
**MATERIAL CONNECTIONS:
“The Smithsonian Effect” in
Anthropological Cataloguing**

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SMITHSONIAN INSTITUTION**ABSTRACT**

Museum curators led development of the discipline of anthropology in the late nineteenth century, and at the same time developed foundational systems for cataloguing cultural materials. Although entering and accessing catalogue information now relies on keyboards rather than inkwells, the earliest systems continue to influence our understanding of objects. Among the most influential of the early systems was that of the Smithsonian's United States National Museum (USNM), with its first anthropological catalogue entry dating to 1859. Analysis of the material culture of the ubiquitous catalogue books of American museums both before and after the establishment of the USNM system reveals its wide and lasting impact. This system normalized certain fields as essential and disciplined data accordingly, resisting alternate ideas about information offered by donors and by later developments in anthropology. While many museums have now moved through successive generations of information management systems, the effect of early data choices has seldom been examined. [museums, history of anthropology, information management]

In the late nineteenth century, museum curators were engaged in two activities with lasting impact: establishing the field of anthropology and creating systems to catalogue cultural materials. The field of anthropology has grown far beyond the walls of the museum and our understanding of culture has moved far beyond early anthropological concepts and theories. Early cataloguing systems, however, continue to exert an often-unacknowledged influence over current information management practices.

Museums of the twenty-first century justly celebrate their capacity to make collection catalogues available online, opening broad access to their holdings. This public access has provided an enormous impetus for the production of digital images of collections. For many museums, this is considered a

prerequisite for placing a record online. Attention and resources have been focused on visual enhancement. Much less attention and fewer resources have been devoted to the textual catalogue data, the associated documentation that provides context for the images. This textual information, however, shapes viewers' intellectual responses to the online object and, ultimately, influences how museums contribute to the understanding of cultures. Museums often acknowledge and bemoan absences and inaccuracies in their information, and data enhancement is an important goal. However, anthropologists also need to think more deeply about the nature of collection catalogues and how their structure influences knowledge production. We need to become more aware of the hidden impact of nineteenth-century cataloguing decisions as we chart a course for the future.¹

Examination of one catalogue record from the Smithsonian's Department of Anthropology shows how a system can privilege some pieces of information while silencing others (Figure 1). Catalogue Number E165,844 contains a brief record in the online catalogue, describing it as a Cheyenne cradle, locality North America, received from Rev. Heinrich R. Voth, Accession Number 26674. The record does not include a picture of the object, but it is enriched with images of earlier generations of paper catalogue records. From these we learn that it was purchased from Voth as part of a larger collection using funds from the Bureau of American Ethnology (BAE). The cradle is adorned with beads and shells; it was treated with pesticides upon receipt, entered into the catalogue record in 1893, and present in storage during a 1978 inventory.

The catalogue draws attention to certain elements: the physical form of the object, its ethnic categorization, the name of the collector, the finances of acquisition, and management practices within the museum. Through silences of omission, the record draws attention away from other elements that might have entered the catalogue, such as the name, family, position, or gender of the maker or user; the dislocation of the Cheyenne onto separate reservations and from which the cradle came; or Voth's position in the community as missionary and as collector. Yet Voth carefully applied tags to each item, providing “the names of the parties of whom the articles were obtained” and often much more.² These tags are now

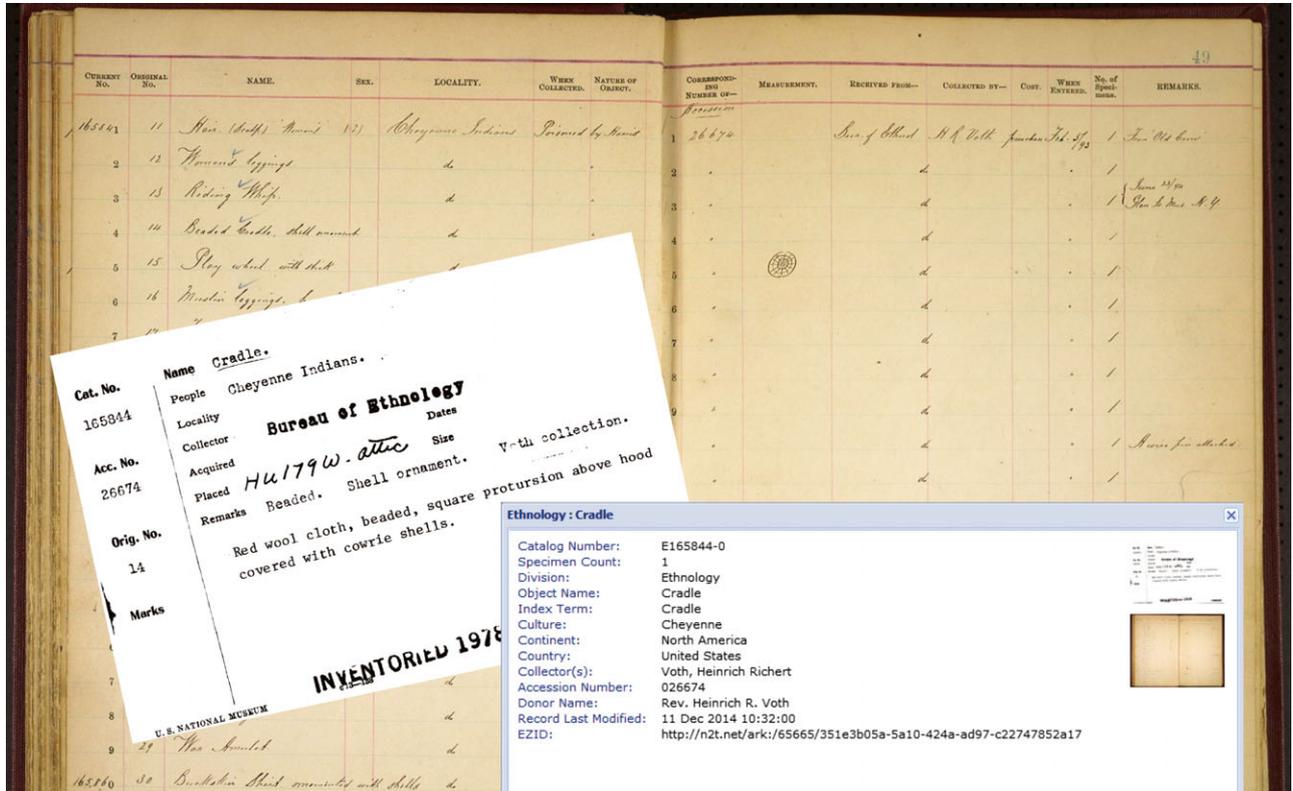


Figure 1. Three generations of catalogue records for a Cheyenne cradle, Catalogue Number E165,844. The most recent online record reveals its direct descent from the original 1892 record in the catalogue ledger and the data choices imposed at that time. (Photo by Candace S. Greene.)

largely lost, but the few remaining fragments suggest the range of information offered: “This coat was gotten (by Black Coyote) from the Kiowas. The Cheyennes & Arapahoes sometimes trade or purchase articles of clothing (especially buckskin) from other tribes.”³

Of the range of information provided by Voth and other donors, the catalogue chose to emphasize “object in museum” and to elide other contexts, such as “object in community” and “object in circulation.” All of these contexts are of interest to anthropologists today, but the catalogue privileges only the first.

Museum collections have been assembled to document and enhance understanding of cultural behavior. The catalogue was intended to record the associated information curators thought was necessary to support that study. As the Cheyenne cradle record shows, the information in the catalogue facilitates certain kinds of understanding and resists others. Clearly there is a disjuncture between the scant data of the catalogue and current interests in anthropology. However, I would argue that despite the co-evolution of anthropology and museums, the misalignment of catalogue information and

anthropological interests is not new. Certain pieces of information were designated as basic and essential early in the history of museum cataloguing, and while anthropological interests have shifted many times over the ensuing decades, catalogues have not. Those early decisions have had a powerful and lasting impact. Cataloguing fields are now so deeply engrained in museum practice that they have become naturalized, invisible, and seldom questioned.

In this article I trace the history of one particular catalogue system, that of the Smithsonian’s Department of Anthropology, a unit within the National Museum of Natural History (NMNH). It was an early system, and it was highly influential on the practices of cataloguing at other American museums with ethnographic and archaeological material. Many parts of this history will seem very familiar to staff at other museums, as they examine their own catalogue histories. The issues that the Smithsonian’s anthropological catalogue raises are thus more widely relevant. It is also a system with which I have worked for years and am intimately familiar. I believe that the practice of anthropological cataloguing needs to be critically

revaluated, and I have therefore focused my critique on the institution with which I am most closely associated. Years of museum work have also made me aware of the many quotidian factors, such as backlogs, staffing shortages, and urgent preservation demands that have always impacted cataloguing decisions. Working against such constraints, we often measure progress as movement along an established path. Periodically, however, we should pause to question how we got onto this path and whether it is taking us where we want to go. We need to apply reflexive thinking to cataloguing practices.

THE USNM AND SCIENTIFIC CATALOGUING

Most of the systems in the United States for cataloguing anthropological materials can be traced directly or indirectly to the USNM, the first and for many decades the only museum within the broader Smithsonian Institution (SI).⁴ The SI was founded in 1846 by an act of Congress that accepted the bequest of the wealthy amateur geologist James Smithson to establish an institution for “the increase and diffusion of knowledge.” There ensued much public debate on the methods through which these lofty goals were to be implemented, and the first secretary of the institution, Joseph Henry, was strongly opposed to the establishment of a general museum, realizing the burden it would place upon the operating funds. Nevertheless collections came, and soon a central Smithsonian museum was organized, the USNM, under the management of Assistant Secretary Spencer Baird. Baird, a naturalist with particular interest in birds, had himself brought a massive personal collection when he joined the Smithsonian in 1850. It was a time when collections were viewed as an essential part of the basic toolkit of verifiable research, a basic function of the Smithsonian’s mandate for “the increase of knowledge” (Ewing 2007; Goode 1895; Rivinus and Youssef 1992; True 1929).

Anthropological inquiry was a part of the SI from its earliest days. The first records in the catalogue of the Division of Ethnology, as it was then termed, were entered in 1859.⁵ They are written in elegant script in a large bound volume with neatly printed columns and rows. Columns carried headers defining the nature of the information to be entered, while rows were conveniently pre-numbered with the repeating series of 0 through 9 (Figure 2). The cataloguer had only to

write in the preceding digits. It is remarkably orderly and carefully preconceived, an efficient system with which to meet the challenge of creating intellectual order within the massive backlog of collections from government expeditions and other sources transferred to the new institution. Included in the volume’s entries were objects from Thomas McKenney’s 1820s Indian Museum at the War Department, items acquired by Admiral Matthew Perry on his historic visit to Japan from 1852 to 1854, and most notably many thousands of items from across the Pacific collected during the Wilkes Exploring Expedition of 1838 to 1842. At this time, the Smithsonian also supported anthropological research, and its first publication was a volume on the ancient mounds of the Mississippi Valley (Squier and Davis 1848).

When the USNM was founded, those involved were very conscious of the museum’s professional significance in a young nation seeking to build its scientific credibility. I felt certain that they would have documented their decision-making process as they weighed options and discussed best practices. It turns out that I was much mistaken. While the institution issued statements insisting that this was to be a scientific museum, in contrast to a place of popular entertainment (Henson 2004), policy statements were largely silent on the topic of the catalogue. Decisions on such basic but mundane topics were evidently left to Spencer Baird’s discretion and called for no written comment. In the Smithsonian Annual Report for 1857, Baird described the adoption of a ledger-style catalogue and its fields, noting that work “is complete for the mammals, birds, and osteological specimens, is well underway for the reptiles and fishes, and some orders of invertebrates” (Baird 1857, 50). Work in anthropology, then called ethnology, began two years later, using the same form of catalogue that Baird had designed for the biological departments (Figure 3).

Examination of early museum ledgers reveals that they were designed to serve the field of biology; it also reveals the impact of their design on anthropological cataloguing. Baird’s original catalogue for his personal collection is retained in the museum’s Division of Birds, together with the first USNM Bird Division catalogue into which his entries were transferred. The USNM version is a precise copy of Baird’s ledger. It differs only in that his hand-ruled columns have been

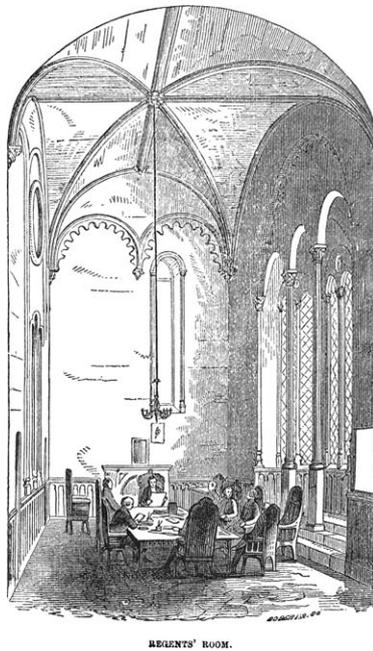
| CURRENT No. | ORIGINAL No. | NAME. | SEX. | LOCALITY. | WHEN COLLECT'D. | NATURE OF OBJECT. |
|-------------|--------------|--|------|---|-----------------|-------------------|
| 1876 | | Dish or Bowl of Cemented ^{work} Basket | | Grand Riv. Utah Indians | | |
| 7 | | Horn Ladle | | Raphael R. | " | " |
| 8 | | Plaited Hair + Head Ornament | | " | " | " |
| 9 | | Dress Ornament of ^{+ Brass Plates} Plaited Hair | | Green Grand R. Ta-a-wash Indians | | |
| 1880 | | Indian Root-Bread. | | Pitt R. Sierra Nevada. Cal. | | |
| 1 | | Head Ornament of Young ^{Boys} | | Green River. ^{4 beads + horn + plate} Ta-a-wash Ind. | | |
| 2 | | Bow of Big Horn ^{with sinews} wound. | | Digger Indians Cal. | | |
| 3 | | Quiver of 14 Arrows. (Iron points) | | ditto ditto (with No. 1882) | | |
| 4 | | Obsidian Pointed Arrows. | | ditto ditto | | |
| 5 | | Girdle of Human Hair | | Shasta Inds. Sacramento R. Cal. | | |

Figure 2. Detail of the USNM catalogue ledger for the Division of Ethnology, 1866. The cataloguer was creative in inserting information on cultural identity within a structure of column headings that privileged object names and geographic localities. (Photo by Candace S. Greene.)

replaced with print-ruled columns, headed with what we would now call “data fields” into which information on species and locations has been transferred in a neat grid. The use of Baird’s system as a model for cataloguing the USNM bird collection is not surprising. The surprise to us today is that the USNM used the same system for cataloguing the anthropology collection. The catalogue books for the two divisions are identical, from the blue tinted paper down to the field headers printed at the top of each column.

The outcome of the choice of a natural history model to catalogue cultural materials is evident in examination of the records. Cataloguers working in the Division of Ethnology dutifully followed the specified data fields fairly closely, although they chose to ignore the columns headed “Collecting date,” “Nature” (e.g., nest, egg, skin), and “Sex.” Not surprisingly, their main difficulty seems to have been where to enter a cultural designation. At times they included

it in the column “Name,” adding an ethnic designation to the object name, to create entries such as “Tlingit basket” in the field that Baird had used for scientific name. In other instances, the “Locality” field was used, and a cultural term was entered along with or instead of a geographic location: “Indians of the Upper Missouri” or “Pai-Utes, S. Utah.” In many cases, cataloguers limited themselves to information defined by the headers, and no culture was recorded. The “Remarks” column at the end of each row offered an opportunity for further comment, but that column was seldom used during original cataloguing and not for information of any consistent type. As ledger books filled with catalogue records, new books were ordered, but there was little change in format over the span of more than 100 years and 93 volumes. Not until 1899 did “Sex” disappear and “People” make an entrance as a column header in the Anthropology catalogue.



REGENTS' ROOM.



CATALOGUING AND CLASSIFICATION OF SPECIMENS.

Figure 3. Left: the Regents Room of the Smithsonian ca. 1856, where decisions on construction of a catalogue system might have been discussed. Right: the Smithsonian workroom where decisions likely were actually made. (Courtesy of the Smithsonian Institution Archives. Left: image #2005-10436. Right: image #2011-2391.)

Given that anthropological cataloguing at the USNM was hatched from the egg of Baird's natural history paradigm, I wanted to compare it with cataloguing practices at a museum that was founded purely for the study of anthropology. The first museum in the country devoted exclusively to the science of culture was the Peabody Museum of Archaeology and Ethnology, founded at Harvard University in 1866. A new and specialized institution, it offered an ideal opportunity for anthropology to craft a catalogue distinctive to its discipline. However, the catalogue it did adopt, after a few false starts, bears a distinct resemblance to that of the USNM Division of Ethnology (see Table 1). Once again, cataloguers were obliged to sneak cultural designations into fields otherwise headed. As in the USNM case, the Peabody Museum archives record little about deliberations over catalogue form; it was evidently a topic so self-evident as to require little discussion. An examination of the museum's early catalogue books reveals that they simply emulated the Smithsonian system.

Perhaps this is not surprising considering the training of the early leaders of the Peabody Museum. The brief tenure of the first curator, Jeffrey Wyman, an anatomist, was followed in 1874 by interim curator, Asa Gray, a botanist (Browman 2002). In 1875 the museum found its long-term

leader in Frederic Ward Putnam, a specialist in ornithology, who was willing to shift his interests from "the natural history of animals to that of man" (Kroeber 1915, 714). Putnam came to the newly established Peabody with years of prior experience at Harvard University's Museum of Comparative Zoology. Immersed as he was in the natural history mode of cataloguing, it is not surprising that he found the "Baird system" appropriate for wider application.

While Baird stayed put at the Smithsonian for the remainder of his career, Putnam was peripatetic. Even while retaining his position at Harvard, he became the first curator of anthropology at the American Museum of Natural History (1894–1903); chief of ethnology at the World Columbian Exposition (1891–1894), from which developed the Field Columbian Museum; and director of the Anthropological Museum at Berkeley (Browman 2002; Browman and Williams 2013).⁶ He might be considered the Typhoid Mary of cataloguing, a likely agent in spreading the early natural history model to anthropological collections across the nation. Regardless of precise origins, the number of "museum men" was limited and cross-fertilizing. For example, the first permanent anthropology curator of the Field

| Printed column headings in the USNM catalogue ledger | Similar column headings used in catalogue ledgers of major museums | | | |
|--|--|------|------|------|
| | USNM (as used) | PMAE | AMNH | FMNH |
| Catalogue number | YES | YES | YES | YES |
| Original number | YES | YES | YES | YES |
| Accession number | YES | YES | YES | |
| Name | YES | YES | YES | YES |
| Sex | | | | |
| Locality | YES (plus culture) | YES | YES | YES |
| Nature | | | | |
| Collected by | YES (used for donor) | YES | YES | YES |
| Date collected | | YES | YES | YES |
| Received from | | YES | YES | YES |
| Cost | YES (used for gift, purchase) | | | YES |
| Date received | YES (used for catalogue date) | YES | YES | YES |
| Measurements | YES | | | YES |
| Number of items | YES | YES | | YES |
| Remarks | YES | YES | YES | YES |

Table 1. Chart showing critical “fields” as defined in the early USNM catalogue, and their actual use in the following early anthropological collection catalogues: Peabody Museum of Archaeology and Ethnology (PMAE), American Museum of Natural History (AMNH), and the Field Museum of Natural History (FMNH).

Museum was William Henry Holmes, who came from the USNM (Haskin et al. 2003, 65).

By the start of the twentieth century, anthropology had separated from natural history and was recognized as a distinctive field of study, with its own questions, methods, and journals for dissemination of research. The early decades of that century are often considered the golden age of museum anthropology (Stocking 1985, 8; Sturtevant 1973). Collections were widely accepted as an important resource for knowledge making, and the number of museums collecting, displaying, and cataloguing anthropological materials grew as many universities established museums of their own. By this time, however, the basic data fields defined during the time that anthropology was still embedded within natural history

had become fully naturalized and were widely adopted (Table 1).

UNRULY DONORS AND IDIOSYNCRATIC CATALOGUES

While the USNM was influential in the latter part of the nineteenth century, it was not the first museum in the United States to maintain substantial materials originating from other cultures nor was it the first to catalogue such items. A number of museums were established during the early federal period that were devoted to natural history as well as art; most of these included some cultural materials. Almost all of these museums eventually closed due to lack of funds, but the catalogues of several of the more serious enterprises have survived—some in original manuscript form, others in printed versions designed for circulation.

All original handwritten catalogues that I have located are in bound volumes, the trusted medium of the day. These catalogues range considerably in nature, but they seem to have offered ample flexibility to accommodate whatever information was available, whether scant or detailed. At each institution, those charged with data entry made choices on how and what to record.

The Charleston Museum in South Carolina offers a case in point. The museum, founded in 1773 and still in operation, claims to be “America’s First Museum.”⁷ Envisioned as a universal museum encompassing both art and science, its earliest collections included cultural materials ranging from an Egyptian sarcophagus to a Hawaiian feathered helmet (engagingly listed as “Indian helmet from the Sandwich Islands”). A few of the early holdings have survived, but sadly nearly all of their early catalogues were lost during the ravages of the Civil War. Only one small antebellum notebook remains to reveal traces of cataloguing practices.

The nature of the entries it contains suggests that the donors were the primary agents in determining what information should be recorded. For example, Mr. Thos. Branford Smith detailed his donation as “a beautiful species of spider, caught in his piazza” while Captain William Hall described material from Guiana this way:

Articles for the Museum presented 5th June 1798—by Captn William Hall—

A Case containing a collection of Insects, from Surinam.—

An Apron worn by the Native of that Country, in full dress.

Arrows, for war, & for shooting fish, fowl, & stunning birds.

A kind of Basket call'd Metaba thro which the Spaniards express the poisonous juice of the Cassada.⁸

The information that Hall provided might be parsed today into fields such as culture (Native and Spaniard), function (occasion for dress, uses for arrows, processing of cassava), and native terminology (“metaba”). Had Capt. Hall maintained his treasures and associated information until the decades when anthropological cataloguing was systematized, little of this information could have been accommodated within the rigid framework of the catalogue ledger at the USNM or elsewhere. The unstructured format of the book employed by the Charleston curator, as much as the unstructured state of anthropological study, allowed for its entry in full. Although most of the Charleston Museum catalogues met a sad fate, other early catalogues have survived either in manuscript or in print.

Charles Wilson Peale’s well-known museum in Philadelphia opened to the public shortly after the Charleston Museum. Because the museum lacked the type of strong private financing that helped support its southern cousin, Peale was always anxious to promote paid attendance, and he periodically printed catalogues that advertised the value of the collection and served as guides to the exhibits (Sellers 1980). They are the public face of the internal museum catalogue. The 1805 catalogue offers a good example of Peale’s scientific commitment. In it he proudly directs visitors to note: “Linnaeus’s classification of birds, with the characters of each order and genus, is (for want of space to display it better) exhibited in a gilt frame at the entrance to the Long Room,” while minerals and fossils are “arranged according to Kirwan.” For cultural materials, there were no published authorities to cite and object references become a jumble

of “curiously fabricated earthen pots found in South America” and “a number of Indian curiosities, models of canoes, spear, bows and arrows” displayed together with wax figures dressed in the “peculiar habiliments” of an African, a South American, and an Otaheitan (Peale 1805, 2–8).

Classification was the order of the day, and American students of natural history had readily embraced the Linnaean system of classification and nomenclature imported from Europe. As the proprietor of Scudder’s American Museum in New York noted in the 1823 catalogue of his museum, materials were identified according to the system of Sir Charles Linne “whose very name glows in the heart of every lover of science” (Scudder 1823, n.p.). But when it came to classifying cultural materials, Scudder, like Peale, ended his catalogue vaguely with “also Indian curiosities” (ibid.). Museums of the time had no accepted system comparable to the Linnean one upon which to draw for the classification of material culture. Information recorded was thus idiosyncratic, open to influence by donors and individual cataloguers.

Another early museum of scientific intent was the American Antiquarian Society (AAS), founded in 1812 in Worcester, Massachusetts. The society originally collected artifacts as well as books to serve as research materials for study of the American past and its classical roots. The AAS is now exclusively a library and archives; its collection of artifactual materials were transferred elsewhere. However, it has retained its original catalogue of the artifacts. That catalogue reveals the usual pattern of donor-driven idiosyncratic entries. Some are sparse in the information they provided: “Two small pieces of palm leaf on which are several lines written with a stilus [*sic*], in the Malayan language. Presented to the Society by William Goddard Esq. of Providence RI.”⁹ Others are quite remarkably detailed, such as those relating to the prehistoric mounds of the Ohio Valley where the AAS was supporting excavation. Catalogue entries are rich and detailed, taking full advantage of the unstructured pages of the catalogue book to give details of location and association.

A copper hook found at the end of one of the parapets, near the large elevated square, in the ancient works at Marietta, about one foot under

the surface, amidst a large quantity of cinders, ashes & burnt bones of different animals.¹⁰

Such catalogue records make a striking contrast to entries for materials collected by Edwin Davis, published by the Smithsonian, and eventually catalogued at the American Museum of Natural History in the 1890s. A typical entry in that later, more professional catalogue records: “1/32 - Rude flint implement, Clark’s Work, Ross Co., Ohio,” collected by Edwin K. Davis.

Donors to the later USNM, the Peabody, the AMNH, and other “professional” museums were often equally unruly in the information they offered. They were either unaware of or impatient with whatever informational “rules” the museum might have. Whether scientist, missionary, explorer, or armchair naturalist (or often their descendants), each of them had something to tell about the items they offered. When donors resided at a distance, the mass of correspondence and written documentation often generated thick files filled with rich, although often random, information. Long-distance donors often sent long, chatty letters, their own freeform catalogues, or at least an offer to provide more information should it be desired. At museums with increasingly organized records management systems, these bits of documentation were dutifully filed away in accession files. When donors appeared in person and offered their knowledge verbally, the resulting files are disappointingly slim, with almost nothing beyond a list of items with minimal identification. Much of the information they offered evidently fell on deaf ears. The museum defined the scale and the fields of information to be recorded, regardless of how garrulous the donor might have been.

At the USNM and other museums that sponsored field research, many accessions were the result of scientific collecting. Catalogue records for these items, while perhaps more reliably identified than those from casual donors, were otherwise no richer. Field notes that may have contained substantial information were commonly retained by scholars, who reserved them for future publication. Cataloguers did not mine these notes, and catalogue entries for what should be the best-documented collections were disciplined into the same spare form.

There seems to have been little expectation that accession files, whether fat or slim, would be consulted again once items were entered into the catalogue. Although the USNM ledger offered a column in which to record the corresponding accession number, early cataloguers routinely left it blank. That column is now largely filled, but differing colors of ink and handwriting reveal that the entry of such cross-reference was the result of later campaigns of information management. Not until the 1880s did it become routine at the USNM to enter the accession number at the time of cataloguing. The accession files were themselves kept in a separate building from the catalogue and the collections.

The wealth of documentary information available to museums about collections and their origins was thus set on divergent paths early on. Some was placed in accession files, and some was entered into the catalogue. Some might be found in publications, and other information remained in unpublished notes. Of the trove of information offered by generations of donors, the catalogue contains only a tiny selection—a few fields deemed appropriate for inscription. Yet for all these limitations, the catalogue became the basis of all subsequent generations of information systems, including our online databases, as I discuss below. At the Smithsonian and elsewhere, the catalogue is the main source of information offered to researchers studying the collection, and online public databases draw directly from the catalogue.

CULTURAL KNOWLEDGE MEETS BAIRD’S GRID

Museums have moved through a series of regimes of information management since the days of handwritten entries in ledger books, but the legacy of these initial systems is a shadowy presence through the ensuing history of catalogue practices.

Each museum has a distinct history, but the USNM’s path from the ledger book to the online catalogue exemplifies museum practice across the discipline. Small pieces of information were carefully selected from the range of documentation and opinion offered by donors, itself probably a small slice of what they knew. These pieces of information were reconstructed as data through the process of entering them into the ledger book, working within its grid of rows and columns. Information was entered twice, with a duplicate ledger serving as a safeguard against

loss. Amazingly, from 1867 to 1884 much of this data entry was done by one individual, Edward Foreman, a trained physician and a vocational botanist (Ellis 1973). One copy of the catalogue contains only text, while Foreman embellished the other with thousands of tiny sketches of the objects, providing a useful visual reference system.

In 1884, the Division of Ethnology hired an energetic new curator, Otis Mason, who happily left teaching in a preparatory school to pursue his museum passion (Hough 1908). Across the upper margin of the catalogue page beginning with number 73,151, he boldly inscribed “O. T. Mason’s first entry as Curator.” In his annual report for 1885, he stated his position on cultural materials:

Considering the whole human race in space and time as a single group, and all of the arts and industries of man in the light of genera and species, the arrangement of the material will be such as to show the natural history of the objects. All of the lines of investigation pursued by naturalists in their respective fields may here be followed. (Mason 1885, 63)

Yet, the nature of catalogue entries did not change. Evidently Mason felt the catalogue already did a good job in support of this vision of science. Mason did, however, eventually introduce changes in information management. In 1898, he wrote to a colleague in the BAE that “we are going now to institute a card catalogue system.”¹¹

These new cards were preprinted with the same field designators as the ledger column headers, with the addition of two new fields. One is “People” and the other is storage location. Culture, at last, was a designated data field. Cards provided substantially more space and flexibility for the recording of information, and the technology allowed interfiling of other material such as exhibit labels. The transfer of existing information from the ledger to the cards, a process now termed retrospective data capture, proceeded over the course of several years. Because cards were vulnerable to removal and loss, the ledgers continued to be maintained, providing a backup system. Cards offered much greater capacity to hold information, but an examination reveals that while entries grew in size, information relating to cultural origins did not increase. The additional space was used

primarily for physical descriptions of the object, with occasional notes on where an item appeared in publication or to whom it may have been exchanged.¹² Accession files from this era continue to contain significant amounts of donor-provided information that did not make it into the catalogue. Limited fields of core information as defined by the form of the earlier ledgers had become normalized.

Yet another campaign of information modernization, the replacement of handwritten cards by typewritten cards, was undertaken in the 1930s facilitated by a Works Progress Administration (WPA)–funded labor pool. Again, apart from mistakes in deciphering handwriting, this data transfer involved no major change to the form or scope of information. Wide acceptance of the typewriter as the new technology of choice led to the end of bound ledger books as the backup system, because they could not be inserted into the machine, and bound books were replaced by loose-leaf sheets typed with carbon duplicates.¹³ Although the move to loose-leaf sheets once again offered new flexibility and greater space to incorporate additional information into the catalogue, the nature of entries and fields did not change.

Beginning in the late 1970s, the National Museum of Natural History was one of the first museums in the country to computerize its collections by employing an in-house system called SELGEM.¹⁴ By the mid-1980s, the Department of Anthropology proclaimed its records “fully entered.”¹⁵ An impressive milestone, this meant that there was an electronic record for every catalogue record. These records contained data from two sources. One was a robust inventory effort that recorded the storage location of every item together with notes on size and condition, information that was useful for planning a new storage facility. The well-staffed inventory project was paired with a rather anemic effort to capture core intellectual information from the catalogue cards, which consisted of just five data fields: catalogue number, object name, culture, locality, and number of items (Wilcox 1980). This choice of fields replicates the earliest catalogue ledger, with the exception of the addition of culture, a field that as we have seen gained a place within the natural history–based USNM catalogue ledger only after a struggle. Like the early entries in the ledger, the accession number, a critical link to donor-based information, was not included. Well

over a century after the ledger was first created, the data fields that it contained continued to shape the cataloguing of anthropological collections. Other automated systems followed SELGEM, as data were migrated first to the Inquire program and then to KE EMu. Over time the number of available fields has grown exponentially, although many remain blank despite periodic campaigns to add more information systematically.¹⁶

The latest major catalogue event for the NMNH, and for an increasing number of museums, has been providing a publicly accessible online version of the catalogue, a derivative product displaying selected fields from the main database. Again, the weight of cataloguing history has defined the options. The conceptual structure of the museum's current database, which serves biological departments as well as anthropology, has had a major impact on the public display of information. It is a sprawling relational database with various types of information placed in different "modules." In recent years, anthropology has focused resources on enhancing data fields relating to the context in which items were acquired, such as summarizing accession histories and adding biographical information on individuals. However, the online system does not draw upon this collection-level data. Instead, for technical reasons, it delivers item-level information, data that largely replicate the fields of the card era of cataloguing, which, as we have seen, were in turn based on the earliest ledger catalogue.¹⁷ The addition of object images seems a new advance until we realize that they were conceptually foreshadowed by Dr. Foreman's tiny pen-and-ink sketches in the nineteenth-century ledger.

Three patterns are evident across the course of this history of a century and a half of cataloguing. The first is that each episode of information migration built upon its immediate predecessor, thus carrying forward previous conceptualizations into each "new" system. Starting over from scratch by imagining a new system has never been considered feasible, or perhaps desirable. While many individual records have been enhanced from data in the accession files or other sources, the key fields of information remain the same.

The second pattern in the history of the catalogue has been a periodic oscillation between the expansion and the contraction of information. For

much of the history of the catalogue, the rich if idiosyncratic documentation provided by donors was ruthlessly pared to populate a few lean catalogue fields. As the catalogue migrated from one form of media to another, we see a countercurrent of expansion from single ledger line to the potential of an entire catalogue card (available if not always used) followed by the restrictions of a nascent computer system that could handle only limited fields and coded data (Figure 4). In the computer era, we have seen an enormous growth in the data storage capacity and an explosion of available fields followed by online access to only a limited number of those fields. Within this history each contraction was driven by technological limitations, but the data choices made in response to these limitations were, of course, intellectual in nature. Knowledge practices, past and present, determined what data was important to make most readily available and what choices were "natural." The fields that have emerged as core data in twenty-first-century online systems are largely the same ones that defined the catalogue system of the 1860s. These fields have been normalized over time as a natural part of museum practice.

The third pattern in this history is a steady increase in collections management information, a domain largely absent from the ledger catalogue beyond naming the donor. Management concerns entered the catalogue during the era when cards were the primary site of records, and cards became the primary site for notations on topics ranging from storage location to loan history to condition. This type of information became the most dominant aspect of the electronic catalogue when records were first computerized, with the inventory program setting the stage for the use of the database as an essential tool in storage planning and inventory accountability.

ANTHROPOLOGICAL INTERESTS AND CATALOGUE CATEGORIES

It is reasonable to expect that catalogue records, like other aspects of museum practice, have been shaped by the anthropological understanding of the period in which they were created. However, this does not appear to be the case.¹⁸

The history of museum anthropology has received substantial study in recent decades (Ames 1992; Bennett 1995; Bouquet 2001; Gosden and Larson 2007;

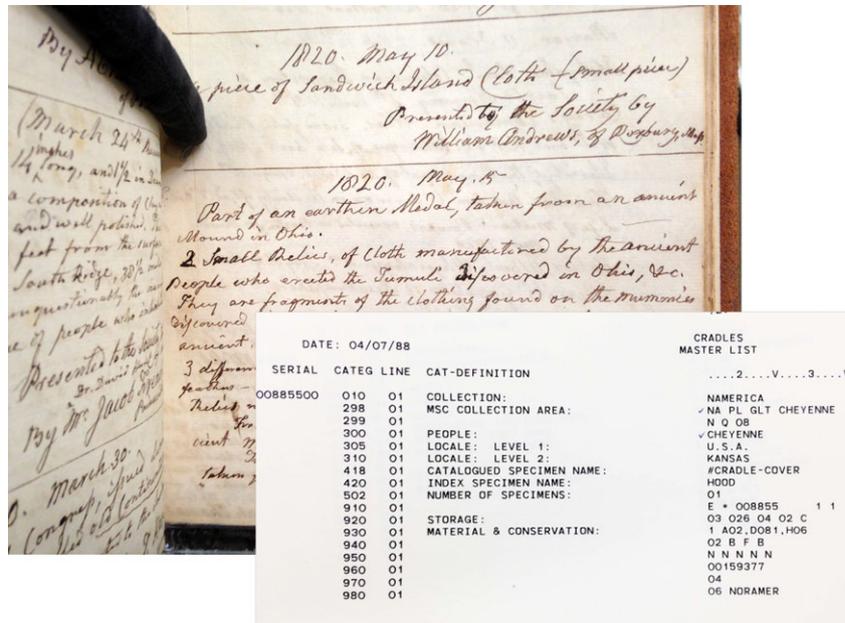


Figure 4. A comparison between the flexibility of early catalogue ledgers to record unruly information provided by donors and the rigidity with which early electronic catalogues disciplined their data. Left: 1820 catalogue entries for the American Antiquarian Society, AAS Records 1812-, vol. 17.1. (Courtesy of the American Antiquarian Society.) Right: 1988 printout from the National Museum of Natural History. (From Candace S. Greene's files.)

Karp and Lavine 1991; Shelton 2013; Thomas 2010). However, scholars have largely been silent regarding cataloguing even though it has defined broad trends in how anthropology has used objects to make meaning for both scholarly and popular audiences. Archival resources such as old labels, photographs of displays, correspondence, and reports have informed histories of exhibition practices, while analysis of scholarly publications reveals the science that was being constructed from the study of museum objects. During much of this history, the field of museum anthropology was primarily concerned with classification, continuing the pattern of its natural history origins. While museum biology embraced the Linnaean system, anthropology struggled to find a similarly productive schema. An important early one was the evolution of cultures and technologies, in which materials from around the world were organized into developmental sequences such as Paleolithic to Neolithic or in stages based on particular technologies, such as fire making, and many exhibits were organized along these evolutionary lines. However, when this system was judged obsolete, it left behind no trace in either the form or the nomenclature of museum catalogues. Another important system of classification was linguistic, a major research topic at the Smithsonian in the nineteenth and early twentieth

centuries. It was a particular interest of the Smithsonian's Bureau of American Ethnology (BAE), a major source for field collections deposited in the USNM and recorded in its catalogue. Yet, information on the language family of the source culture never made it into ledger pages, catalogue cards, or computer systems. Faint traces of this intellectual trajectory linger in the card catalogue only in the form of old BAE exhibit labels, many of which list linguistic "stock," that were pasted to card stock and interfiled among the more official cards.

The culture area concept succeeded evolution as a widely accepted anthropological device for classifying museum materials (Freed and Freed 1983; Wissler 1927). Here at last we see some connection between museum catalogues and developments in museum anthropology. For example, in 1904 the American Museum of Natural History, after some unsatisfactory beginnings, established separate catalogue series for different regions, with each catalogue number including a regional identifier. A prefix of 50, for example, indicated a record within North American ethnology. Other museums, such as the USNM, the Peabody Museum, and the Field Museum of Natural History, remained committed to a single run of sequential numbers, relying on separate indices to map catalogue numbers to culture areas.

Significantly, culture area designations, whether based on earlier card indexes or created *de novo*, have remained an important tool for information management. “Culture area” is not only a primary data field in computerized catalogues for ethnographic collections, the field also provides one of the main organizational tools for public searches in several online catalogues, such as that of the National Museum of the American Indian.

As anthropology moved out of its museum birthplace to become a university-based field, a long succession of other theoretical understandings of culture emerged, ones less clearly connected to objects (Bouquet 2001, 2; Thomas 2010, 6–7). Museum anthropology struggled to update exhibits to keep pace with changing interests and understandings; museum catalogues underwent no such changes. Until recently, this basic infrastructure remained invisible to the discipline. However, as anthropologists have become actively involved with Indigenous people who are reconnecting with material heritage preserved in museums, they have become newly aware of the poor fit between current understandings of culture and the nature of data in the catalogue (see others in this issue). In looking at the cataloguing history of museums, it is clear that this disconnect is not a new phenomenon. A tight fit between cataloguing practices and whatever modes of thought were then current has never existed. This lack of fit, with its virtues and its vices, is a topic for museum anthropologists to reflect upon as we simultaneously seek to distance ourselves from various classificatory schema of the past and benefit from present understandings of culture. Some forms of museum knowledge-making, such as exhibits, are readily constructed and dismantled—their interpretive messages either absorbed or forgotten. The museum catalogue, on the other hand, is a long-term, ongoing enterprise not readily discarded or changed.

THE AGENCY OF MATERIAL TECHNOLOGY

In all museums, regardless of their history, the shifting material technology of cataloguing has exerted power and agency over the information associated with anthropological collections, subtly shaping how objects are perceived. The ledger catalogue defined the scale of information that could be made readily available. It attempted to define the fields to be

entered through the use of column headers, although as we have seen, some cataloguers resisted this guidance and tried to enter more information while others provided much less. The format of the bound ledgers prevented loss, but it also created a structure that was fiercely resistant to change. Most significantly, these early systems normalized key fields of information as essential. These elements facilitated certain types of understanding but limited other kinds of knowledge.

The introduction of the card catalogue, heralded as a revolution in information management, offered a larger scope for the recording of information. However, by that time ideas had been normalized about what information was essential—and what was not. Although more space was available, little information regarding collecting history or cultural meaning was added. The new capacity was used mostly for management information on storage location, inventory status, loan history, and, if staff resources were plentiful, object descriptions. Unlike entries in the ledgers, cards were mobile and could be relocated, replaced, or lost. The USNM system, for example, began with a single running number system for all materials, but in 1936, the museum staff separated the files into divisions. Archaeology and ethnology cards were sorted and separated, and arranged into banks of drawers that now face each other across the room, while physical anthropology cards have migrated down the hall. A run of material from a single donor listed sequentially in the ledger now might be fragmented into three informational regimes.

The arrival of the electronic database introduced a truly new technology to the catalogue. The first computer system, however, constrained information even more than the early ledger books. Once again, space was reduced to a few data fields, each of which could contain only a limited number of characters, and the same fields as before were privileged. As in the earliest ledgers, the accession number, a key link to further documentation, was not included.

In its earliest form, the new computerized system offered two major contributions to information management. One was indexical, as computer searches could replace the card indices. However, staff came to rely on electronic reference over the card indexes only after substantial work was invested in data standardization. Controlled vocabulary, essential to effective searches, exerted a powerful constraint. Paper records

and card indexes had adapted to the messiness of culture and the unconstrained nature of donor information, but the computer could not. The second great benefit of the new computer system was its contribution to the physical rather than the intellectual management of the collection. While the catalogue component of the new database captured only a few fields of information from the catalogue cards, a huge amount of new information was captured during a complete physical inventory of the collection. This information on storage location, storage needs, size, and materials was of enormous value in planning a new collections facility and tracking the move of a million and a half objects to new locations. Collections management was the major beneficiary of the computerized catalogue.

The greatest impact of the new technology, however, was social. It generated a shift of Foucaultian proportions in power and knowledge within the museum.¹⁹ The first database system was most definitely not “user friendly.” Both the entry and the retrieval of information required special skills; queries submitted one day were answered with a stack of coded green bar printouts the next day. The catalogue had moved to a mainframe system at a time when few staff either knew how to operate or had access to a personal computer. Almost inevitably, processes not only of inventory control but also of catalogue control shifted from curatorial staff to technical staff. Control of the catalogue left the domain of anthropological authority and entered the domain of technical functionality. While curators might be consulted about changes in specific information, decisions were increasingly dictated by the demands of “the machine,” and choices in cataloguing priorities were increasingly made by technical staff, not anthropologists.

FINAL THOUGHTS

I have used the USNM/NMNH Anthropology catalogue system as a primary case study, but I believe that the wider observations are applicable to most North American museums with anthropological collections. The material technology of cataloguing has undergone many changes from early ledgers to online data access. However, the core fields defined by the USNM in the 1850s continue to cast an unexamined influence over catalogues today. Anthropology has

moved from concern with classification to considerations of how people make meaning with objects, whether within their original context or in the context of circulation beyond the community. One of the markers along that path of circulation is the museum catalogue.

It is time to reconnect the catalogue with anthropological thinking while humbly recognizing that the interests of today may become the discarded index boxes of the future. We need to consider how to move from *catalogue as a technology of information management* to *catalogue as a tool for knowledge making*. The challenge is to think about and beyond the information that has become normalized and to recognize that this is not the only way to record collections. We need to embrace those unruly donors, past and present, who wished to lead us in other directions and to suggest other facets and lives for the objects in our care. Clearly we need to add more information to data fields such as that which can be drawn from accession files, field notes, and lived knowledge. But we must also be thoughtful about how knowledge is reshaped in the process. We must be cautious of constraining the messy domain of culture into more and more “boxes,” whether a ledger column or its modern equivalent of data field.

As an example, let us return to the Cheyenne cradle discussed earlier in this article. Several museums are enriching their online databases with fields relating to function or “object type,” intended to be of value to nonspecialists. How should this cradle be indexed? In many databases it would appear under the heading “transportation,” reinforcing a view of the Cheyenne as mobile bison hunters. However, it has been established that cradles with heavy board frames such as this came into common use only after Plains people were restricted to reservations (Hail 2000). Museums that would never try to erase the bitter history of the reservation system in their exhibitions may do so unwittingly in their catalogues. Data systems are never neutral.

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NOTES

1. Much of the information in this article, including the history of NMNH cataloguing since 1985, is based on personal experience using working records to conduct research at dozens of museums. I have also created and modified many catalogue records and so am well aware of the hidden dimension of human labor involved in their production. In this article I have chosen to elide the role of human agents in order to foreground the powerful agency of information systems, also often hidden.
2. Voth to Holmes, Jan. 18, 1893, Accession Number 26,673.
3. NMNH, E165,767 tag.
4. The history that I am tracking here is of North American museum cataloguing. European museum cataloguing has its own diverse history, which I do not address here.
5. The Division of Ethnology encompassed all products of human culture, ranging from electronic apparatus to an Egyptian sarcophagus. What we now call anthropology was a subset of that wider domain.
6. For many years, the Field Columbian Museum was known as the Field Museum of Natural History, more recently simply the Field Museum. The Anthropological Museum at Berkeley is now the Phoebe A. Hearst Museum of Anthropology.
7. For more information about the history of the museum, see: www.charlestonmuseum.org, accessed May 14, 2016.
8. Charleston Library Society. MS 29 Records of Institutional History, D 4738, Accession Records 1798–1804, 1849–1878.
9. AAS, MS 17.1, n.p.: 1813.
10. AAS, MS17.2, 149, 1821.
11. Otis Mason letter to F. Hodge. 1898. Papers of the Bureau of American Ethnology. Correspondence. Letters Received 1879–87. National Anthropological Archives, Washington, DC.
12. Exchanges, an important part of the museum’s operation as discussed by Nichols (this issue), were frequently but not consistently noted in the catalogue.
13. Entry of data into the bound ledgers was not totally abandoned until the 1960s, although it became increasingly brief while the typed sheets contained more information. When I joined the museum in 1985, these were still referred to as the “typed ledger,” reflecting the staff’s sense of continuity with that earlier system.
14. The USNM was dissolved in the 1950s, as the Smithsonian Institution began a progression toward multiple, more specialized museums. Anthropology, with divisions of ethnology, archaeology, and physical anthropology, became a part of the new National Museum of Natural History.
15. This celebratory milestone, which I heard announced, conveniently ignored the vast backlog of uncatalogued material, mostly archaeological in nature.
16. Despairing of having resources to key in all information from the catalogue cards, staff contracted for digitized images of the cards, which allowed users to read, but not search, information.
17. More complete reports of automated information are available by request.
18. This is not to say that catalogues do not include vocabulary that reflects ideas of the time, such as “squaw’s tip-pet” or “primitive idol.”
19. Michel Foucault’s work on the power of scientific classification systems is relevant to not only this type of social shift but could also be applied to the process of cataloguing as a whole. See especially *The Archaeology of Knowledge* (1972).

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