

PAPER

The Origin of the 'Chicago Method' Excavation Techniques: Contributions of William Nickerson and Frederick Starr

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What were the origins of the 'Chicago method' of scientific excavation? What is it and how did it get that name? Does its origin predate its popular employment at excavations in the USA during the 1930s and 1940s, and go back to institutional competition between Frederic Ward Putnam of the Field Museum and Frederick Starr of the University of Chicago? Or was it the result of the fieldwork of avocational archaeologist and one of Putnam's first students, William Baker Nickerson, who implemented it as the basis of his fieldwork, and proved its efficacy, for many years before he retired in 1921? Nickerson's detailed notes on the results of his thorough stratigraphic excavation techniques, used at many archaeological sites in Iowa, Illinois, Ohio and Minnesota, were passed on to the first University of Chicago field party doing archaeological work in Illinois, that consequently became the foundations of the later 'Chicago method'.

Introduction

The historic context of the development of our discipline helps us to understand and interpret the results of early, as well as contemporary, archaeological explorations. During the 1930s and 1940s the 'Chicago method' was widely lauded and proselytized as a new and more scientific method of archaeological excavation in the United States. Although Fay-Cooper Cole was properly given credit for being the individual who was the primary disciple spreading this message, the origins of the 'Chicago method' appear to precede Cole's involvement in archaeology. Its origin pre-dates the 1920s, and until the mid-1920s Cole's training and teaching was only in Asian (and mainly in the Philippines) ethnography. The apparently logical candidate for creating the method then would be Frederick Starr, who alone comprised the initial University of Chicago department, and as such taught archaeology and anthropology courses during his tenure from 1892 to 1923. However, evidence below suggests that it was not Starr, but a rather poorly known Illinois amateur archaeologist, William Nickerson, who was more likely the vector of origin for the method at the University of Chicago.

Moreover, I believe an important component of the introduction of more rigorous field techniques implemented by the 'Chicago method' is a generally unappreciated debt to Frederic W. Putnam and his 'Peabody Museum method'. An appropriate query would be: why haven't

the real origins been more widely recognized? Well, with respect to Starr and Putnam, there was an apparent issue of competition. Putnam, who was fresh from his successes at the 1893 World's Columbian Exposition in Chicago, had designs on the development of archaeology and anthropology in Chicago. Starr, who had just been hired in 1892, to develop a research curriculum in anthropology at the University of Chicago, fiercely sought to keep Putnam's influence out of his program, one of the results of which was fairly widely published negative comments by Starr about Putnam. The frequent but mistaken conclusion is that, consequently, Putnam did not influence Starr. And with respect to Nickerson and Putnam, while Nickerson sought permanent archaeological museum positions much of his life, he was not successful in finding one, the result of which he remains more or less 'invisible', so that most intellectual histories of American archaeology do not mention him at all, and his relationship to Putnam has been unremarked. But Putnam's work, proselytized by Nickerson, and also in part by Starr, was immensely important in defining the methodology of archaeological excavation in the Midwest of the USA, as it developed in the late nineteenth century, and as it was practiced through much of the twentieth century.

Frederick Starr: The Initial Midwest Archaeology Years

As noted above, because Frederick Starr had been hired at the University of Chicago in 1892 to create an archaeology and anthropology program, he might seem to be the logical individual to be credited as the first prophet of the 'Chicago method'. What was his background? Before working at the University of Chicago, Starr had been involved

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in archaeological research in Iowa, particularly with the Davenport Academy of Natural Sciences. Duane C. Anderson and Lynn Marie Alex highlighted the importance of Starr's work in Iowa in their seminal regional histories of archaeology. Anderson (1975: 72), in defining his 'Period of Pioneer Investigations 1870–1920', noted that:

The most important single development before the turn of the century was F. Starr's bibliography and summary of all available archeological data in the state, published in 1897. Also of significance were two publications by Duren J. H. Ward, of the University of Iowa, that appeared a few years later ... which touched on the work of Starr and the Davenport Academy ...

In her two editions on Iowa archaeology, Alex (1980: 15, 2000: 18) made a similar observation, writing that:

One of the most important contributions in the realm of research was an annotated bibliography and summary of Iowa antiquities published by Frederick Starr in 1897. This publication described the fieldwork and archaeological discoveries in Iowa to that date. While this work clearly illustrates the emphasis on mound exploration characteristic of the time (of the 244 papers listed in the bibliography, 197 deal with mounds), it also shows that data were being recovered which would provide the basis for distinguishing the major prehistoric cultures in the state.

In commenting on Duren Ward's later work, Alex (1980: 15, 2000: 18) writes that it 'exhibited an awareness and attention to detail remarkable for its day. Ward described the stratigraphy and intrusive features of a mound he excavated at Lake Okoboji, and provided a discussion of the finds and a detailed site plan and profile'. Ward, however, credited deriving his methodology from Starr's 1895 circular for the Davenport Academy (discussed below).

My focus is on Starr's possible contributions to the development of the rigorous excavation technique that became known as the 'Chicago method', and so, below is a summary of his educational background.

Frederick Starr [the third] (1858–1933) was born in Auburn, New York. He attended Lafayette College, Easton, Pennsylvania, where he received a B.A. in 1882, and a PhD in Geology in 1885. The PhD from Lafayette was perhaps more like a college Senior Honors thesis of today: he was informed by the college in 1884 that because of his B.A., it was the school's policy that 'the degree of PhD is conferred on our graduates of three years' standing after special examinations and writing of a thesis' (McVicker 2012: 6). He taught with his B.A. in 1882–1883 as a professor at the State Normal School in Lock Haven, Pennsylvania (now Lock Haven University of Pennsylvania), and in 1884 he was named professor of geology and biology at Coe College, Cedar Rapids, Iowa, a job which he held

until 1887 (Cattell 1910: 446–447; Evans 1987: 10–11). After leaving Coe College in 1887, Starr returned home to New York for the next few years, but when William Rainey Harper became President of the University of Chicago in 1891, he recruited Starr, and Starr came back to the Midwest to start an anthropology program at Chicago in 1892.

At some point when he was young, Starr apparently visited, for a period, in Iowa, because in a speech in 1901, celebrating the 33rd anniversary of the founding of the Davenport Academy of Natural Sciences, he recounted that he had first learned of the Academy's work twenty-five years earlier:

When a schoolboy in Iowa, he had been attracted by the reports of its meetings, and especially in its exploration of mounds. Ten years later, when teaching at Coe College in Cedar Rapids, he felt the need of a scientific library, and came to Davenport, where he spent ten days studying in the Academy's library and museum. (*Proceedings of the Davenport Academy of Natural Sciences* 1901, 8: 314)

The first professional evidence of Starr's interest in archaeology was not until after he had been teaching at Coe College for two years. The *Proceedings* of the Academy (1893, 5: 230; 1899, 7: 290) reported that Starr became a Corresponding Member of the Academy as of August 27, 1886, and that on October 29, 1886, he borrowed several books on scientific subjects from their library to take with him to Coe College. Almost immediately, in November of 1886, Starr was involved in his first (and apparently only) actual excavation. He and a colleague conducted explorations in two mounds near La Valley, Lyon County, on the Burlington Railroad and Little Sioux River in northwestern Iowa (Starr 1887, 1888a, 1893a). While the materials excavated, such as human burials, a red stone pipe, copper and iron objects, buckskin wrapped around a dog, and a horse skeleton, were observed in the various 'layers' of two mounds, Starr and his friend did not seem to have excavated in any stratigraphic or orderly manner.

The books borrowed from the Davenport Academy also helped Starr prepare for the course in anthropology he began teaching at Coe College in 1887, the first such course in Iowa (Alex 2000: 18; Anderson 1975: 72). For a few years he maintained his earlier interest in physical sciences as well as developing an increasing interest in anthropology. For example, within a two month period in 1887, he solicited funds from the Davenport Academy not only to prepare a bibliography of Iowa archaeology, but also to conduct a survey of thunderstorm activity in Iowa (*Proceedings of the Davenport Academy of Natural Sciences*, minutes of meetings of March 25, 1887 and April 29, 1887. Vol. 5, 1893: 258–259; Starr 1893b).

Starr's initial anthropological focus was on the local Iowa archaeological cultures. He published a few articles in the *American Antiquarian* on his 1887 excavations (Starr 1887, 1888a, 1905) and also a note on some artefacts in the Davenport Academy (Starr 1888b) and on

regional questions (Starr 1890). As part of his research, he sought comparative materials from other sites in Iowa, and prepared a 'Bibliography of Iowa Antiquities' that he presented at a meeting to the Davenport Academy on March 25, 1887 (*Proceedings of the Davenport Academy of Natural Sciences* 1893, 5: 258). This 'Bibliography' became the first of a five-part proposal he developed for synthesizing Iowa archaeology (Starr 1897a, 1897b). Due to funding difficulties, the bibliography was not immediately published. Hence Starr updated this bibliography in 1892; it was listed as being 'in press' in the Preface of Volume 5 of the *Proceedings* in 1893; and it was finally published in Volume 6 in 1897 (Starr 1897a), ten years after the first version had been prepared.

Starr continued his interest in a grand synthesis of Iowa archaeology, but for the second phase of his work, because of his experience with the bibliography, he told the members of the Davenport Academy that he would only go forward writing a 'summary' of the archaeology of Iowa if the Academy would agree to publish it, which the Academy voted to do at a meeting on April 28, 1893 (*Proceedings of the Davenport Academy of Natural Sciences* 1897, 6: 321). His summary of Iowa archaeology was first presented to the Academy in 1895, and published as a separate report on February 9, 1895 (*Proceedings of the Davenport Academy of Natural Sciences* 1897, 6: 351), although it was not published as an official part of the *Proceedings* until 1897, and was also summarized in a review in *Popular Science Monthly* that year (Starr 1897b, 1897d: 96). In this summary, Starr (1897b: 53) laid out his proposed five-part plan for the development of Iowa archaeology, noting that it had been 'several years since I planned the work of which this is a part ...'. His five-part plan (bibliography, summary, fieldwork, publication, education) was as follows:

- (a) Preparation of a *bibliography*, that workers might know where to look for the literature. [This was published as Starr 1897a]
- (b) Publication of a *summary*, that those interested, who do not have access to libraries, may know what has been done. [This was his 1897b paper]
- (c) Organization of exploration in every part of the state; collection of data, diagrams, plans; making of a working map, showing the location of mounds, shell-heaps, trails, village sites, etc. – in other words, *field-work*.
- (d) *Publication* of a final report of the work done under such organization, and a separate publication of the map worked out by the exploration.
- (e) Preparation of a pamphlet of illustrations of 'Iowa types' of archaeological specimens and of a series of plaster copies and models of remarkable specimens, mounds and the like, for distribution to universities, high schools, colleges, and scientific and historical societies within the State. This *educational work* is the most important and significant part of the whole plan, and can only be done well after the other parts have been performed. (Starr 1897b: 53)

Starr continued with developing the third part of this plan by working to establish more scientific fieldwork procedures in the state. He had been appointed the 'Director of Archaeological Study' for the Academy in 1895, a position he held at least until 1900, although he had already moved to Chicago to pursue his duties at the University of Chicago. One of the first tasks he undertook as 'Director' was to prepare instructions for Academy members and other residents in Iowa on the proper methods of archaeological exploration. On May 31, 1895, Starr 'spoke at some length on the subject of "Archaeological Research"' (*Proceedings of the Davenport Academy of Natural Sciences* 1897, 6: 339). On June 28, 1895, the 'Circular of Suggestion regarding work in Archaeology', drafted by a committee headed by Starr, was published as a separate circular and sent to every newspaper in Iowa, where it was reported to have 'engendered interest and response' (*Proceedings of the Davenport Academy of Natural Sciences* 1897, 6: 351), and subsequently was included as an official part of the *Proceedings* in 1897 (Starr 1897c).

An examination of the excavation methods recommended in this circular shows that they were based principally on the 'Peabody Museum method', which Frederic Putnam already had been circulating around the country for a bit more than a decade (Browman 2002). Among the suggestions for excavation procedures in the Iowa document were the following, which as noted, in large part replicate those already being advocated by Putnam as part of his 'Peabody Museum method':

2. Groups of mounds should be carefully surveyed and plotted. The plottings should show the location, relative positions, form and size of all the mounds in the group, and their relation to surrounding topography.
3. No mound should be excavated until it has been properly surveyed, plotted, and described. Proper excavation is slow and careful work. The best method destroys the mound, but gives absolute knowledge of construction and contents. It consists in removing the whole tumulus, slice by slice. First, a trench is dug tangent to the mound; this trench, at its middle point, touches the mound; it should be a little longer than the greatest diameter of the mound, and should be carried to a depth of a foot or two below the natural surrounding surface. Then a slice of the mound adjacent to this trench is removed. The earth of these slices should be examined with great care as removed. Every object found should be at once numbered, and a note made of its exact position. ... After a mound has been properly excavated, it should be possible to reconstruct it with every article from it exactly placed, by reference to the notes made.
- ...
5. Shell-heaps should be carefully cut across and picked to pieces along the exposed section; a diagram showing stratification of the heap, relations of the shells to underlying and overlying deposits

included, and the thickness of the layers should be drawn. ... The position of each object found should be exactly noted.

6. Rock-shelters ... The objects found should be located and dealt with the same as mound finds. (Starr 1897c: 342)

Thus we can see that Starr started out with a rather useful plan for the investigation of Iowa archaeology. The first two parts that he completed have been widely appreciated by Iowa researchers with an interest in history of archaeology. He had just outlined a rigorous methodology to attain his third goal with this 'Circular of Suggestion', but unfortunately, his career took another trajectory at this point, and he never finished work on the last three parts of his plan. The last extended work Starr did at the Davenport Academy was in November and December of 1901, when in order to secure funds to continue enlarging his new collections of Mexican archaeological and ethnographic materials at the Walker Museum at the University of Chicago, he spent two months 'revising the archaeological collections' of the Academy (*Proceedings of the Davenport Academy of Natural Sciences* 1904, 9: 281). Although he maintained contact with the Academy for a few more years, it was mainly to solicit their support for travelling to various meetings such as to the 13th International Congress of Americanists in 1902, or the 10th International Geological Congress in 1906 (*Proceedings of the Davenport Academy of Natural Sciences* 1904, 9: 288; 1907, 10: 179).

But back to the links to the 'Chicago method'. Did Starr in fact transfer this methodological approach in archaeology to the University of Chicago? It does not appear so – although he seems to have begun his academic career with an interest in archaeology, this ceased shortly after the turn of the century. As I noted above, Starr's job with Coe College ended in 1887 and in 1888 he returned east to his ancestral home in Auburn, New York, where he took a position as Registrar and Correspondence Instructor for Chautauqua College in New York. Although not teaching the subject, he continued the interest in archaeology he had shown at Coe; e.g., Thomas Wilson (1890: 695) reported in his summary of responses to his 1888 circular requesting examples of American palaeolithic tools, that Prof. Frederick Starr, of Auburn, New York, had responded June 26, 1888, listing an example of such a tool he had from the Trenton gravels.

Starr then moved to work in the Department of Ethnology at the American Museum of Natural History, in New York City, where from 1889 to 1891 he was responsible for helping to classify and label collections. In 1891 he was hired as Professor and Dean of Science at Pomona College, Claremont, California, but in 1892 William Rainey Harper hired him as Assistant Professor of Anthropology and Curator at the Walker Museum at the University of Chicago (Evans 1987: 15; Miller 1978: 50–51).

Starr came to Chicago with the idea of establishing one of the first departments of 'scientific anthropology' in conjunction with a great museum (McVicker 1989: 115). He

hoped to secure the lion's share of anthropological exhibits remaining at the end of the 1893 World's Columbian Exposition, and thus in 1892 he tried to hire Warren K. Moorehead to help him accomplish this task. But University President Harper would not authorize the funds (Darnell 1969: 162, 1998: 112).

After securing his position at the 1893 Exposition, Frederick Putnam was interested maintaining a strong presence in Chicago. Initially Putnam was given control over the bulk of the fair's anthropological collections, and he had designs on transferring these collections at the fair's end, to a newly created Chicago museum in which he would be involved. This made Starr unhappy, as he therefore saw Putnam as a major threat to his own plans, and he wrote President Harper on March 21, 1892:

I am somewhat sorry that Prof. Putnam will be at the head of the city museum. It will cripple our work in archaeology and effect us in that seriously. This is however, of course, the least important of the three branches into which my work will naturally fall. Utterly unacquainted with Ethnology & Physical Anthropology he is not to be feared outside of Prehistoric Archaeology. At the same time that field is one in which I had hoped to gain a good deal of public sympathy for the University throughout Illinois & Wisconsin ... Do we intend to gather a Museum? If so I ought, of course, as in charge of the subject of Anthropology to be Curator of that section of the Museum. (Evans 1987: 54)

Most of the relevant anthropological collections from the Chicago Exposition ended up going to the newly created Marshall Field Museum, but Starr did get some collections from the Exposition for the university. Franz Boas (who was then working with Putnam on handling the Expo's anthropological collections), Harper, and Starr worked out a joint agreement through which the university purchased the materials that were to be used in its systematic (anthropology, neurology, experimental psychology) and special (North American Indians, physical and mental development of children, criminal anthropology) laboratories (Evans 1987: 63, November 21, 1892 letter Boas to Harper) and also some other materials such as Moorehead's Hopewell Collection (McVicker 1986).

However, in 1902 President Harper redefined the function of the university's Walker Museum, deciding to cease funding acquisitions of anthropological collections because of the propinquity of the Field Museum, and because of the cost of securing and curating collections. Owing to the loss of the university administration's support for his previous artefact collecting activities, Starr decided to sell the department's archaeological collections, which he did in 1905, and shifted his research focus to salvage ethnography (McVicker 1986: 8). Thus while Starr, initially, continued his interest in Americanist anthropology and archaeology when he was hired by the University of Chicago in 1892, he soon shifted his regional collecting focus from the Midwest U.S.A., first to Mexico,

and then to Africa and the Far East. Then archaeology got left behind as Starr activated his own version of 'salvage ethnography' for the university's department, in addition to studies he called human 'deformates' (McVicker 2012: 57) as part of his long-term fascination with physical anthropological measurements. Some of this was presaged in his report listing the courses he offered during this first four years at the University of Chicago, where he had taught the following at least one time: General Anthropology, General Ethnology, Ethnology: the American Race, Physical Anthropology: laboratory work, Mexico, Japan, and lastly, Prehistoric Archaeology: European, and Prehistoric Archaeology: American (Starr 1897e: 2–3).

Thus Starr's interest or involvement in Americanist archaeology appears to have essentially ceased after 1902 when he began disposing of his collections. This makes him an unlikely candidate for any contribution to the 'Chicago method' three decades later. Moreover, we see that the method that Starr had been previously advocating in Iowa had been basically just a regurgitation of Putnam's suggestions. So is there another avenue for the origins of the 'Chicago method'? I believe 'yes' and think it came from William Nickerson.

William Baker Nickerson: Pioneer Midwestern Archaeologist

William Baker Nickerson (1865–1926), who was born at Deep River, near Meriden, Connecticut, was an extremely active avocational archaeologist, who ultimately learned his excavation techniques from Frederic Putnam in the 1880s. Nickerson employed these techniques for nearly four decades at a number of mound excavation projects in Illinois, Iowa, Massachusetts, Michigan, Minnesota, Ohio and Wisconsin in the United States, and in Manitoba, Canada. After his death in 1926, his wife Minnie Jane Tonkin Nickerson was the agent for passing these methods on to the first University of Chicago field party doing archaeological work in Illinois, which appears to be the avenue of origin for the later 'Chicago method'.

Between 1883 and 1887, Putnam began, in earnest, developing his research and teaching program at the Peabody Museum for American Archaeology and Ethnology at Harvard University. Putnam initiated a major lecture series on archaeological methods and results, lecturing at the Peabody Museum, as well as at other universities and in lecture halls in the region. He also accepted three individuals that he explicitly referred to as his first 'students' – John C. Kimball, William B. Nickerson, and Cordelia A. Studley – thus making Putnam the first *de facto* university instructor of anthropology and archaeology in the United States.

Previously Nickerson had conducted amateur mound excavations (and subsequently continued doing this) when he was on vacation, or furloughed from his regular job, because in order to conduct his archaeological work he supported himself, for most of his life, through work as a railroad surveyor, signal tower operator, and telegraph agent. The earliest communication found in the archives at the Illinois State Museum and at the Peabody Museum

between Nickerson and Putnam is a letter of July 14, 1884 in which Nickerson approached Putnam for funds to continue a mound survey he had been conducting in the Fox River Valley near Elgin, Illinois. Subsequently, in 1885, his railroad employer transferred Nickerson back to the northeastern states, where he seems to have been alternatively situated at a railroad station in Millbury, Massachusetts, and another at Meriden, Connecticut (Browman 2002: 253).

Now living back in his natal New England, Nickerson proceeded to contact Putnam anew, and arranged for a meeting with Putnam at the Peabody Museum in April of 1885, a point which marks Nickerson's recruitment by Putnam as one of the first official students in anthropology in the country. Nickerson thus is found listed as a 'student' for that year on the masthead of the annual report of the Peabody Museum (Putnam 1885: 388). In 1886, Putnam (1886: 494) reported that:

for about a year Mr. W. B. Nickerson has been engaged as a volunteer assistant in field work for the Museum. In March, 1885, he partly explored a group of burial mounds in the Fox River valley, near Elgin, Illinois ... afterwards he was associated with the [museum's] work in Ohio ...

The Peabody Museum accession catalog from 1885 includes materials collected by Nickerson from three locales: the Fox River Mounds, Elgin, Illinois; Scapell Hill, Millbury, Massachusetts; and Anderson township, Newton, Ohio (Putnam 1886: 506).

In 1886 Nickerson continued to work on mound excavations in Ohio with Putnam, and with Putnam's associate there, Charles Metz (Putnam 1888: 37). Nickerson was a quick learner and astute observer. According to Dr. Penelope B. Drooker (personal communication, 1999), Nickerson was the first person working on the Ohio mounds to notice and map rows of postholes. But by the end of that year, he had left the Peabody Museum. Regarding the reason for Nickerson's, and also another of the first students, Cordelia Studley's, departures that year, Putnam explained:

it is with regret that I am called upon to state that two of our former collaborators have been obliged for pecuniary causes to seek other fields of labor, and the loss of their assistance is one of the reasons that has led me to suggest the possibility of the foundation of a form of scholarships, by which means might be at hand for the support of deserving students or assistants ... The first called from us is Mr. Nickerson, a young man, who, during the time he was associated with us in our work of special explorations in the field, evinced an aptitude for archaeological research which I greatly regret could not have been further encouraged by providing a small salary for his support. (Putnam 1887: 568)

Thus, during 1885 and 1886, Nickerson received direct hands-on instructions from Putnam on archaeological field methodology in the lab at the Peabody Museum, and in the field at Putnam's mound excavations in Ohio.

For the next decade, Nickerson moved around the Upper Midwest, being employed at various railroad stations in Michigan and Illinois. He continued to send Putnam reports of his mound exploration work, along with boxes of artefacts collected in these excavations (Browman 2002: 253–255). During this period Nickerson tried to secure a position as a field archaeologist for a museum, enlisting Putnam's recommendation in support of his applications for possible job opportunities at the University of Wisconsin, the University of Chicago, the University of California, and the Field Museum, as well, of course, at the Peabody Museum.

Beginning in 1893, Nickerson was situated for a long period of time at Portage Station in Galena, Jo Daviess County, Illinois, and had the luxury of mounting some long term research. Prior to embarking on his first major mound excavation project in the Galena area, Nickerson wrote to Putnam on April 3, 1895, checking to make sure that he remembered the Peabody Museum procedures properly:

As I understand it, a mound should be taken down in the inverse of the order of its creation, when necessary, in order to understand the structure; trenching of course to find the strata and to obtain an occasional plan section. The Ohio experience gave me an insight into the use of the compass in locating and subsequent charting that is simply invaluable. (quoted in Browman 2002: 255)

In a letter of October 29, 1895, he continued checking his recollection with Putnam on the 'Peabody Museum methodology' for mound excavation, referring to his understanding that the method involved employing a larger grid system with right-angle axes, which were utilized in dividing the mound into five foot grid sections, and then subdividing each five foot section into four block units of 15 inches each, in both horizontal and vertical measurements (Browman 2002: 255).

During this period, Nickerson made extensive maps of many mound complexes in Jo Daviess County, conducted a series of exploratory excavations in various mounds supported, in part, by funds from Putnam and the Peabody Museum, and sent several artefact collections from this work back to Cambridge. He also began writing his only book-length manuscript on his archaeological research, summarizing his excavations and findings in Jo Daviess County. This manuscript apparently went through a number of drafts. A much revised version was sent to Putnam in 1906, but Putnam returned it again, with the marginal notation that it was not yet of a style appropriate for the Peabody Museum Memoir series. Nickerson continued reworking this manuscript, sending back later drafts, with the last one sent to Putnam in 1913, after he had retired from the Peabody Museum, and only shortly before his

death. Later, as noted below, this manuscript ended up at the University of Chicago (Nickerson 1913b).

Nickerson was proud of having learned his methods at the Peabody Museum, referring to Putnam's help in letters and publications. Although explicit description of the field methods was sparse in earlier letters, limited to shorthand reference such as employing the 'slice method' in various mound excavation projects, he was more explicit in the letter of October 29, 1895, summarized above, discussing his excavations at Galena, Illinois. Both in this letter, and subsequently in the Jo Daviess draft reports, he explicitly outlined the methodology he had learned from Putnam as follows: utilizing sections of five feet length and width, defined by intersecting a right-angle grid system; subdividing each vertical face of each section into four 'blocks' of 15 inches on a side, for closer excavation and profiling control, both horizontally and vertically, as necessary; and numbering all materials collected in a daily running catalog, which recorded all finds by grid units, sections, blocks and depths.

The method that Nickerson parses and employed is what was called the 'Peabody Museum method' of excavation, most explicitly detailed by Putnam in Lecture No. 38 of his mid-1880s flier-advertised Lecture Series of talks, entitled *On the Methods of Archaeological Research in America*. Unfortunately, as far as I could ascertain, there are no archival copies of this lecture material. However, because it subsequently became the basis of the 'Chicago method' nearly half a century later, which then became the forerunner of most American field archaeology methodology of the twentieth century, it is worth recounting a bit more information on this 'Peabody Museum method'. The earliest detailed account we have of the method is a summary of Putnam's presentation of Lecture No. 38 at Johns Hopkins University Graduate School on December 15, 1885, where an audience member detailed Putnam's presentation of the Peabody Museum excavation method as follows:

He then described the methods which should be followed in explorations, in order that everything found, from a chip of stone to an elaborate piece of carving, seeds, nuts, corn cobs and bones of animals ... shall show their associations ...

Trenching and slicing, he said, could be used to express in general terms the method followed in field work. For instance, in exploring a mound, a trench is first dug at the base of the mound. A slight vertical wall is made thereby showing the contact of the edge of the mound with the earth upon which it rests ... This wall is the first section of the exploration, and its outline should be drawn or photographed and its measurements noted. For the latter purpose it is best to stretch two strings over the mound, one north and south, and the other east and west, and to take all measurements from those. After this first section is made, the work is carried on by slicing, or cutting down about a foot at a time, always keeping a vertical wall in

front, the whole width of the mound. Each slice thus made is a section, and whenever the slightest change in the structure is noticed or any object found, that section should be drawn or photographed, and measured as at first, and the exact position noted of any object, ash bed, or change in the character of the structure of the mound. (Anonymous 1886: 90–91)

Nickerson employed this method for many years after learning it from Putnam in 1885–1886. While he was initially content to be seen as an avocational archaeologist, the period of 1905 onward marks a point in Nickerson's career when increasingly, he came to see himself as a professional archaeologist. Apparently no longer depending on Putnam and the Peabody Museum as his only professional outlet, he began publishing summaries of his work in Illinois in the archaeological journal *Records of the Past* (1908a, 1908b, 1911, 1912). He was pleased to finally begin earning a significant part of his income from archaeology, first being hired to conduct a season of mound excavations for the Davenport Academy of Sciences in 1908, and then being hired to conduct several seasons of mound explorations and excavations between 1912 and 1916 for the Minnesota Historical Society and the Anthropological Division of the Geological Survey of Canada (Nickerson 1913a, 1914, 1963, 1988). Regrettably World War I intervened, and brought a temporary end to the ability of these agencies to fund archaeology, and Nickerson seems to have retired, with only one last paid season of work in Iowa and Illinois in 1921 (Browman 2002: 257).

Fortunately for Americanist archaeology, Nickerson kept extremely detailed notes of the excavation techniques he had learned from Putnam. After his death, these notes fortuitously fell into the hands of Paul S. Martin, student director of Fay-Cooper Cole's very first field crew from the University of Chicago, a group which had been tasked with exploring Jo Daviess County in 1926. After a rather unsettling beginning, Martin and the neophyte Chicago field party were casting about for a more appropriate techniques to excavate mounds, and a local informant referred them to Nickerson's widow Minnie. She turned over to Martin, and the Chicago field crew, all of Nickerson's daily notes, sketches, maps, photos, and plans, as well as a copy of the 1913 book-length manuscript on Jo Daviess County (Nickerson 1913b). In his evaluation of these materials and methods of Nickerson, Martin wrote:

A cursory examination of his notes, plans and final report were enough to convince us that he was a most careful worker – almost too careful – and very scientific. His method of digging mounds was modern as was all his work. ... I shall recommend to Dr. Cole the publishing *in toto* his final report, because the Peabody has known of it for 29 [sic] years and have never published or mentioned his work, although done for them, and the work was of a most important type and is a real chapter in

the sadly needed book of mound information. This work must be published ... (Paul Martin and John Blackburn 1926 mss, August 11, 1926 field notes)

The Chicago students were clearly stunned with superiority of Nickerson's methods. They quickly abandoned the unscientific techniques they had been employing, took over Nickerson's methods, convinced Cole of its merits when they returned to campus, and within a few years, the 'Chicago method' of excavation was being widely heralded around the country as a new technique, one of the best in the field, but ironically nothing more than a revised version of Putnam's original Peabody Museum method.

Conclusion

In looking at the history of the scientific method emanating from the University of Chicago in the early twentieth century, I have elected to focus on Nickerson and Starr as key individuals in this historical perspective on the origins of stratigraphic excavation techniques, particularly in mound explorations associated with the University of Chicago archaeological fieldwork. Both Starr and Nickerson explicitly promoted and, in Nickerson's case, actually employed the rigorous Peabody Museum method of mound exploration. As noted, Nickerson's detailed notes on the Peabody Museum method were rediscovered by the University of Chicago anthropology department students in their first field season in 1926, adopted wholesale, and later renamed the 'Chicago method', usually credited to Fay-Cooper Cole, or to Cole and his subsequent field archaeology supervisor Thorne Deuel. It is this renamed 'Chicago method' and its later modifications that were the primary methods employed in field explorations in the United States throughout most of the twentieth century. Surprisingly, Starr, although a professor in the department at the University of Chicago from 1892 to 1923, has left relatively little lasting impact on the field; it is the unheralded amateur Nickerson who is the hero of this tale.

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