1. NAME OF PROPERTY

Historic Name: THOMAS A. GREENE MEMORIAL MUSEUM

Other Name/Site Number: Greene Geological Museum; Greene Museum

2. LOCATION

Street & Number: 3367 North Downer Not for publication: ___

City/Town: Milwaukee Vicinity: ___

State: WI County: Milwaukee Code: 079 Zip Code: 53201

3. CLASSIFICATION

Ownership of Property
Private: ___
Public-Local: ___
Public-State: X
Public-Federal: ___

Category of Property
Building(s): X
District: ___
Site: ___
Structure: ___
Object: ___

Number of Resources within Property

Contributing	Noncontributing	
1	_____	buildings
_____	_____	sites
_____	_____	structures
_____	_____	objects
1	0	Total

Number of Contributing Resources Previously Listed in the National Register: 0

Name of Related Multiple Property Listing:

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ____ meets ____ does not meet the National Register Criteria.

_____ _____
Signature of Certifying Official Date

_____
State or Federal Agency and Bureau

In my opinion, the property ____ meets ____ does not meet the National Register criteria.

_____ _____
Signature of Commenting or Other Official Date

_____
State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

____ Entered in the National Register _____
____ Determined eligible for the _____
National Register
____ Determined not eligible for the _____
National Register
____ Removed from the National Register _____
____ Other (explain): _____

_____ _____
Signature of Keeper Date of Action

6. FUNCTION OR USE

Historic:	EDUCATION RECREATION and CULTURE	Sub:	RESEARCH FACILITY MUSEUM
Current:	EDUCATION RECREATION and CULTURE	Sub:	RESEARCH FACILITY MUSEUM

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: Moderne-Art Deco

MATERIALS:

Foundation:	Brick and Concrete
Walls:	Brick
Roof:	Composition
Other:	Sandstone Trim

Describe Present and Historic Physical Appearance.

This free-standing, two-story brick building was erected originally as a fireproof college museum for the purpose of preserving and displaying the fossil and mineral collection and library of Thomas Arnold Greene. The Greene Memorial Museum is a part of the old Milwaukee-Downer campus and is located adjacent to the original college buildings erected between 1897 and 1905. Designed by Alexander C. Eschweiler, Sr., these buildings are already listed in the National Register of Historic Places, Wisconsin Registered Landmarks, and Historic American Buildings Survey as the Milwaukee-Downer "Quad."[1] Alexander C. Eschweiler, Sr., was a Milwaukee architect and founder of a family architectural firm that for nearly a century designed many of the area's most important public, commercial, and industrial buildings as well as prominent homes and churches.[2] The Eschweiler holdings of the Wisconsin Architectural Archive contains the original architectural plans for the Greene Museum along with a general list of contractors' construction accounts.

The museum is constructed of brick laid in 115 courses of Flemish bond with brick and concrete foundation. The facade is red brick, some of which was laid in decorative patterns such as chevrons and tiers, especially on the east side of the building to the north of the front door. Red sandstone composes the coping at the roof, at the second story ceiling line, and at the stringline between first and second stories. The roof is a bi-level, flat roof of composition materials with tin flashing over a layer of cinder fill surrounding a central skylight. Three feet above the skylight is the upper roof level composed of wire glass.

Designed to be fireproof in order to protect the collection, the building was constructed almost exclusively of brick and concrete. Steel beams support some of the internal structure, including an unusual system of concrete beams supporting the main floor. The windows are patented fireproof windows with metal frames and chain pulleys; each window bears a metal plate indicating it was manufactured by Biersach & Niedermeyer Sheetmetal Works, 212-220 5th St., Milwaukee. The east door is wooden batten style with wrought-iron door handle and hinges. Lake Superior red sandstone pilasters topped by stylized leaf scroll carving flank the door, and the sandstone typanum above the door is carved with *Greene Memorial Museum* and branches with oak leaves and acorns crossed over a centralized coat-of-arms. On the north side of the door is a large electric coachlight with copper trim. Sawed red sandstone is used as window sills and keystones in upper story windows, as stringlines, and as

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[1] Zimmermann, H. Russell. 1989. *The Heritage Guidebook: Landmarks and Historical Sites in Southeastern Wisconsin*. Harry W. Schwartz, Milwaukee, p. 102.

[2] Davis, Richard S. 1943. *Fifty years of architecture. Milwaukee*, privately published.

decorative touches within the brickwork. Mortar between the bricks has struck mortar joints and was tinted to match the color of the red sandstone. The doorstep is a large, pink sandstone slab. The concrete front stoop with wrought iron railings, which faces east, is a replacement for the original, much larger staircase; this is the only significant alteration to the building. The original front staircase was L-shaped with concrete steps running east above the landing and north below it. Brick walls topped by stone coping flanked the stairs, and below the upper set of steps was a brick and concrete archway; this staircase was removed in 1949 because of archway deterioration.

The east door enters the building on the upper level, where two rooms are located. The smaller room is used as an office; the eastern one-third of this room was originally divided off as a vestibule. The present office contains Greene's library in one of his large wooden specimen cases with 6 shelves, lockable glass doors, and two lockable storage drawers with elaborately carved handles below. On the south wall are three, double-hung, fireproof sash windows in a row with a smaller window near the southeast corner. On the west wall of this room is a wooden panel door that leads to the interior staircase, and on the north wall is a wood door with small glass window, which was installed in the 1960s, that leads to the larger exhibit room.

The larger room has eight, pivot-sash skylight windows running in a row down the center of the room and a row of three, 18-paned hopper windows high on the west wall. The windows and skylight are surrounded by wood cornice whose pattern is continued on the ceiling on either side of the skylight as well. On the south wall are the doors to the office and another of the same type that leads to the stairs. The nine original drop lights in the ceiling were replaced with fluorescent lights in the 1960s.

Since 1913, this room has served as the main exhibit and storage area for the bulk of Greene's collection of 13,000 mineral specimens and all of his 75,000 fossil specimens, mostly stored in nineteenth century wooden cases that line the north and west walls. These wooden cases were made by Milwaukee manufacturers expressly to store Greene's collection.[3] They are 6.5 feet high and contain a total of 435 drawers, generally in columns of 14 drawers. Each drawer has two, black wooden and brass knobs and a porcelain plate with the drawer number painted on it with black paint, highlighted by gold leaf; the plate is also outlined in gold leaf. The drawer numbering system was initiated by Greene himself, and nearly every drawer contains a card bearing the drawer number, with its contents, written in Greene's hand. The drawers are secured by a slat of wood that fits over adjoining edges of every two columns of drawers and locks into place with a skeleton key. Each key has an engraved brass number tag and

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[3] Greene's correspondence and records document where he purchased specimen cases, labels, and boxes that still, after 100 years, house his collection. Many of these items were specially made by Milwaukee area manufacturers to Greene's specifications.

hangs on its own hook in a small lockable wooden key case affixed to the south wall; the tags and keybox were installed in 1930. Two detached wooden cases with carved panel fronts and finials were also built for Greene in Milwaukee; one of these has 36 drawers, the other 24, and each has a locking system whereby a hinged slat at either edge can be locked in place over the drawer ends. Greene had these cases custom made to store his collection in his home, and they were moved to the museum by his heirs for that same purpose.

In addition to Greene's personal cases, there are three, massive, nineteenth-century, two-sided wooden museum display cases which were manufactured in Milwaukee for Milwaukee-Downer College. On both sides of each case is a vertical display area surrounded by glass on three sides and a slanted subhorizontal display area with glass at the top; storage drawers with lockable panelled doors with brass fixtures are located below. These cases are now used for fossil display and storage.

The east wall and part of the south wall of this room are lined with modern glass and steel display cases, and several other similar cases are located on the floor in the east half of the room. None of these cases was installed permanently, all are free-standing and can be moved easily. They were purchased in the early 1960s to display Greene's minerals for the Museum's reopening. Also at this time, tile flooring was installed over the concrete floor.

The 20-step staircase that leads to the lower level has wooden railing and balusters with diamond shape carvings and a pyramidal finial. Wooden wainscoting at railing-level is present throughout the stairwell, and there is a double-hung, sash window with 15 panes on the west wall. A small wooden corner shelf on the south wall originally held the visitor registration book.

Downstairs there are two large rooms and two lavatories. The largest room, located in the north half of the building, was originally an exhibit area for Milwaukee-Downer's existing collection. It was converted into a classroom in the mid-1960s when the Milwaukee-Downer campus was purchased by the University of Wisconsin-Milwaukee. On the west wall are four, tall, double-hung sash windows with 28 panes each, grouped in pairs. Three, smaller, double-hung sash windows, each with 15 panes, are located on the north wall, and high on the east wall are three, 6-paned casement windows. In this room is one of Greene's specimen cases, like those upstairs but shorter, which is used for storage of some of his minerals. A very large, two-tiered wooden case, containing 3 columns of 22 drawers each, houses Greene's shell collection, some of which is in cotton-lined drawers as he stored them. These shells were collected by his sea-faring uncle, Welcome Arnold Greene, an early nineteenth century ship's captain, on his voyages. In the northeast corner of the room are two large specimen display cases that extend from the floor to the ceiling. Each one contains six shelves with three tiers of display area and two lockable glass doors each with 12 panes and white porcelain knobs. Below are storage

shelves with wooden panel doors and brass fixtures; these cases are from Milwaukee College (forerunner of Milwaukee-Downer), but are very similar to the cases Greene used for display of his collection in his home. A blackboard is hung on the south wall next to the original wood paneled door. Free-standing student laboratory tables were installed in the 1960s.

The other room is entered through a hallway just at the foot of and east of the stairs. The door is wood panel. This room has been used recently as a faculty office but was built originally as a classroom for teaching geology and physiography at Milwaukee-Downer. The room contains a Greene specimen case identical to that in the adjacent room which is also used for storage of his minerals. This room has three double-hung sash windows on the south wall and one on the east wall.

To both the west and east of the stairs are short hallways leading to the lavatories. The original west wall of the original Milwaukee-Downer classroom was moved east to create a hallway and the east lavatory in the 1960s. Each lavatory contains a double-hung sash window, toilet and sink, and wooden wainscoting. Beneath the stairs are closets with wood paneled doors containing utilities.

The walls, ceilings, woodwork, including cornices and floor mouldings, wainscoting, and door and window frames, and most of the doors are original. Metal protective grates were installed over all lower story windows in the 1960s. All floors and stairs have been covered with floor tiling. Originally, the building was steam-heated with radiators receiving steam from a power plant elsewhere on campus. The heating and lighting systems were replaced probably in the 1960s.

The door to the outside on the lower level is in the west wall. It was replaced with a metal security door in the 1980s. Outside, the door is sheltered by a flat roof supported by wrought-iron decorative brackets. The door sill is sandstone.

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties: Nationally: X Statewide: ___ Locally: ___

Applicable National Register Criteria: A X B X C ___ D ___

Criteria Considerations (Exceptions): A ___ B ___ C ___ D ___ E ___ F ___ G ___

NHL Criteria: 1, 2

NHL Theme(s): XIII. Science
B. Earth Science
2. Geology
C. Biological Sciences
3. Paleontology

Areas of Significance: Science
Education

Period(s) of Significance: 1913-1943

Significant Dates: 1913

Significant Person(s): Thomas Arnold Greene

Cultural Affiliation: N/A

Architect/Builder: Alexander C. Eschweiler, Sr.

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

SUMMARY

Amateur naturalists played a crucial role in the development of nineteenth century science by assembling extensive collections of natural history specimens. As a result, these individuals supplied many of the specimens and did much of the field work necessary for the pioneer scientific exploration and study of the natural environment in this country. The Thomas A. Greene Memorial Museum at the University of Wisconsin-Milwaukee houses an outstanding example of an amateur naturalist collection or "cabinet," very few of which survive intact. In addition to a comprehensive collection of minerals from around the world, from 1878 to 1894, Greene assembled an unparalleled collection of fossils from the classic ancient reefs of the Milwaukee-Chicago area, stimulating further research on these structures by eminent geologists of the day and providing abundant material for additional future paleontological research. The collection was originally donated to Milwaukee-Downer College, where Greene's heirs built a special fireproof museum building to house it in 1913. (Both were later sold with the rest of the Milwaukee-Downer campus to the University of Wisconsin-Milwaukee). As one of the first women's colleges in the country and one of the few to teach science, Milwaukee-Downer early on realized the importance of a museum collection to its goals. The Greene Memorial Museum fulfilled Milwaukee-Downer's needs and symbolizes the role natural history museums played in science education at liberal arts colleges and, in particular, in a women's college, around the turn-of-the-century. The Greene collection is the work of a masterful amateur naturalist. His is not just one of the very rare surviving nineteenth century amateur naturalist's collections, but it is also one of the most important from its time period because of its comprehensiveness, accompanying documentation, and irreplaceable nature, as well as its use in scientific research by prominent geologists. As such, the Greene Memorial Museum and collection possess national significance in documenting the development of science in 19th-century America.

Like the Wagner Free Institute in Philadelphia, already listed in the Register, the Greene Memorial Museum and collection is of national importance. The Wagner represents the other main driving force in nineteenth-century American science, the local scientific society. As an excellent example of an amateur naturalist collection, the Greene collection and museum, therefore, uniquely complements the Wagner Free Institute.

HISTORY

Thomas Arnold Greene, a pioneer Milwaukee businessman, was born in Providence, Rhode Island, on November 2, 1827.[1] At the age of 16, he began training in a drug store, and in 1848, moved to Milwaukee where he purchased his own store. Soon after, he formed a partnership with Henry H. Button to found what would become a very successful wholesale drug business, making Greene a wealthy man and a prominent business figure. At the time of his death, Greene was president of both the Greene and Button Company and the Milwaukee Gas Company and was on the board of directors of the Milwaukee Cement Company, the Northwestern National Fire Insurance Company, and the Wisconsin Trust Company. Demonstrating his lifelong interest in natural history, Greene was a member of the Milwaukee Natural History Society, the American Association for the Advancement of Science, the Wisconsin Academy of Science, Arts and Letters, and a charter member and president of the Milwaukee Public Museum, which he had helped found.

Preoccupied with his growing company, Greene had little time for his childhood interest in geology and botany until 1878 when his physician prescribed a relaxing hobby to relieve the stress of his business activities. Although he had collected minerals as a youth in Rhode Island, he found few minerals in the Milwaukee area and turned his attention to collecting fossils in the local stone quarries. Soon, Greene decided he would strive to assemble the largest and most comprehensive fossil collection possible from the Milwaukee (and later Chicago) area. He continued to pursue this ambitious goal until his death on September 7, 1894.

Greene collected fossils primarily from the richly fossiliferous Silurian reef rock, which was quarried extensively in the area for lime and stone. These Milwaukee area reefs were the first fossil reefs recognized in North America and some of the earliest known anywhere in the world. Increase A. Lapham's, Wisconsin's pioneer naturalist, discovery of the abundant and diverse fossils in these reefs in the 1840s attracted the first geologists to the area, forming the basis for classic studies by such eminent geologists as James Hall and Thomas Chamberlin. Greene's collection is the largest and most comprehensive fossil collection from these classic reefs, and as such, provides an irreplaceable record of their nature now that they have been largely destroyed by urban development.

Although Greene collected many specimens personally, he, like most other amateur naturalists, was also able to purchase fossils from quarry workers. Receiving a dollar or two from Greene for good specimens effectively doubled their wages and encouraged the quarry workers to become avid "fossil collectors." At some

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[1] Mikulic, Donald G. 1983. "Milwaukee's gentlemen paleontologists." *Wisconsin Academy of Sciences, Arts and Letters Transactions*, vol. 71, p. 5-20.

localities, Greene was able to arrange for the quarry operator to work, and even blast in, particularly fossiliferous areas of stone pits and to "hire" quarry workers for a day of collecting.

Greene also traded for fossils with scientists and other collectors, and purchased specimens from dealers throughout the country as part of a nationwide network of amateurs and professionals. Greene's correspondence and records detail these transactions with dealers and collectors, providing invaluable information about collecting sites, specimen sources, purchase prices, and personal relationships. They also furnish important insight into how both private and larger museum collections were assembled during this time period. Greene also corresponded with, and loaned specimens to, noted paleontologists of the day, documenting the importance of amateur naturalists to the work of professional scientists. Fossils from his collection have been illustrated in the scientific literature, and in appreciation of Greene's cooperation and in recognition of his fine specimens, scientists named several species of fossils from his collection after him. Over the years, many prominent paleontologists, including James Hall, Charles Wachsmuth, R. P. Whitfield, John Clarke, Frank Springer, Percy Raymond, August Foerste, and Robert Shrock, have used Greene's collection in their work.

Greene purchased most of the minerals in his collection. Many specimens are still associated with the original dealer labels, whereas sales invoices and correspondence with the mineral dealers is preserved in Greene's records. Because his collection was assembled during the hey-day of mining in North America, and because he maintained a desire to assemble a comprehensive collection, Greene acquired many rare and unusual minerals from famous mining districts around the world as well as from obscure mining localities that have been "lost" or generally forgotten.

His dedication, determination, and wealth allowed Greene to attain his goal of assembling the largest fossil collection in the region. Between 1878 and 1894, he spent more than $16,000 on his collection, including the wooden cases in which it is still housed. In total, he accumulated 13,000 mineral specimens and an estimated 75,000 fossils. It was acknowledged that Greene possessed one of the most valuable paleontological and mineralogical private collections in this country. At the time of his death, his collection was described as "the largest and most complete private collection west of Philadelphia and it still is the most complete collection of fossils covering the region tributary to Milwaukee. It would be impossible ever to duplicate the collection of fossils, for the reason that most of the quarries from which they were gathered during the long course of the years have been permanently closed and filled and there is no likelihood that they will ever be worked again."[2] This latter statement holds true especially today. Of the Greene fossil collection, Paleontologist Percy Raymond of Harvard University

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[2] Letter from Horace J. Upham to Ellen Sabin, February 3, 1911.

stated that "the Day Collection [at Harvard], bought in Milwaukee, upon which he had been working, is the best collection of any in the country, with the exception of this [the Greene collection], which far surpasses it."[3]

Greene is an excellent example of the "gentleman" or amateur naturalist, a social and scientific phenomenon, primarily of the nineteenth century, when the collection and study of natural history specimens for one's "cabinet" was a popular and socially acceptable pastime. The amateur naturalist was typically male, enjoyed fairly high social standing, and was successful enough in his chosen profession to have the time and money to devote to natural history pursuits. The quality of their activities ranged widely from random collecting to fine scientific research and embraced a diversity of natural history subjects, including archaeology, botany, zoology, and geology. Because of the time, effort, and money that the amateur naturalists could lavish on their collections, they, rather than the fledgling museums of the day, were the ones able to accumulate large numbers of high quality specimens and, commonly, their cabinets later formed the nucleus for larger institutional museum collections. A formal advanced education in newly founded scientific disciplines, such as geology, was difficult to obtain, and it was difficult to find employment in these fields. Therefore, the few professional scientists in the U.S., who lived chiefly in the eastern part of the country at a time when transportation was difficult and expensive, relied heavily on these local amateur naturalists to supply specimens, observations, and information in order to learn about the natural history of the expanding western frontier.

James Hall, the most famous paleontologist of the time, exemplifies the mutually beneficial relationship between the professional scientist and the amateur naturalists. As a major part of his research, Hall borrowed, bought, and traded fossil specimens and recorded observations made by these naturalists across the country; he also employed some of these naturalists as collectors. As one of the very few professional paleontologists, Hall had a huge geographic area to study and was dependent on the help of naturalists who made extensive local collections to determine fossil distribution and diversity. At the same time, the naturalists needed Hall's expertise in identifying their fossils thereby increasing the scientific value and respectability of their cabinets. Hall relied on Greene as an excellent source of research material during the 1880s, and on several occasions visited Milwaukee to study Greene's fossil collection, borrowing 400 specimens for use in his last major paleontologic work.

Unfortunately, the contribution and scientific importance of the amateur naturalists and their collections have been largely forgotten. Although some received published acknowledgement for their contributions from the scientists they aided, after their

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[3] Quote from Percy Raymond in letter from Margaret Campbell to Mary Upham, June 20, 1913.

deaths, their beloved "cabinets" were typically discarded by their heirs, dispersed among family members, sold to dealers, or donated to larger museums where they have lost their identity as individual collections. The role of the amateur naturalist in scientific research has declined substantially since the turn-of-the-century, primarily because a decrease in quarrying and mining has resulting in fewer collecting sites and an increase in the number of professional scientists whose research has become more theoretical.

What is exceptional about Greene's collection is that it has retained its scientific and historical integrity for 100 years. Most specimens are still accompanied by Greene's handwritten, specially produced labels, some bearing annotations by prominent scientists of the time. Many of the specimens remain in the order that Greene originally filed them within each drawer and they are still stored in the wooden cases he had custom-made for his "cabinet". Furthermore, extensive correspondence between Greene and scientists, fellow collectors, and dealers provides excellent documentation of the means and sources he used to assemble his collection, which were typical of amateur naturalists. Most importantly, Greene's collection escaped incorporation into a larger museum's collection as was the fate of many other naturalists' collections. Instead, Greene's collection resides in a college museum building erected by his heirs expressly to house it, protected by the rigorous rules of maintenance and use that they established. Therefore, this intact collection with all its accompanying documentation provides an unequalled example of a nineteenth century amateur naturalist collection.

After Greene's death, his family retained the collection in his home until 1911 when his son, Col. Howard Greene, and daughter, Mary Greene Upham, an alumna of Milwaukee-Downer College, donated it to the school. Mary, who had accompanied her father on collecting expeditions and was acquainted with the scientists who visited his collection, also studied Wisconsin geology, about which she lectured and wrote.[4] The collection was donated under the condition that it be housed in the special fireproof museum building she would fund, that geology be taught at the college, that scientists be allowed to study the collection, and that the collection be kept separate and intact, with the idea being "to safeguard its high quality and its unity, representing the work of one man."[5] Although several other institutions, including Yale University, Harvard University, the University of Chicago, and the University of Wisconsin-Madison, were interested in acquiring the collection at that time,[6] Greene's heirs gave the

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[4] Davis, E. U. 1935. Memorial of Mary Upham Greene, 1860-1935.

[5] Katherine Greacean Nelson in *Greene Museum Annual Report* for 1954-55.

[6] *The Kodak*, Nov., 1911, p. 18.

collection to Milwaukee-Downer. They wanted it to remain in Milwaukee where they could ensure that the collection would be protected. At the time, Milwaukee-Downer, a pioneering female college, was the only school in Milwaukee that taught geology, but also, the Greene family had a long association with the college.

In 1912, Mary Upham contributed $10,000 toward the construction of a special fireproof museum building to house her father's collection.[7] A building erected expressly to house a museum was an unusual feature at most colleges and universities, and considerable effort went into planning and construction to make this a true museum building. To design it, the family commissioned the architect Alexander C. Eschweiler, Sr., who earlier had designed the Milwaukee-Downer College quadrangle buildings. Completed in March 1913, the museum was described as "harmoniz[ing] in material and style of architecture with other buildings of the college."[8] Greene's collection of minerals and fossils occupied the main floor, whereas the lower floor had one large room for the college's pre-existing natural history collection, as well as a small classroom with "experiment-tables for classes in geology and physiography." Indeed, the Museum became an important focal point of science education, especially geology, at the college.

The Greene Memorial Museum was dedicated on October 31, 1913. Dr. Rollin Salisbury, world-famous scientist and professor of geology at the University of Chicago, presented a guest lecture. Margaret Louise Campbell, the Museum's first curator and a recent graduate of the University of Chicago, described the Greene fossil and mineral collection as "the best in many respects of any that [she] had ever seen," and that its placement at the school was "for the good of Downer College, citizens of Wisconsin and Milwaukee, and all lovers of nature everywhere."[9] She went on to trace the changes in women's education over the years, noting that in the past women were thought able "to memorize, but not reason, and, therefore, were mainly confined to languages, history, and kindred studies" while "Milwaukee-Downer was one of the first colleges that taught science on a large scale to her students." Campbell's appointment, in itself, was unusual as most museum curators at the time were men. Subsequent curators at the Greene Museum were also women, continuing with Olive Thomas, another University of Chicago graduate, Carol Mason, and Katherine Greacen Nelson, who cared for the collection for more than 30 years. Nelson, a prominent geologic educator, had received her bachelor degree from Vassar and the first doctorate

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[7] Kieckhefer, G. N. 1950. *The history of Milwaukee-Downer College 1851-1951*. Centennial Publication of Milwaukee-Downer College Series 33, No. 2.

[8] *Milwaukee-Downer Catalogue*, April, 1913, p. 6.

[9] Untitled, undated newspaper article (probably Nov. 1, 1913)

in geology at Rutgers University. Also, she was the first women to be awarded the Neil Miner Award for teaching excellence from the National Association of Geology Teachers for her work at Milwaukee-Downer and later the University of Wisconsin-Milwaukee.

Milwaukee-Downer College was a likely home for such an important collection and museum because of its progressive tradition in science education. The school was the result of an 1895 merger between two pioneering women's colleges of early Wisconsin: Milwaukee College (formerly Milwaukee Female Seminary, 1848-50, Milwaukee Normal School and High School, 1850-52, Milwaukee Female College, 1853-1875) and Downer College of Fox Lake (formerly Wisconsin Female College, founded 1855). In 1848, Lucy Parsons established the Milwaukee Female Seminary with the purpose of fitting young women not only "to adorn the higher circles of society, but to meet the varied and practical responsibilities of life." Therefore, a women's college had been chartered in Milwaukee years before the eastern colleges for women were established, with the exception of Mount Holyoke.[10] The new school attracted the attention of Catherine Beecher, the pioneering crusader for women's higher education and sister of abolitionist Harriet Beecher Stowe. Beecher began to reshape the Milwaukee Female Seminary according to her ground-breaking Beecher plan, which promoted raising the level of women's instruction to a collegiate grade in order to educate women for a profession, especially teaching, resulting in the Milwaukee Normal School and High School. In 1874, the Milwaukee College introduced the Ladies' Art and Science Class, a forerunner of adult continuing education. This popular lecture series was led by chemist Charles Farrar, first chairman of the science department at Vassar College and now president of the Milwaukee school, and was attended by several hundred Milwaukee women, including Mrs. Thomas Greene.[11] In support of his belief that there should be no difference in the quality of education for men and women, Farrar dropped "Female" from the titles of both Vassar and Milwaukee colleges. Although the Milwaukee College suffered many setbacks and financial hardships, especially through the Civil War years, it proved to be the only one of Catherine Beecher's experimental schools across the country to survive.[12]

The Wisconsin Female College was founded in Fox Lake, Wisconsin, in 1855; its name was later changed to Downer College to honor its benefactor, Judge Jason Downer. The isolated rural location of Downer College had hindered its growth, and when its head

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[10] Jupp, G. B. 1981. *The heritage of Milwaukee-Downer College: a reaffirmation*. Milwaukee History 1: 43-47.

[11] Nelson, K. G. 1965. " Charles Farrar and the Ladies' Art and Science Class of Milwaukee." *Wisconsin Academy of Science, Arts and Letters Transactions* 54, Pt. A: 119-123.

[12] Kieckhefer, G. N. 1950. *The history of Milwaukee-Downer College 1851-1951*. Centennial Publication of Milwaukee-Downer College Series 33, No. 2.

Ellen Sabin, nationally renown educator, was offered the presidency of Milwaukee College in 1894, a merger between the two schools was proposed because of their similar educational goals. Construction of the new Milwaukee-Downer campus was begun in 1897.

Before 1860, women had few opportunities to pursue a college education.[13] Most antebellum women's colleges were religious academies where only literary courses were taught. Therefore, Milwaukee-Downer's forerunners were among the first women's colleges in general and, even more importantly, among the first that offered a true liberal arts education and science instruction. Geology was taught at these institutions almost continuously for more than a century, beginning with the Milwaukee Female Seminary in 1848.[14]

In 1852-53, a museum was founded at the Milwaukee Female College with establishment of a "cabinet of natural history."[15] A "Curiosity Society" was established in 1855 that included the "Rockites," a group under the tutelage of Increase Lapham whose members studied Wisconsin geology and collected geological specimens to add to the cabinet.[16] The Greene Memorial Museum and collection are the descendants of this cabinet. The use of museum collections and natural history specimens was considered essential for education during the nineteenth and early twentieth century when well-illustrated books were a rarity and modern audio-visual aids were unknown. As was typical for many college museums, the Greene Museum and its forerunner became the repository for collections made by students and faculty from field trips and research. In general, college museums also grew by the donation of patrons, typically alumni. Records show that a number of prominent Milwaukee women donated their collections to the Greene Museum, demonstrating that not only gentlemen assembled natural history cabinets. Assembling a cabinet was socially acceptable for women as well as men, however, these cabinet collections were typically the only available scientific outlet for women.

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[13] Stevenson, Louise L. 1991. *The Victorian homefront: American thought and culture 1860-1880.* Twayne Publishers, New York, 235 pp.

[14] Nelson, K. G. 1953. "One hundred years of earth science at Milwaukee-Downer College." *Wisconsin Academy of Sciences, Arts and Letters Transactions* 42: 143-147.

[15] Nelson, K. G. 1965. "Charles Farrar and the Ladies' Art and Science Class of Milwaukee." *Wisconsin Academy of Science, Arts and Letters Transactions* 54, Pt. A: 119-123.

[16] Kieckhefer, G. N. 1950. *The history of Milwaukee-Downer College 1851-1951.* Centennial Publication of Milwaukee-Downer College Series 33, No. 2.

In 1964, Milwaukee-Downer merged with Lawrence College and moved to Appleton, Wisconsin, becoming Lawrence University. It was decided that the Greene collection should remain where it was in order to avoid the risk of damage during a move and to preserve the original intent of the donors to keep the collection in Milwaukee where it had been collected and within the building erected expressly for the purpose of housing it. Consequently, the Greene Memorial Museum and collection was sold to the University of Wisconsin-Milwaukee along with the rest of the Milwaukee-Downer campus buildings. Most of the non-Greene Milwaukee-Downer museum collection had already been disseminated by this time, but fortunately, all the museum records, in addition to a few specimens and exhibit cases from that collection, remain in the Greene Museum today. The Greene Memorial Museum, the only Milwaukee-Downer structure still used for its original purpose, exists as an excellent example of a college museum from around the turn-of-the-century. A University of Wisconsin-Milwaukee report from May 1965, states that the museum is "a small building, but important in its usage" which "should be indefinitely preserved for the fine collection which it houses."

Documentation of museum history and operations, including records for the Greene collection and Greene family history, is better than that available at most museums in the country dating from that time period. Classes and field trips are described, the use and operation of the Museum is outlined, the involvement of a women's college museum in national meetings, such as the American Association of Museums, is detailed. Museum catalogues, Annual Reports, correspondence, and business papers from 1913 to the present are preserved. Specimens are accompanied by Greene's original collection labels, and original dealer labels exist for the minerals and some fossils. Greene's business papers and correspondence related to his collection, housed in the nearby University of Wisconsin-Milwaukee archives, are extensive. Greene's personal library comprises approximately 200 books, including some rare volumes. All of this documentary evidence provides a remarkably clear view of the life of an amateur naturalist, the assemblage of such a collection, and the role of science education at a women's college, as well as the function of a college museum during the early twentieth century.

Comprehensive and irreplaceable as the largest collection of Silurian reef fossils in North America, the value of Greene's collection for paleontological research has increased. It has considerable historical and scientific importance for future research on the geology and paleontology of the Milwaukee and Chicago areas, and also has much to offer as a research tool addressing important questions in geology and the history of science. It contains fossils from classic localities that have vanished or are inaccessible. Because his documentation is so thorough, it is possible to determine the exact geographic location and stratigraphic horizon at which the specimens were collected. The collection is invaluable for taxonomic studies because it includes type specimens and large numbers of single species that can be used in population studies and modern

taxonomic analyses. Along with this documentation, his comprehensive collecting and the intact condition of the collection has produced a collection invaluable for paleobiogeography, palaeoecology, and biostratigraphy. Although the time and money that Greene devoted to his collection might be duplicated only with great difficulty today, changes in the style of quarrying and mining due to mechanization make it impossible to gather the number and quality of specimens, and many of the quarries and mines they were collected from are closed. The Greene collection and museum is supported by detailed correspondence dealing with Greene's specimen acquisition, collecting activities, and extensive business and family records. As such, it composes an important resource for the history of science and museums, social history, and Milwaukee history during the middle to late nineteenth century.

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Kieckhefer, G. N. 1950. *The history of Milwaukee-Downer College 1851-1951*. Centennial Publication of Milwaukee-Downer College Series 33, No. 2.

Mikulic, Donald G. 1983. "Milwaukee's gentlemen paleontologists." *Wisconsin Academy of Sciences, Arts and Letters Transactions*, vol. 71, p. 5-20.

Mikulic, Donald G. 1991. The Greene Memorial Museum: Science in the 19th century. *CRM*, vol. 14, no. 7, p. 6-7.

Previous documentation on file (NPS):

___ Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
___ Previously Listed in the National Register.
___ Previously Determined Eligible by the National Register.
___ Designated a National Historic Landmark.
___ Recorded by Historic American Buildings Survey: #_____
___ Recorded by Historic American Engineering Record: #_____

Primary Location of Additional Data:

___ State Historic Preservation Office
___ Other State Agency
___ Federal Agency
___ Local Government
___ University
___ Other (Specify Repository):

10. GEOGRAPHICAL DATA

Acreage of Property: Less than one (1) acre.

UTM References:

	Zone	Easting	Northing
A	16	428520	4769735

Verbal Boundary Description:

The Greene Memorial Museum is located at 3367 N. Downer Avenue, Milwaukee, Milwaukee County, Wisconsin. The sidewalks on the east and south sides are used as boundaries; the north and west boundaries are drawn arbitrarily 30 feet from and parallel to the building.

Boundary Justification:

The boundaries encompass the museum building and its immediate surroundings.

11. FORM PREPARED BY

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Date: 31 March 1993