent shattered or broken projectile points but we cannot state this with certainty.

Finally, four pieces of fire cracked rock were recovered from the site. One specimen was found within Locus #1 at a depth of 2 feet (.6 m) below the surface. Three specimens came from Locus #2 from depths ranging from 4 to 12 inches (10.2 cm to 30.5 cm) below the surface.

#### SUMMARY AND INTERPRETATIONS

The vast majority of flakes recovered from the excavations averaged around 3/8ths of an inch (1 cm) in length. This clearly indicates that most of the lithic manufacturing activity at the site was directed

toward tool modification, that is, trimming and marginal retouching. The analysis of the debitage strongly suggests that the lithic activities were primarily concentrated on the late stages of tool manufacturing or in the maintenance or refurbishing of previously completed items. The chipping debris suggests that most of the lithic material was brought to the site in a blank, preform or completed stage of manufacture. The low frequency of cores, and cortical and primary flakes lends weight to this conclusion.

The lithic inventory and paucity of finished artifacts leads to the conclusion that the site was probably an occasional hunting camp that was occupied sporadically during late Woodland times. The refurbishing of prehistoric tool kits was the primary activity at the site. The three (3) projectile point finds plus the one utilized flake which may have been a game processing tool strongly suggests a hunter's camp. Negative evidence also reinforces this interpretation as no other tools or features were found. The sandy soil at the site is such that post holes, storage pits or other features would have been obvious in the excavations had they existed. In summary, the site experienced short, intermittent utilization by small mobile groups of hunters who probably took advantage of the nearby ponds and the adjacent habitats as sources of game.

A large prehistoric base camp formerly existed on the west bank of Sandy Brook, a short distance to the east of Bloomingdale Road and the present Sleepy Hollow inn. This campsite was surface hunted by a local collector over a period of six years prior to its destruction by a housing development. Our brief examination of the collection from the Sandy Brook Site indicates that this site was occupied from late Archaic through Woodland times (c. 4,000 BC to AD 1600).

The Sandy Brook collection includes 17 chipped stone tools such as Bare Island and Teardrop style projectile points of the late Archaic period and Levanna and Madison points of the late Woodland period. The drills were also noted in the collection plus one full-grooved axe.

The intensity of occupation at the Sandy Brook site was clearly during Middle to Late Woodland times as indicated by several hundred pieces of pottery which were recovered. The pottery was decorated with several incised and cord-marked motifs. One prominent pottery style in the Sandy Brook collection is Bowman's Brook Incised which dates to the middle Woodland period. The collection further includes thousands of fragments of debitage but these items were not examined and analyzed.

The Sandy Brook Site is less than one-quarter of a mile (1608 meters) away from the Sharrott Estates prehistoric site. Our examination of the collection gives us a broader and more complete picture of prehistoric occupation in the area. Perhaps the temporary workshop and hunting camp within Sharrott Estates is somehow related to the Sandy Brook site, perhaps functioning as a "satellite" camp. The close proximity of the two sites plus their contemporaneity suggests this as a possibility.

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## THE PAUL SITE: INLAND UTILIZATION AT OLD BROOKVILLE, LONG ISLAND

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### INTRODUCTION

The Paul Site evidence suggests utilization, possibly occupation, of the interior during the Woodland Period on Long Island. The majority of Long Island archaeology has concentrated on settlements in the coastal zones:

The inland regions have not been subject to many extensive, systemic surveys. Some information on these zones has come from collectors. Inland sites on Long Island are typically characterized by a low-density of artifacts [Vetter et al 1978: 408].

The need for additional research has been addressed by Wyatt (1977: 408):

Investigations of some of the less disturbed inland sites may reveal that they were stations on the seasonal round, and that many of these localities were the scene of food procuring activities from the late Archaic times up into the 17th century . . . The effort is essential if an adequate knowledge of Archaic and later subsistence and settlement patterns on Long Island is to be developed. At present, the archaeological data are highly skewed, emanating almost exclusively from coastal shell middens.

Given this situation, this contribution is essential to the archaeological record of Long Island.

The Paul Site, located immediately south of Valentine Lane in Old Brookville (Figures 1 and 2), is nestled in a hilly, irregular terrain through which Cedar Swamp Creek flows. The headwaters of Cedar Swamp Creek, one of the larger water drainages in Nassau County, begin south of the site and flows approximately 4.5 miles (7.14 km) northward before emptying into Hempstead Harbor. Four ponds and a marsh are situated in the immediate vicinity of the site. Although farming has contributed to leveling off the landscape in the general area of the site, the marsh to the north (Clark Sanctuary) and land along the creek to the west remain heavily foliated.

The Nassau County Museum was informed of the possible site in this area after a Paul family member discovered projectile points on a low rise of land that overlooked the swamp. Given the inland location and the possibility of retrieving cultural material, museum archaeologist Ron Wyatt decided that the area was worthy of exploration.

### HISTORY

The available literature and maps reveal a continuous Euro-American occupation of the area since at least 1836. The 1837 Atlas reveals that Valentine Lane was already a roadway and that the creek/swamp/pond network was extant. The Walling 1859, Beers 1873, Wolverton 1891, Hyde 1896, and Hyde 1906 maps indicate a Valentine family ownership of the property during this period. It is not until 1914, as revealed by the Hyde map, that a cluster of buildings first appear on the property. The Paul family purchased the property in 1915.

### EXCAVATIONS-1973

Archaeologist Ron Wyatt sampled the Paul Site in 1973 by employing a strategy of excavating eleven 5 x 5 foot units (275 square feet) coupled with scattered test shovel cuts approximately 1.0 feet in diameter and 1.09 feet deep. The excavation grid was oriented primarily along a northward grid that emanated out from datum (E0N0). Only three of the eleven squares excavated were not situated along this plane. In general, those squares located nearer to datum were opened first. When square E0N60 (the northernmost square up to this point of the excavation) began yielding increasing quantities of flakes, the sampling

strategy involving shovel cuts was employed. Cuts were made along an east-west grid that dissected the northward excavation grid at 65 feet (19.8 cm) north of datum. Shovel cuts also extended northward along the excavation grid. None of the shovel cuts revealed a concentration of cultural material, but two additional squares were opened north of square E0N60 nonetheless.

Excavation proceeded along lines of natural stratigraphy. The stratigraphy comprised two layers: a brown clay loam with gravel (layer 1), and a yellow sandy loam with gravel (layer 2). Layer 1 ranged in thickness between 0.61 feet and 1.0 feet (18.6 and 30.5 cm). Plow marks and associated mottling were observed in layer 1 at 0.7 feet (21.3 cm) below surface level. Excavation into layer 2 was terminated at an average 1.09 feet (33.2 cm) below surface level. The shovel cuts revealed the stratigraphy below the 1.09 foot (33.2 cm) mark as the same yellow sandy loam that characterized layer 2. The pH factor of layer 1 was 5.4; that of layer 2 was 5.7.

Cultural levels could not be distinguished given the disturbance to the site. Layers 1 and 2 would typically yield an association of both historic and prehistoric materials. The majority of all material was recovered between depths of 0.3 feet (9.1 cm) and 0.6 feet (18.3 cm) from surface level. Little material was recovered from layer 2 which, no doubt, influenced the shallow depth at which excavation ceased.

A single feature was discovered at the Paul Site. Of this, we quote directly from the Field Record Form dated 27 August 1973:

At 99.46 elevation, [we] found a single definite post mold. [The] top of the post mold showed up at the top of layer 2. [The] post mold is 0.22 feet in diameter at [the] top and contracted toward a rounded end 0.40 feet below [the] point where first noted.

An excerpt from the field notes dated the same day revealed the importance assigned to this feature and how the archaeologist's strategy of excavation changed.

The top of layer 2 should be checked for additional postmolds; other squares should be deepened a little to facilitate recording stratigraphy.

The feature was profiled and the square containing it backfilled on 28 August 1973, the very next day. Two days after discovery of this feature, excavation closed. Additional post molds apparently were not discovered. The origin of the feature and what it represented remains unknown.

#### SURVEY-1974

The Nassau County Museum returned to the Paul Site one year later in response to the discovery of a projectile point by a family member. The survey of 1974 considered land north of the excavation and nearer the Clark Sanctuary. Shovel cuts were randomly scattered along the southeast periphery of the marsh and into the hilly terrain of the immediate vicinity (Figure 2). The recovered historic and prehistoric material often shared the same geological matrix, being both scattered and too few in number to warrant additional investigation. The Museum concluded that the area was considerably disturbed and what remains is but a remnant of aboriginal exploitation.

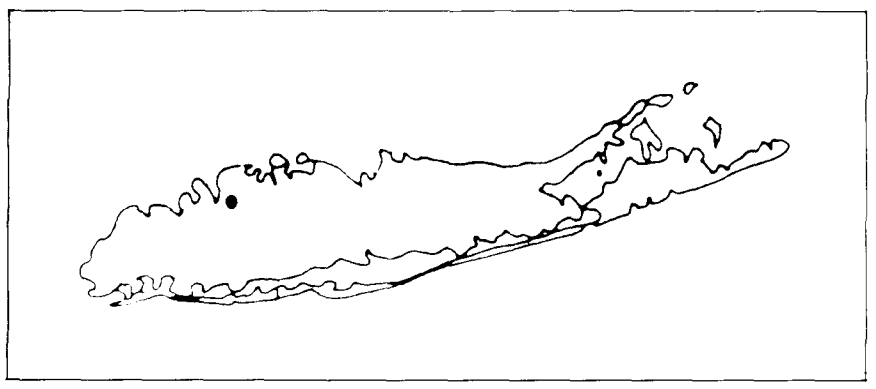
#### PREHISTORIC MATERIALS

The prehistoric assemblage consists primarily of lithic materials. Strikingly apparent, and this appears in the field notes dated August 19, 1973 (day 3 of the excavation), is the high percentage of exotic materials. This point is one to which we will return later in our discussion.

The site yielded 14 projectile points of which eight were fashioned from quartz, five from chert, and one from argillite. Five of these points (three quartz and two chert) are of the Levanna type. The remaining points consist of four mid-section fragments, two tip fragments, and three basal fragments. Two of the basal fragments reveal side-notching and the third a constricting stem. The base width of all basal fragments is smaller than its shoulder width.

The *Unmodified Flakes* category had 617 examples or 93.8% of the total lithic inventory. Different stages of production (primary, secondary, and tertiary trimming) are represented in the count. Quartz (473) and Quartzite (9) flakes represent 78% of this category and were probably procured from local resources. The exotic materials, chert (123) and argillite (12), are well represented in the total count.

The *Amorphous Stone* category is material which has been worked on one or more sides but is not



**Figure 1:** Map of Long Island. Site area represented by black circle.

characteristic of any perceivable artifact type. There is no indication of edge wear on any of these items. Half the specimens still retain cortex and are often larger in size than those which do not. Items which reveal multi-faced working yield the impression that the knappers did have a particular objective in mind. Quartz (21) and chert (4) are represented in this category.

The presence of edge wear defines our Use-Modified Objects category. Two such items were recovered from the site. The first, a slate specimen 68.1 mm by 30.9 mm large, reveals scratch marks on both surfaces which do not appear to have been purposely made. One edge of the item has been ground smooth and reveals fine striations. The second item, a quartz piece which resembles a right triangle, bears two sharp edges and a third which has been ground smooth.

Two small quartz-tempered body sherds (cord-marked exterior, plain interior) comprise the non-lithic prehistoric artifacts recovered from the Paul Site.

### HISTORIC MATERIALS

The Paul Site Field Record Forms indicate that a greater concentration of historical material was encountered than was retained. Included in the material retained are two kaolin pipe fragments, four earthenware fragments of willow design, a pearlware fragment, one stoneware fragment, a small blue bead, a modern button bearing a bird motif. The time range of the material retained is c. 1830 to present day.

### FAUNAL REMAINS

Shellfish (27 fragments) was represented at the site. Nine, possibly 17 more, fragments are of the species *Mercenaria mercenaria*. A lone fragment is that of an oyster (*Crassostrea virginica*). Most of the recovered shell are weathered. Its origin cannot be determined since they were recovered from a plow zone. The shell could have been used to fertilize the soil, or could be the remains of a dinner.

Bone (37) was also recovered from the site. The majority of the bones (30) represent a single rabbit. The remains bear morphological resemblance to the Eastern Cottontail, though in an immature stage of development. Connor (1971:24-26) notes that the only sure way to distinguish the Eastern Cottontail from the New England Cottontail is through examination of key skull characteristics. We do not have in our possession the skull of the Paul Site rabbit. The recovery of an immature animal in acidic soil is argument for a recent date of deposition (Gordon and Buikstra, 1981).

One bone fragment has been tentatively identified by Lynda Willet, Nassau County Museum, as an epiphysis of a deer. As the epiphysis does not appear to have calcified with the diaphysis, we presume that this animal was immature when death occurred.

The remaining six fragments of bone remain unidentified.

## DISCUSSION

The artifact inventory suggests a probable Woodland site. The stemmed points recovered during excavation and the Wading River point found by the property owner, however, are indicative of the Archaic Period. Further cultural affiliation cannot be determined due to the absence of diagnostic material.

A knapping and hunting station is inferred from the archaeological data, but the cultural material might very well be biased. Consideration must be given to what material may have been collected prior to archaeological work. Collectors usually leave behind the rough stone tools and flakes in favor of projectile points, ground tools, and ceramics. The surrounding area has been known to yield many a projectile points while farmers worked their fields.

The scarcity of *Use-Modified Objects* at the Paul Site suggests that activities involving the processing of food was virtually nonexistent. The amount of faunal remains unearthed would seem to substantiate this belief. The high acidity of the soil is a variable which might account for the scarcity of faunal remains, but not, however, for the lack of *Use-Modified Objects*.

The lithic inventory suggests that 22% of the raw materials were acquired through trade, or was at least secured from locations not on Long Island. The source of Chert, representing 91% of the exotic materials, could be mainland New York, while the argillite (9%) could have been secured from the New Jersey area (Rutsch 1970).

A chi-square test could not detect a relationship between artifact type and raw material type. Any statistical test would tend to skew toward the Unmodified Flakes category that comprises 94% of the lithic inventory. Instead, the percentage of exotic materials, mean artifact weight ( $X =$ ) and standard deviation of artifact weights ( $S =$ ) for each raw material within an artifact category was contrasted against those of other artifact categories. From this approach came generalizations toward differential use of raw material at the Paul Site.

Each flake was first weighed individually and then as a whole by raw material type. Dividing the sum weight of a raw material's individual flakes by the raw material's total weight as a whole yielded a measure of accuracy for the scale. For each raw material the accuracy is as follows: chert (98%); argillite (97%); quartz (96%); and quartzite (99%). of the trade materials in the Unmodified Flakes category, chert revealed an average flake weight ( $X = 0.57$ ) almost half that of argillite ( $X = 0.93$ ). The standard deviation of flake weights for both materials is equal ( $S = 0.98$ ). Important to note is that chert, yielding a lower average flake weight than argillite, would have been secured from a source farther away than the argillite. The local resources, quartz ( $X = 0.72$ ;  $S = 1.14$ ) and quartzite ( $X = 2.42$ ,  $S = 1.58$ ), reveal higher standard deviations from mean flake weight than do the trade materials. Comparing the chert and quartz data (97% of unmodified flakes), greater variation appears to exist in the manufacturing process of local resources than among the foreign materials.

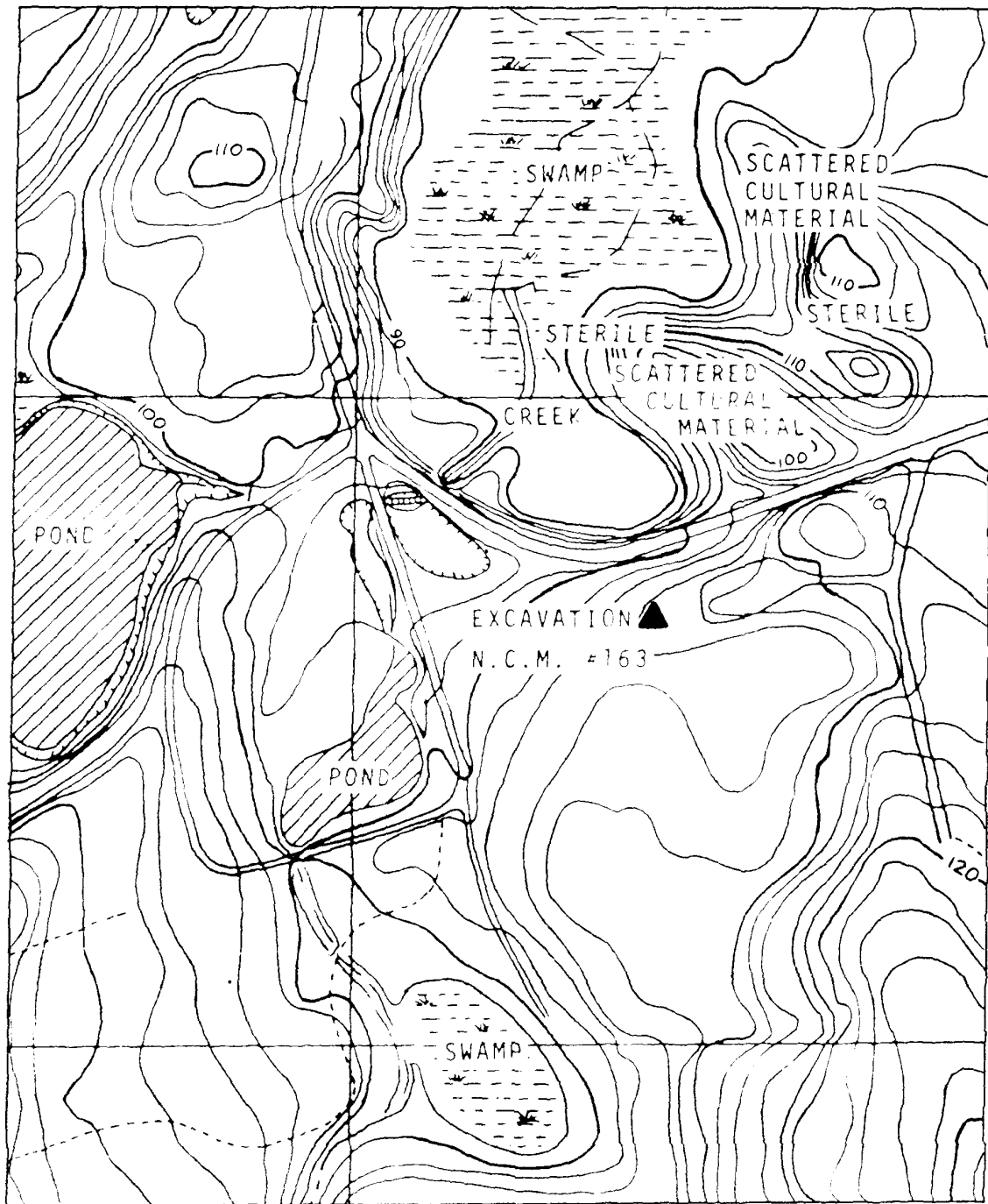
The percentage of exotic materials (16%) in the Amorphous Stone category is represented as below average for the site (22%). The average artifact weight (18.35 g) and standard deviation (3.51) of the quartz specimens in this category is greater than that shown to exist for the chert ( $X = 7.45$  and  $S = 1.17$ ) specimens. The lower Amorphous Stone mean weight and lower standard deviation of mean weights for materials of foreign origin, coupled with the same tendency shown for the Unmodified Flakes, suggests that an effort was made to minimize waste loss when using exotic materials.

The use of exotic materials is best represented among the projectile points, be they Levanna points or stemmed points, than any other type of artifacts. Approximately 43% of all projectile points were fashioned from foreign materials.

That output entailed minimum waste when using an exotic raw material seems clear. The high percentage of projectile points of foreign material, the lower mean weights and standard deviations for Amorphous Stone and Unmodified Flake artifacts of foreign material would seem to indicate that the material was imported in prepared form. The behavior seen in the use of local materials is to the contrary. While one could easily pick up a rough quartz cobble, one could easily afford an abundance and variety of discard flakes.

Trade materials may have entered Long Island in the form of blades such as those recovered from Massapequa Lake (Kaplan and Mills 1976). Moving bulk stone over considerable distances would argue that much of it be received in functional form. To go through the trouble to import a heavy product such





**Figure 2:** Topographic Survey Map of Old Brookville, scale 1"=200', contour interval = 2.00'

as stone would seem to indicate that it was a desired material and that the importers would not want to see all that much of it go as discard. Even if the importers were to travel to the quarry source, it seems likely that they would collect and return with as much functional weight as possible.

While knapping appears to have been the primary activity at the site, this very act when coupled with the site's location away from the base camp suggests an indirect association with hunting as well. The

present day swamp could have borne implications concerning the gathering or extraction of food resources from its ecosystems.

The swamp is a rich and varied biotic zone of a high carrying capacity to sustain life. The dominant tree type, according to the Nature Conservancy's report on the nearby Clark Sanctuary, is the Red Maple, but a variety of species, including Walnut and Oak, are common. Ground vegetation includes herbs potentially useful for medicinal purposes (yarrow, May apple or mandrake), and such edible foods as catbrier and cattails. Common fauna of the area includes turtles, opossums, moles, shrews, raccoons, skunk, muskrats, red fox, chipmunks, woodchucks, minks, eastern cottontail, and a variety of snakes, frogs, and migratory fowl. Deer is another resource which could have been exploited in the marginal areas. The swamp would have been an excellent water source for both humans and other animals.

Another important aspect of the site, its inland location and presence of exotic materials notwithstanding, is its proximity to the stream. Drainage systems afforded a rapid and relatively trouble free sojourn through the interior environment-be it on foot or by canoe. Testing the stream bed was not considered a priority during excavation and so how twentieth century land management practices on western Long Island have modified the stream is unknown. Development has undoubtedly imposed negative restrictions on such extant streams as Cedar Swamp Creek-even to the extent of diverting water flow. This stream, nonetheless, constituted a north-to-south water transport that would have united the people of the two shores into a cohesive communication network.

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## A PRELIMINARY REPORT ON THE ATTRIBUTE ANALYSIS OF MOHAWK CERAMICS

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### ABSTRACT

This study presents the preliminary results of an attribute analysis of Mohawk-Iroquois ceramics. Previous typological studies of Mohawk pottery are reviewed. While the contributions of these efforts are acknowledged, it is suggested that the study of ceramic attributes may greatly enhance our ability to reconstruct an accurate and precise Mohawk chronology. The importance of exploring ceramic attributes as a means of establishing a framework for studying other processual issues is emphasized. Preliminary results are presented which reveal the potential of this approach.

This paper was originally presented at the 26th Annual meeting of the Northeast Anthropological Association, March 1986.

### INTRODUCTION

The purpose of this paper is to introduce a research project that is currently in progress, discuss the goals of the research, and present some very preliminary results. The project, an attribute analysis of Late Woodland Mohawk-Iroquois ceramics, utilizes extant samples from the cumulative work of amateur and professional archaeologists as well as data currently being obtained by The State University at Albany's Mohawk Valley Project. Primarily, the goals of this research are twofold. The first is to develop an accurate and refined site chronology for the Mohawk. The second is to identify site relocation sequences in order to address such aspects of culture process as tribal origins, village amalgamation or fission, and nearest neighbor trends.

### A REVIEW OF MOHAWK RESEARCH

Excavations in the Mohawk Valley that are pertinent to our current understanding of the Mohawk chronology have been conducted by numerous individuals and institutions. This necessarily excludes the relatively large portion of excavated Mohawk data that has been collected in the past without provenience information and/or for the purposes of private, non-accessible collections. Far more important to our understanding of Mohawk culture history are various published works of both amateurs and professionals. Their analyses have included essentially three types of evidence: typological seriation of ceramic material, radiocarbon dates, and presence of European goods. Important publications which contain information on Mohawk sites or the Mohawk chronology include MacNeish 1952, Ritchie 1952, 1965, Ritchie, Lenig and Miller 1953, Lenig 1965, 1977, Grassman 1969, Engelbrecht 1971, 1974, Ritchie and Funk 1973, Kuhn 1985, Snow 1985, Rumrill 1985, and Kuhn and Snow 1986.

One of the first meaningful studies of prehistoric Iroquois cultural development was MacNeish's *Iroquois Pottery Types* (1952). For the Mohawk, MacNeish analyzed ceramic samples from ten sites, identified a number of temporally diagnostic types, and established that the Mohawk had developed in situ at least since the beginning of Late Woodland times (c. A.D. 1060). Understanding of the early Late Woodland Owasco period is based on the excavation of a number of sites in the Mohawk Valley including

Willow Tree, Turnbull, Snell (Ritchie, Lenig and Miller 1953), and Westheimer and Nahrwold #1 (Ritchie and Funk 1973: 123-153, 276-290).

The emergence of Northern Iroquoian culture from an Owasco base was attributed to the Oak Hill phase by Lenig (1965) through further typological analysis of ceramic samples. Important sites include Oak Hill #7, Galligan (Lenig 1965) and the later Oak Hill components of Nahrwold #1 (Ritchie and Funk 1973: 270-290). Succeeding Oak Hill is the Chance Phase, originally defined by Ritchie (1952) based on his work at the Second Woods and Chance sites as well as other sites outside of the Mohawk Valley. Further understanding of this phase has resulted from the work of the New York State Museum at the Getman site (Ritchie and Funk 1973: 291-312) and the SUNY Albany Mohawk Valley Project at the Elwood site (Snow 1985). An additional occupation from the multi-component Nahrwold #1 site must also be included in this phase.

The Garoga Phase, representing the culmination of pristine Mohawk development, was added to this prehistoric sequence by Ritchie (1965). The palisaded sites of this phase include Garoga, the type site excavated by Ritchie and Funk in the early 1960s (1973:313-332), Cayadutta (Lenig 1965), and Otstungo, a transitional Chance/Garoga phase site currently being excavated by the Mohawk Valley project (Guldcnzopf 1985:49).

The Klock and Smith sites, each containing a small number of European trade materials in their artifact samples (Lenig 1977:78), mark the protohistoric period. These sites were excavated by the New York State Museum in the 1960s. The Rice's Woods, Wagner's Hollow, and Martin sites are historic period sites containing a higher frequency of trade goods and dating to the early seventeenth century (Engelbrecht 1971:20, 28, 107, Lenig 1977:78, Rumrill 1985:3-7). Subsequent sites of the historic period include Little, Naylor (Rumrill 1985) and Jackson-Everson (Kuhn and Snow 1986), all excavated by the Mohawk Valley project.

A synthesis of the site chronology for the Mohawk Valley, including identified phases and available absolute dates, is given in Table 1. The spatial distribution of sites which fall within the middle Mohawk drainage is illustrated in Figure 1. The sites and their interpretation have led to an acceptable understanding of Late Woodland Iroquois cultural development in the Mohawk Valley which can be conceptualized as a sequence of periods and phases-Owasco, Oak Hill, Chance, Garoga, Protohistoric, and Historic-spanning a time period of 700 years from A.D. 1000 through European contact.

A complete review of all the Mohawk pottery types associated with this sequence is beyond the scope of this article. Some dominant trends in the evolution of Mohawk pottery styles include a change from collarless to collared pottery during the Owasco-Oak Hill transition, evolution in the technique of decoration from cord-marked through interrupted linear to incising during the Oak Hill and Chance phases, and the addition of basal notches entering the Garoga phase. Most of the Mohawk collared pottery is decorated with parallel oblique, vertical, horizontal, or filled triangle motifs.

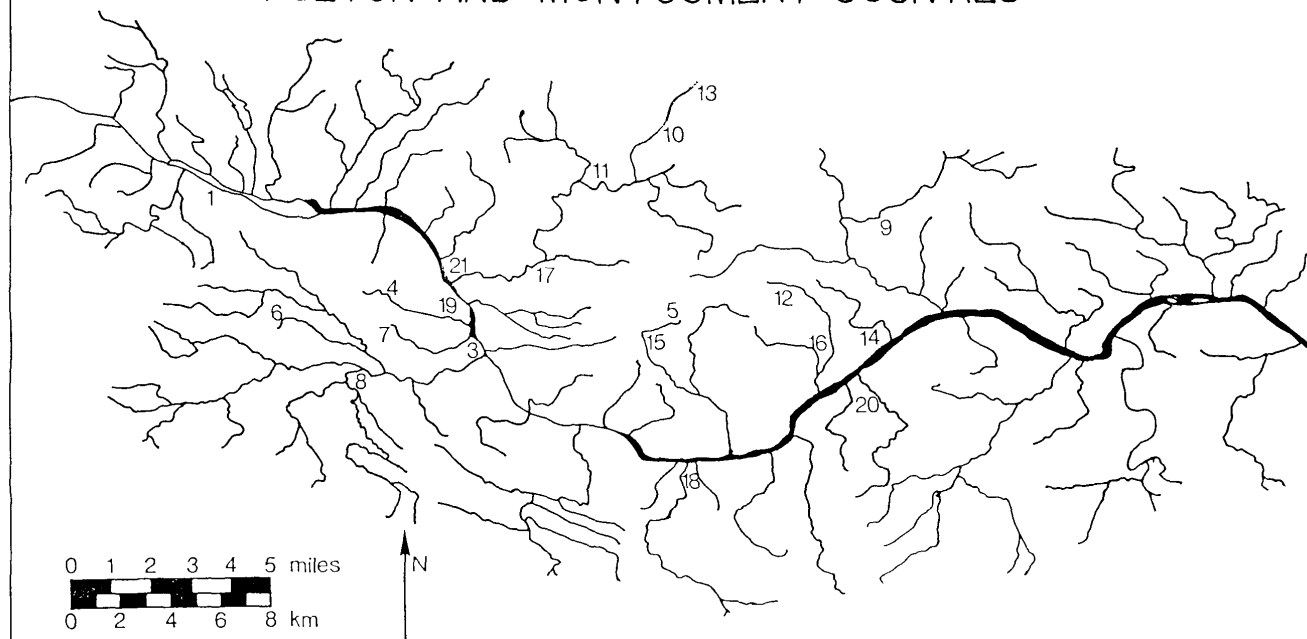
### THE ATTRIBUTE ANALYSIS OF MOHAWK CERAMICS

Although so much of Mohawk research has been successful, this project was designed to go beyond previously utilized methods in order to obtain more detailed information from new and extant data. While the ceramic types defined by Lenig (1965:5-8) are useful, that is to say temporally diagnostic, and the site chronology he developed essentially accurate, there are significant limitations with typological research. A more effective approach to the study of Mohawk pottery should include attribute analysis. The best way to refine the chronology and to study other processes that might be reflected in ceramic decoration is to focus on attributes rather than types (Wright 1967, 1980, Engelbrecht 1971, 1980).

This project utilizes the attribute list developed by William Engelbrecht (1971) and used in his dissertation. It is a comprehensive and exhaustive list suited to the analysis of Mohawk ceramics, as well as the ceramics of other Iroquois groups. The attribute list includes such variables as lip shape, rim contour, lip decoration, collar to neck relationship, technique of decoration, decorative motif, collar base treatment, castellation variety, collar height, lip thickness, base thickness, and ceramic type. For those interested in reviewing this attribute list, it is published in Engelbrecht's doctoral dissertation (1971:116-125).

The analysis of Mohawk ceramics available to us from a variety of sources was conducted. At present,

# MOHAWK RIVER VALLEY FULTON AND MONTGOMERY COUNTIES



- |                 |                 |                     |                     |                     |
|-----------------|-----------------|---------------------|---------------------|---------------------|
| 1. WILLOW TREE  | 6. ELWOOD       | 11. KLOCK           | 16. BRIGG'S RUN     | 21. JACKSON-EVERSON |
| 2. SNELL        | 7. SECOND WOODS | 12. BARKER          | 17. WAGNER'S HOLLOW |                     |
| 3. GALLIGAN     | 8. OTSTUNGO     | 13. SMITH           | 18. NAYLOR          |                     |
| 4. OAK HILL # 7 | 9. CAYADUTTA    | 14. MARTIN          | 19. LITTLE          |                     |
| 5. GETMAN       | 10. CAROGA      | 15. ENGLAND'S WOODS | 20. CROMWELL        |                     |

**Table 1.** Temporal placement of Mohawk Valley sites discussed in text.

Periods/Phases	Sites	Absolute Dates
HISTORIC	Jackson-Everson Cromwell Little Naylor Wagner's Hollow Brigg's Run England's Woods Martin	
————AD 1600————		
PROTOHISTORIC	Smith Barker Klock	
————AD 1550————		
GAROGA	Garoga Cayadutta Otstungo	1500±90 AD (A-1278)*
————AD 1500————		
CHANCE	Second Woods Nahrwold #1 Elwood Getman Deowongo Island Chance Bemis	1450±80 AD** 1390±150 AD**
————AD 1400————		
OAK HILL	Oak Hill #7 Galligan Nahrwold #1	1325±75 AD (M-1185)*** 1310±95 AD (I-2399)**
————AD 1300————		
OWASCO	Snell Westheimer Willow Tree Turnbull	1156±200 AD (M-492)*** 955±250 AD (M-177)***
————AD 1000————		

Sources for absolute dates: \*Kuhn 1985; \*\*Ritchie and Funk 1973; \*\*\*Ritchie 1965.

the sample consists of over 2300 rimsherds from eighteen sites (see Table 2). Data from the sites of Martin, Cromwell, Barker, Wagner's Hollow, and Smith were supplied by William Engelbrecht. The excavations of the Mohawk Valley Project supplied assemblages from the Elwood, Little, Naylor, Jackson-Everson, and Otstungo sites. The Frey and Richmond Collection, housed at the State University of New York at Albany, provided additional sherds from Otstungo and Garoga, as well as a sample from the England's Roods site. Avocational archaeologists made their collections available. John Jackowski provided rimsherds from Brigg's Run and Little, while collector Donald Rumrill provided additional rimsherds from Naylor. Finally, the New York State Museum collections from Nahrwold #1, Deowongo Island, Getman, Bemis, Klock, and Garoga have been analyzed. It is hoped that the current sample may be expanded in the future with further assemblages from the Mohawk Valley Project and assemblages in the possession of local amateurs.

The statistical analysis of the data collected will include the application of a series of techniques including cluster and factor analysis. To this end all of the data has already been entered into permanent file on the Univac 1100 mainframe at the State University of New York at Albany. Concerning the use of statistical techniques, a number of seriation studies in recent literature should be viewed critically.

**Table 2.** Mohawk sites and rimsherd samples analyzed.

Sites	N
BARKER	156
BEMIS	29
BRIGG'S RUN	22
CROMWELL	87
DEOWONGO ISLAND	50
ELWOOD	89
ENGLAND'S WOODS	17
GAROGA	489
GETMAN	46
JACKSON-EVERSON	15
KLOCK	423
LITTLE	11
MARTIN	161
NAHRWOLD #1	31
NAYLOR	14
OTSTUNGO	98
SMITH	445
WAGNER'S HOLLOW	174

**Table 3.** Seriation of sites based on frequency of rimsherds with less than three horizontal border lines.

CROMWELL	57.9%
LITTLE	50.0%
NAYLOR	50.0%
WAGNER'S HOLLOW	44.9%
BRIGG'S RUN	38.5%
ENGLAND'S WOODS	36.4%
MARTIN	33.8%
SMITH	30.6%
BARKER	29.2%
KLOCK	26.7%
GAROGA	17.2%
OTSTUNGO	17.0%
ELWOOD	15.9%
GETMAN	13.2%
DEOWONGO ISLAND	10.3%
BEMIS	10.0%

Seriation is a method laden with difficult assumptions and has certain inherent limitations (Dunnell 1971). The advent and application of sophisticated multivariate analyses in seriation studies does not resolve many of these problems. Yet many researchers are simply collecting data, indiscriminately applying multivariate statistics, and accepting their results as being more precise than they can ever be expected to be.

This article is not the place for a complete critique of seriation and multivariate statistics; however, one example may be given to illustrate this point. In most of the multivariate statistics that have been used for seriation, all of the variables are weighted equally. This in itself does not seem to be a good approach to seriation. It simply seems clear that certain attributes may be far more important than others (c.f. Whallon 1971, Wright 1980). Some attributes may be temporally diagnostic, others not diagnostic at all, and yet most multivariate analyses weight all the variables equally.

The analysis of Mohawk ceramic data will consider univariate and bivariate trends as well as multivariate analyses. Significance tests will be applied as a measure of the probable accuracy of the chronology. Hopefully this approach will provide the best insight into the temporal and cultural factors reflected in Mohawk pottery decoration.

Although the analysis of this data has only just begun, the process of sorting through over 2300 rimsherds has already proved informative. Therefore, some preliminary results based on this study can be hazarded. Sorting through the pottery it became clear that some of our initial assumptions concerning the validity of Lenig's types were confirmed. The types he defines do appear to be temporally diagnostic. However, it does appear that some of Lenig's types may mask important variability in certain attributes which were recognized in Mac11'eish's original typology (1952:70-89). In this case, a "lumping" of types by Lenig may have obscured temporally sensitive attributes. Also, Lenig's types were occasionally difficult to work with because they are often neither mutually exclusive nor exhaustive. As a result, a revision of some of the types may be useful. Finally, working with the pottery has revealed a substantial amount of variation in additional attributes. This represents previously unrecognized variation that has been masked in the existing typologies. These observations reaffirm that an attribute analysis will provide a superior method for seriating Mohawk sites as well as studying other cultural processes.

Beyond these subjective conclusions, some very preliminary univariate statistical analyses have been conducted on these data. For example, one of the classes of Mohawk collared pottery is pottery where the central motif is bordered by one, two, three or more horizontal lines. This class of pottery is referred to, for simplicity's sake, as "bordered" pottery. In typological terms, bordered pottery would include such types as Oak Hill Corded, Durfee Underlined, Chance Incised, Deowongo Incised, Garoga Incised, and Cromwell Incised, but not Kelso Corded, Bainbridge Linear, Wagoner Incised, Martin Horizontal, or Thurston Horizontal, either because these types do not have horizontal border lines, or because

horizontal lines constitute the central motif (for type descriptions see Lenig 1965:5-8). The frequency of sherds with less than three horizontal border lines out of all bordered pottery was calculated for each site. (The Jackson-Everson and Nahrwold sites were excluded from this analysis. The former assemblage contains approximately eighty percent Huron style pottery and the latter assemblage is from a multi-component site requiring closer examination of internal variability.) Table 3 presents the frequency of bordered pottery with less than three horizontal border lines for each site. The frequency of this attribute tends to increase through time and seriates the sites very well.

One interesting aspect of this attribute is that it is not a diagnostic criteria in the ceramic typology. In fact, it cross cuts the existing types and it would appear that this pattern has not been recognized before. With these types of trends showing up in preliminary analyses of the data it seems certain that the project can achieve the goals set out for it, and that it will add substantially to our understanding of the Mohawk chronology, village relocation, amalgamation, and fission sequences, all of which will aid in the future study of processual events among Late Woodland peoples of the Mohawk Valley.

#### ACKNOWLEDGEMENTS

The development of this extensive body of ceramic data owes a great deal to several individuals. We would like to thank William Engelbrecht of The State University of New York College at Buffalo for providing pre-coded data from several sites mentioned in the text, John Jackowski and Donald Rumrill for making their private collections available, and Robert Funk, Lynn Sullivan, and Beth Wellman for their assistance with the New York State Museum Collections.

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**NYSAA NOTES AND NEWS***Obituary*

Martin C. Schreiner 1909-1986

Martin Schreiner, or Matt, as we all knew him, died in his sleep at his College Point home on November 29, 1986. He was 77 years old. He had been ill off and on for a couple years, with check-up visits to hospitals. A life-long friend, he was an ardent student of local archaeology. He was one of the founding members of the Metropolitan Chapter of the New York State Archaeological Association.

Although Matt never had the benefits of a university education, nevertheless he was well read in archaeology, and keenly followed the current news in his chosen avocation. I first met Matt on the College Point dig site just about 50 years ago. He became one of the core members of the Flushing Historical Society Anthropological Group, which included Carlyle Smith, John E. Wilson and myself as most active in the field. Those were extremely busy week-ends before World War II, when developers and road builders seemed to compete in tearing up the last vestiges of landscape in Brooklyn, and Queens on western Long Island. Through Carlyle Smith, who had taken a job directing WPA workers on archaeological digs in Nebraska, Matt had a long field season with the Nebraska Historical Society. The war put the situation on hold for all of us. Matt was taken into the army originally on a one year service stint, which lengthened to something more serious. He saw combat in North Africa and Italy in the European theatre. After the war, when Smith went to teach in Kansas with a brand new doctorate, and I took a position with the Smithsonian Institution, Matt kept up his interest in local archaeology. He joined forces with Julius Lopez and Stanley Wisniewski in the investigations of the fast dwindling sites. After Julius Lopez's unfortunately premature death, Matt continued on with Stanley in local field investigations. One of the locales they explored was in the neighborhood of Stanley's summer home at Miller Place.

We are deeply indebted for Matt's diligence and his not small part in helping put together the corpus of knowledge about western Long Island archaeology. Without his efforts, we would certainly have been that much poorer in our understanding of local prehistory. We will miss his cheery smile, thoughtfulness, and simply good companionship.

Matt left his field notebooks with me, part of the record of sites our group had investigated. His collection of material has been deposited in museums as part of joint gifts.

Ralph Solecki

*Comment*

**A NOTE OF CLARIFICATION ON TWO SITES REPORTED BY  
TUCK'S *ONONDAGA IROQUOIS PREHISTORY* (1971)**

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Professor, Department of Teacher Development  
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Kent State University

Those who have undertaken archaeological surveys, such as that one conducted by James Tuck and reported in his book *Onondaga Iroquois Prehistory* (1971), know the complexity and the many difficulties with such tasks. Locating sites, tracking down materials in private and museum collections, and

attempting to interpret available artifacts with often sketchy or non-existent field notes represent some of the major frustrations and challenges of all archaeologists.

I was directly and prominently involved in two of these sites reported by Tuck. His book, published by Syracuse University Press, was brought to my attention in 1980. Upon reading the data on these sites it became evident that certain additions and corrections were needed to be presented and that some omissions and/or errors should be corrected for the sake of accuracy and completeness and for the benefit of those researchers who might undertake a future study in the region.

Starting in the fall of 1956, when I had just begun graduate studies at Syracuse University, and for the periods of 1956-58 and 1959-60, many weekends were devoted to an organized survey group composed of university students who expressed interest in archaeology. Most of the students were residents of the Watson Hall complex, while others joined the team from neighboring residences. At this time I was employed at Watson Hall as a resident advisor. Interest for participation in the survey was generated and cultivated as a result of an on-going educational program centered at the Hall for which I had assumed leadership. It consisted of lectures, displays, and opportunities for field experiences through weekend excursions in the surrounding countryside. Some students joined the group as a result of being enrolled in Dr. George Agogino's prehistoric archaeology course. It was through this course that I became involved as a field supervisor and co-authored a mimeographed field practice manual with him. During one of the weekends in the fall of 1956 the Indian town of Onondaga was located on the opposite side of the road indicated by the State marker. This was corrected later. The owner of the property, Frank Keough, shared his collection of artifacts with me. He also told me of charcoal streaks which he and his son Tim had noted during spring plowings over the years. Subsequent surface survey and testing confirmed the earlier erroneous location of the site. Mr. Keough gave permission to excavate a portion of the field in order to determine the nature of the evidence. The site was named the "Keough site: Onondaga Village". Further discussion with Mr. Keough and other local informants revealed the presence of Indian burials on the county prison property (The Pen site) which was adjacent to the Keough site. Another site, Bloody Hill (Tly 5-2), was located on a large hill overlooking both the Pen and Keough sites. For security reasons, related to the prison, the Pen site was not investigated. However I examined the Bloody Hill site (Tly 5-2) and several test pits were excavated during 1959-60. I sent a letter to Dr. William Ritchie, New York State archaeologist, requesting code numbers for the sites. I reported our finds and also noted the inaccuracy of the State marker.

During the excavation of the Keough site (Tly 1-2), Ms. Ethel Fine, a participant in the surveys, and then, a graduate student in Sociology at Syracuse University, wanted to incorporate the Keough site in her master's thesis. In support of her interest I entrusted her with all the artifacts and field notes, as well as the grid map of the excavated area. We agreed, upon the recommendation of her thesis committee member, Dr. Agogino, that upon completion of her investigation that she would turn over all the materials to Syracuse University, and would appropriately recognize my contribution to her efforts. The field notes, drawings, and photographs of the artifacts recovered from the Keough site are reported in Chapter VI of her unpublished thesis, *A Proposed Site Museum: Onondaga 1684r96* (1962). I gave a presentation on the Keough site to the Chenango chapter during the spring of 1959.

I examined the Bloody Hill site in 1959-60. The grid map, field notes and artifacts from the site were donated to Syracuse University in 1961. When Tuck's book came to my attention in 1980, I sent a letter to the editor of Syracuse University Press about my work and finds. He responded, that he was going to forward a copy of the letter to Dr. Tuck. More recently I sent a letter to Dr. Tuck indicating my intention to submit the present clarification. He agreed with my idea.

Having said, and hopefully, the sequence of events clarified, I would like to draw attention to the information reported in Dr. Tuck's book, in the hope that if and when a second edition is printed the necessary corrections will be incorporated herein. The material reported on pages 119-122 deals with the two sites in question. The Keough site (Tly 1-2) is the historic village which is briefly referred to on page 188. The artifacts collected, and the photograph of some of the typically 5-7 inches diameter charred posts uncovered during 1956-58 are reported in Figures 41-42, 46-51, and 54-55 in Ms. Fine's thesis. None of this material is presented in Tuck's publication. The artifacts described by Tuck on pages 120-122 are from the Bloody Hill site. Much to my dismay, somehow the collections are incorrectly identified, perhaps because of a mix-up since they were donated to Syracuse University. The consequences are unfortunate; however the error has been identified and will hopefully be corrected. In other words,

Tuck may not have been fully aware of Ms. Fine's thesis data based upon my work at the Keough site (i.e. Historic Onondaga). The whereabouts of the original material I gave to Ms. Fine are not known to me; it should be at Syracuse University. Finally, Tuck, presumably because of a recording error at Syracuse University, attributed the Bloody Hill material to the Keough site, thus confusing the issue of what is what. Perhaps this episode will make all us more cautious: the sources of error between fieldwork and publication can be many. Hopefully we will be always alert and take the time to correct the information when the circumstance arises.

*Recent Publication*

Versaggi, Nina M.

1986     *Hunter to Farmer: 10,000 Years of Susquehanna Prehistory*. Roberson Center for the Arts and Sciences, 30 Spring Street, Binghamton, New York, 13905. 83 pages. \$8.00 including tax and handling.

## THE ACHIEVEMENT AWARD

Charles M. Knoll (1958)  
William A. Ritchie (1962)  
Thomas Grassman O.M.F. (1970)  
Robert E. Funk (1977)

Louis A. Brennan (1960)  
Donald M. Lenig (1963)  
Paul L. Weinman (1971)  
Peter P. Pratt (1980)

## FELLOWS OF THE ASSOCIATION

Roy Latham  
William A. Ritchie  
Charles F. Wray  
Alfred K. Guthe  
Julius Lopez  
Marian E. White  
Donald M. Lenig  
Thomas Grassman O.F.M.  
Bruce Rippeteau  
Franklin Hesse  
Gilbert Hagerty  
Donald A. Rumrill

Richard L. McCarthy  
R. Arthur Johnson  
Stanley Vanderlaan  
Robert E. Funk  
Edward J. Kaeser  
Robert Ricklis  
Charles F. Hayes III  
Bert Salwen  
Herbert C. Kraft  
Peter P. Pratt  
William Engelbrecht  
Lucianne A. Lavin

Louis A. Brennan  
Paul Weinman  
Thomas Weinman  
Audrey Sublett  
Theodore Whitney  
William S. Cornwell  
Gordon K. Wright  
James A. Tuck  
Paul Huey  
Dolores Elliott  
Monte Bennett  
Richard E. Hosbach  
James W. Bradley

## CERTIFICATE OF MERIT

Franklin J. Hesse  
Stanford J. Gibson  
Peter P. Pratt  
Monte Bennett  
Richard E. Hosbach  
Gordon DeAngelo  
Neal Trubowitz  
William F. Ehlers  
Dolores N. Elliott  
R. Michael Gramly  
George R. Walters  
Elizabeth Dumont

Marjorie Pratt  
George R. Hamell  
John H. McCashion  
Roger Ashton  
William D. Lipe  
Marilyn C. Stewart  
Beth Wellman  
Lewis Dumont  
Henry Wemple  
James Walsh  
Charles Vandrei

James Bradley  
Daniel M. Barber  
Harold Secor  
Albert D. LaFrance  
Gwyneth Gillette  
Brian L. Nagel  
Robert J. Gorall  
Edward J. Lenik  
Stanley H. Wisniewski  
Joan Giesmar  
Annette Silver  
John Ferguson