Diagnosis to Configure the Documentary Collection on Paleontology in the Instituto Nacional de Antropología e Historia, Mexico
Ir a la versión en español

DOI: 10.30763/intervencion.251.v2n24.30.2021 • YEAR 12, ISSUE NO. 24: 74-91

Submitted: 13.03.2021 • Accepted: 01.12.2021 • Published: 28.12.2021

Rosaura Mitra Ávila
Coordinación Nacional de Arqueología (CNA),
Instituto Nacional de Antropología e Historia (INAH), México
mitraura@gmail.com | ORCID: https://orcid.org/0000-0002-7777-9601

Translation by Martha Macías

ABSTRACT
This research article will present the stages and results of a diagnosis made as part of a research-intervention project for a master’s degree in Conservation of Documentary Heritage (2018-2020) at the Escuela Nacional de Conservación, Restauración y Museografía (ENCROM, México). The project made a theoretical-practical proposal to form and preserve a documentary scientific collection paleontology at the Instituto Nacional de Antropología e Historia (INAH, Mexico). This diagnosis set out to establish the basis to form this documentary collection in the Archivo Técnico (AT) de la Coordinación Nacional de Arqueología (CNA) and constituted the foundation for the above-mentioned investigation-intervention.

KEY WORDS
diagnosis; documents; conservation; archival science; library science; documentation science; binding
INTRODUCTION

In our investigation-intervention thesis for a master’s degree in Conservation of Documentary Collections (2018-2020) from the Escuela Nacional de Conservación, Restauración y Museografía “Manuel del Castillo Negrete” (ENCROMY), we proposed forming a documentary collection about paleontology at the Instituto Nacional de Antropología e Historia (hereinafter, ADP-INAH), because we observed that despite the publication of Article 28 bis in the Ley Federal sobre Monumentos y Zonas Arqueológicos, Artísticos e Históricos (LFMZAHH) (Cámara de Diputados, 1972), under which INAH was tasked with the obligation to protect, preserve, investigate, and disseminate the paleontological heritage of Mexico together with its archaeological heritage, the Institution had not built a documentary archive or collection on paleontology. From the beginning, we considered that our proposal for such a collection should be based on a diagnosis of a selected collection, in this case the Archivo Técnico de la Coordinación Nacional de Arqueología (AT-CNA).1 This diagnosis would be different from a conservation diagnosis and would constitute the foundation of our investigation-intervention.

But what kind of diagnosis would serve to form a documentary collection for a science like paleontology within an institution like INAH? This article attempts to answer this question with the hypothesis that this kind of diagnosis would necessarily start with the Archive, because such a collection would be formed inside the Institution, and therefore would derive from archival science. Then, after compiling documentation on the subject, the diagnosis would employ library technology criteria in the form of a documentary center or specialized library.

In light of the above, this diagnosis will have to be multidisciplinary and go beyond conservation, which would be the starting point2 (conservation in the classical sense, close to the materiality

---

1 This is the most important archive for Mexican archaeology. A group of researchers want it to be named “Archivo Nacional de Arqueología” (National Archeology Archive, in English) in the short term because for several years now, they have been working to put together a file to make it a candidate for UNESCO’s Memory of the World Register. This because of the value of the documentation it contains since 1885, which accounts for the history of the first and most recent findings of Mexican archaeological heritage and also deals with many other matters such as archeological professionalization and development in our country. Here, however, we will not attempt to list the reasons why this file should be built nor explain why it hasn’t been formed yet. What is clear is that this collection, kept by INAH, constitutes an important part of what may be considered Mexico’s documentary heritage.

2 Understood as a “group of interdisciplinary operations intended to avoid deterioration of tangible cultural heritage and guarantee it is safeguarded for conveyance to future generations” (INAH, 2021). All quotes are editorial translations from the Spanish versions.
of the documents) and from there look towards other disciplines pertaining to documentary collections, like archival science,\(^3\) library science\(^4\) and documentation science.\(^5\)

For the purposes of our investigation-intervention, documents were defined as “units constituted by physical support and informative content” (Contendor, 2016, p. 4). This definition leads to the document being understood as informative content portrayed in materiality. Thus, we determined whether or not it was possible to represent the documents intended for inclusion into the ADP-INAH either through some kind of digital support or in a catalog.

**STAGES OF THE DIAGNOSIS**

The diagnosis at AT-CNA to form the ADP-INAH collection took place between August 2019 and April 2020, and consisted in four stages:

- **Documentary process**
  - Preparation of the diagnostic-catalog data sheet (index card).
  - Information compilation by recording each document (445 items) in a diagnostic-catalog data sheet.
  - Preparation of the full diagnostic data sheet for the AT-CNA.

In order to highlight the multidisciplinary contribution to the diagnosis, we will describe these four stages but will only discuss in depth the documentary process and compiling the information in the diagnosis-catalog data sheet.

---

\(^3\) According to Antonia Heredia, it is “archival—not documentary— science, although ultimately documents are the constituents of archives. As such, it is devoted to the creation, history, organization, and services provided to administration and history, and society, definitely.” It is the science that studies the nature of archives, the principles to preserve and organize them, and the means to use them (2007, p. 29).

\(^4\) According to Evaristo Hernández, library science became a science after the Second World War due to changes in technology and the increase and specialization of information in libraries for advanced studies. Its objects of study refer to “libraries, books, and documents, information in bibliographical and documentary records” obtained from such documents and the science as such (Hernández, 2011, p. 34). What we used in our investigation-intervention was document registration and the organization of thematic information in the same manner as it is done in a specialized library.

\(^5\) “Sciences” of documentation in this case are understood as defined by Ariel Sánchez: “a group of disciplines intended to study an information process involving the retrieval of messages emitted in prior processes and that, via analyses and technical treatment are transformed and communicated to serve as sources of information to acquire new knowledge or make decisions” (2011, p. 78). Sánchez summarizes this as “processing and adapting sources to integrate new knowledge,” which is more akin to this investigation-intervention.
Documentary process

We carried out a documentation process that included searching for, selecting and recording documents of the AT-CNA. We began by tracing published documents about paleontology in every state of Mexico (not all of them include the word paleontology in their titles), in order to differentiate them from the work sample taken from the archive, i.e., from the technical reports by state available for reference at the AT-CNA.

We resorted to documentary science to cross-reference (mainly through Internet) the publications we obtained about paleontology in the various states of Mexico and the AT-CAN listings to derive a sample of documents that might refer to “paleontological matters,” which in our research were defined as matters referring to paleontology and associated documentation, including fossils. This selection might be somewhat subjective because we did not exhaust all the investigations referring to “paleontological matters” in the section we worked on.

Nevertheless, we consider the sample to be representative because it is the only one having a reference instrument; namely, the thirty-six lists of the AT-CNA (one for every state, one labeled “miscellaneous,” and another from the Dirección de Monumentos Prehispánicos) which until 2016 had been published in the web page of the Coordinación Nacional de Arqueología (CNA) but are now loaned to users. AT-CNA documents were identified with a consecutive number, assigned according to the order in which the records came to the archive, and were organized by state in alphabetical order. Thus, the reference for the first one, Aguascalientes, is “1-1” and for the second, Zacatecas, the reference is “31-2”. In these lists there exist about 10,328 records of documents from the section known as the “Technical Reports” of the AT-CNA.

It is important to mention that these are not all the records it includes, and that the documents are about archeology, although other subjects can be found as well. We reviewed these lists and selected reports, projects, and a few theses, which we recorded in an Excel spreadsheet with their titles, authors and references (the only fields in the current AT-CNA list.)

These records allude to what archival science defines as documentary units that correspond to a document or complete file about a same matter (Consejo Internacional de Archivos [ICA], 2000), which is how they were sorted in the diagnosis. Those that appear in the AT-CNA lists were considered simple documentary units (ICA, 2000, p. 15), in other words, a single kind of document about the
same topic, for example, a technical report, a thesis, a periodical publication.

However this is not always so. Sometimes a single register includes several technical reports, especially in the case of retrievals which are reports consisting in a few pages only, and therefore not considered as important as the report of a research project comprising several seasons. This does not mean, however, that they have compound documentary units because—at least in the section we worked on—there is no continuity in the files or research projects.

The items selected were identified as a collection of the ADP-INAH because from the perspective of library science, they fulfill the definition of *collection*: “an accumulation of information resources developed by information professionals that is targeted for a user community or a group of communities” (Lee, 2000, quoted by Fuentes, 2007, p. 92). However, these items do not necessarily adhere to principles of classic archival science like respect des fonds and the principle of provenance, because the group—or at least the section of technical reports reviewed in the diagnosis—had been formed as a collection.

Our selection also included observations about the configuration of the AT-CNA: its reference instruments; how these instruments are organized, classified or catalogued; how accessible they are; level of description; conservation status; and applicable regulations. In terms of archival science, all of the preceding would be considered to be in a stage of identification, defined as “intellectual phase consisting in the investigation of the producing subject and documentary type” (La Torre & Martín-Palomino, 2003, p. 14).6

**Diagnostic-catalog data sheet**

We then used Excel to design a diagnostic data sheet that could be applicable to all documents, and later be transformed into a catalog, thinking about the potential long-term usefulness of the information contained in the diagnosis, as well as contemplating a pre-catalog that would serve as an initial reference instrument for the elements that will constitute the ADP-INAH. This was proposed as a first step in cataloguing. The elements were aligned with the

---

6 Nevertheless, it was not named this way because—contrary to archival science—it was thematically organized and never reached the culmination of the process with the identification of documentary series nor its organization as per archival science.
metadata method known as Dublin Core (dc). Figure 1 shows the fields in the data sheet. dc indicates that they were aligned with this metadata method.

FIGURE 1. Data in the diagnosis catalog data sheet for the ADP-INAH (Data Sheet: Rosaura Mitra, 2021).

<table>
<thead>
<tr>
<th>Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification number</td>
</tr>
<tr>
<td>Material register date</td>
</tr>
<tr>
<td>Record Type (DC)</td>
</tr>
<tr>
<td>Authors</td>
</tr>
<tr>
<td>Reference</td>
</tr>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Physical location</td>
</tr>
<tr>
<td>Collection/Fund</td>
</tr>
<tr>
<td>Title/Name (DC)</td>
</tr>
<tr>
<td>Institution (DC)</td>
</tr>
<tr>
<td>Dependency (DC)</td>
</tr>
<tr>
<td>Subject (DC)</td>
</tr>
<tr>
<td>Year (date)</td>
</tr>
<tr>
<td>Abstract/content</td>
</tr>
<tr>
<td>Theme/Subtopic</td>
</tr>
<tr>
<td>Places where the research was made</td>
</tr>
<tr>
<td>Support</td>
</tr>
<tr>
<td>Resource Type (DC)</td>
</tr>
<tr>
<td>Format (DC)</td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td>Especific</td>
</tr>
<tr>
<td>Complementary material</td>
</tr>
<tr>
<td>Volume</td>
</tr>
<tr>
<td>Binding</td>
</tr>
<tr>
<td>Measurements</td>
</tr>
<tr>
<td>Conservation state</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

Because among the cataloguing methods used in information sciences to produce metadata, dc is the only one that adapts to all kinds of documents, both archive and bibliographical materials, as well as to a particular type of cultural patrimony (a work of art for example), and therefore seemed the most appropriate method for the material we selected to include in our diagnosis.
Cette feuille de diagnostic enregistre les informations et caractéristiques de la matière des documents au AT-CNA. Elle contient donc des éléments pour la conservation en domaines de matériau, et de la perspective des sciences de l’information, des éléments pour le catalogage dans les domaines de l’information.

Compilation of information in the diagnostic-catalog data sheet

In our diagnosis we selected and worked with 445 records (simple documentary units), 100% of the records that we had proposed. We discarded exactly 147 records (simple documentary units) from the initial inventory because they did not contain paleontological information (only archeological), but as we checked and systematized the diagnosis-catalog work sheets in Excel we found a few inconsistencies. These included 123 records that were therefore removed from the data sheet. Once we concluded the verification process, we had 298 items that were diagnosed and utilized in the proposal presented in my thesis.

Meanwhile in the diagnosis-catalog data sheet, several of the fields were filled in the same way for the entire collection of the AT-CNA, because they were intended to integrate several collections in the ADP-INAH. In this way, if the data sheet were to be applied in other INAH archives, other records could be added without creating confusion. Some fields can be used to determine what the collection might contain; others make it possible to observe how the document might be integrated into the archive, and whether digitalizing it is viable, its conservation status, and the number of pages it has.

The data sheet includes several fields with content regarding information about the documents themselves, such as data on the author, institution, and agency and indicate other agencies (either within or outside the INAH) that may have more documents of the same kind. This provides an idea of the location of documents and where other documents about paleontology could be found at the Institute.

Preparation of the diagnostic data sheet by collection

Once the process of recording the 298 items in the diagnosis-catalog data sheet was complete, we analyzed every record to produce a full data sheet for the AT-CNA, in order to learn the manner suggested to integrate these documents into the ADP-INAH, either through digitalization or entry in a catalog.

This data sheet was generated following diagnosis models for document conservation, such as the one used at the Archivo Gene-
Nevertheless we observed that forming the documentary collection would require more information about the description instruments already existing in the collection to determine if they can be applied to the ADP-INAH, and also finding the most appropriate way (in this case, digitalization) to integrate the collection into the heritage collection.

RESULTS OF THE DIAGNOSIS

In processing the data obtained through the diagnosis, we performed counts and obtained percentages for the following fields of the data sheet: institution, agency, place where the investigation was carried out, kind of resource, document type, formats, complementary material, volume, and conservation status. Only the subjects, topics or subtopics and binding were encoded, because these elements were needed for the proposal to form a collection. In the fields for year and measurements we only obtained extreme figures.

Below, we present the results that were analyzed in a multidisciplinary fashion through conservation, archival science, and library science.8

Results observed with respect to conservation

The idea of studying the materiality of the documents as a part of conservation, allowed us to first of all look at options to form the ADP-INAH, mainly with regards to digitalization; secondly, to identify preventive conservation actions that could be applied not necessarily to the ADP-INAH, but to the AT-CNA.

As to the materiality of the documents, we found that for 100% of the sample the support media is paper, and the format is text. Measurements run from 22 cm to 35.5 cm long, 14 to 24 cm wide, and 2 mm to 10 cm thick. If digitalization is considered mainly for bound volumes, widths in excess of 4 cm will make handling difficult.

Specifically, formats run the gamut from carbon copies (12 items), printed photocopies (33 items), and typed texts (45 items); to current laser prints in color (73 items) or laser prints in black and white (61 items)—showing how technology has evolved in the past 30 or 40 years—to intermediate technologies like ink jet printing

8 Because documental science was only used during the documentary process of our diagnosis.
(used for only about 15 years) in color (2 items) and in black and white (17 items); to texts typed using a mechanical typewriter (39 items), and electric typewriter (6 items). Additionally there are 6 manuscripts and 2 items that combine techniques, as well as predominantly laser—printed documents (153), that in general contain numerous graphic materials.

As to conservation status, it is good in 92% of the reports (275 items). This means they can all be easily digitalized if the decision is made to do so for the proposal. Only 2% are in poor condition (8 items) and may not be digitalized since the drawings they include cannot be viewed because they are folded and the edges are bound.

As shown in Figure 2, half binding⁹ in synthetic leather and Keratol with colors ranging from light to dark brown was used in most of the items (244) or 82% of the sample. This complicates digitalization in a flat-bed scanner, so these pieces will have to be photographed with a digital camera, a method that is increasingly being used.

⁹ It should be clarified that bound volumes do not represent a documentary unit because archival science does not consider them as such. Bound volumes contain several documentary types and different subjects. At times, depending on the volume of the document (number of pages) one can find up to twenty different documents in the same volume. Hence, our data sheets show some documentary units in the same volume, or conversely, when the document is long (usually a report) it will have been bound in two or more volumes.
The fact that the greater part of the sample is bound indicates that most technical reports in the AT-CNA were bound because the initial idea was to integrate and protect them (as if in a small box) against constant handling and pages perhaps being eventually dispersed or lost on account of constant use. We consider that the documents of the AT-CNA have not been ideally preserved since binding does not fully protect materiality. Some of the volumes containing legal size and letter size documents, and drawings done on paper or paperboard with varying thicknesses and sizes are warped. Binding, therefore, does not serve the materiality of the documents, since larger formats, in particular, are adapted to binding and not the other way around as it should be.¹⁰

In the binding of these documents one can also observe an effort to segregate certain documents for reference. In the documents of the Dirección de Monumentos Prehispánicos, we observed that in the beginning, only reports were bound, regardless of the kind. Later, binding was done more selectively, so the rest of the documentation was kept in files with more restricted access. Finally as of the 1990s and to date, technical reports and reference materials, like articles and unpublished papers, predominated.

From another perspective, binding is not appropriate for reference documents, because when a person wants to look at a single document in a volume, the entire volume needs to be handled and this requires using a stand. Registered documents could be separated and kept in a protector or folder, or independently in a different binding, and still belong to a documentary unit. This would have to be done with the new documents that come to the Archive. However, documents contained within a document—in other words, drawings included in a technical report—will require the establishment of a description (cataloguing) method to generate crossed-references between both documents.

If that were the case, the recommendation to better preserve these documents would be to keep them in first and second-level protectors designed for their size. In this way, drawings would be kept in flat files and reports, in protectors and boxes. Although this would produce greater dispersal, we cannot propose to remove the binding, because this is inviable and unaffordable for the Archive.

¹⁰ The reason why is unknown, perhaps to facilitate handling (still an unanswered question), but at some point, not only at AT-CNA but in many other archives and libraries, binding was considered a sort of panacea for conservation. The truth is that one observes many bound volumes of bibliographical, journalistic or archival materials that collections considered valuable approximately between 1950 and 1990 (which coincides with binding the AT-CNA).
Among the materials we registered as complementary, 296 items have graphical materials such as drawings, statistical charts, schematics, location maps, stratigraphic representations, monochromatic and polychromatic images, while 54 items contain larger format materials, most of which are drawings or blueprints. If the decision is made to digitalize them, then due to their wealth, color and attenuation (some are pencil drawings), we recommend using a high-resolution camera in the hands of a specialized photographer. Such a professional would also have time (and the Archive would assign time) to place these graphical documents on a sufficiently large surface to unfold them with the care necessary to avoid tearing or damage. Some of them have been produced on onionskin, bond or graph paper.

As to photographic material, 100 items include photographs, some of which have been glued to the documents (Figure 3).

**FIGURE 3.** Photographs glued to secondary support media (cardboard) in a technical report of the AT-CNA [digital photograph] (Photograph: Rosaura Mitra; courtesy: INAH, 2020).

**Archival science results**

In terms of classical archival science, based on the principles of provenance, original order and *respect des fonds* (Heredia, 2007, & Consejo Internacional de Archivos, 2000, among others), these bound volumes do not follow an archival order of the information because the information is not in chronological order, nor according to research project or authors. We do not consider that they
respects the original order of the documents. As mentioned before, the documents apparently were bound as they came to the AT-CNA, because the only rationale that can be observed is their alphabetical organization by states of Mexico.

There is no question that the configuration of the AT-CNA seeks to preserve documentary heritage, but because all the reports on a same project are not together, the subject of the research becomes disaggregated, and therefore loses context and unity.

From the archival science perspective, according to La Torre and Martín-Palomino, an important matter in the identification process is to detect the body producing the documentation, which as a “consequence of exercising its duties generates (documents) and does not necessarily send them to the archive” (2003, p. 15). As to document-creating agencies, 61% (184 items) of the sample were produced by INAH; 17%, in collaboration with other institutions; while 55 pieces were produced by other agencies, 7% of which (22) came from international institutions and 11%, from national institutions; 8 were produced by entities that came before the INAH, for example, the Dirección de Antropología del Ministerio de Justicia e Instrucción Pública (3%), as shown in Figure 4.

97 of the 187 documents are from INAH centers led by the Centro INAH Coahuila with 16 documents, then the Centro INAH Baja California (15), and the INAH Centers in Baja California Sur (12), and Sonora (12.) From this point there is a drop (from 5 to 1) in every Centro INAH we recorded as shown in the map in Figure 5.

The rest are from areas within INAH head offices that report to the Coordinación Nacional de Arqueología. The now inexistent De-
partamento de Prehistoria has the most registered documents, 44. International institutions that produce large numbers of documents are the Institut Català de Paleoecologia Humana i Evolució Social (IPHES) from Spain, and the University of Arizona (ASU) in the United States. There are 7 items from each of them.

The time range of these documents runs from 1893 to 2015, which led us to think that it is likely that there are paleontology-related documents everywhere in INAH. Some, perhaps, even before the Institution was created, from the time it was a part of the Ministerio de Justicia y Educación Pública.

**Library science results**

With respect to the kinds of resources, 95% (284 items) of the sample are archival documents, whereas only 5% (14 items) are considered bibliographical material.

Topics and subtopics are shown in Figure 6. We should highlight that we considered that each one belongs, or is somehow related, to paleontology, because they deal with matters derived from biology and geology as well as paleontology, which actually derived from the former two. Authority control 11 was used to validate each one of these topics; in this case, Wikidata (2020) and the Tesaur de arte y arquitectura (Getty, 2020).

---

11 According to Cristina Herrero Pascual, the purpose is to “facilitate document identification and retrieval” and “is constituted after establishing the form of the name to be used in all entries of the catalog, i.e., the approved form or agreed upon authority” (1999, p. 121). It is used for names of persons, entities, congresses, places, and subjects.
Subjects, topics and subtopics are shown in Figures 6 and 7. We observed that these topics were repeated in more than one item. This can be explained by the fact that several were recorded as “Archeology and Paleontology” or “Paleontology and Archeology,” depending on appreciations of how much one predominated over the other. Of the 93 items in which archaeology was recorded as the topic, only 56 are about archaeology, while 37 deal with archaeology as well as paleontology. Meanwhile, of the 69 items recorded as paleontology, 32 deal with this subject alone, while 37 include archaeology. This confirms that archeology is the predominant discipline in the AT-CNA, but also that paleontology has been immersed in archaeological work like rescues or long-standing research projects that in certain stages encountered paleontological materials.
When we reviewed the content of the documents in the sample, we revisited the notion of paleontological rescue to enrich the topics; a notion reenforced by our acquaintance with the areas at the INAH involved in paleontology: the Consejo de Paleontología, Subdirección de Paleontología, centros INAH, and the Subdirección de Laboratorios y Apoyo Académico, all of these areas oftentimes participate in paleontological rescues, even though this is not their core function, as it is for the Subdirección de Paleontología and the centros INAH.

CONCLUSIONS

At first, in the course of the documentary process to select the documents for the sample, the diagnosis to form the ADP-INAH in-
involved documentation sciences. Later, when we prepared and applied the diagnosis-catalog data sheet we integrated conservation. Additionally, we considered archival science principles when we confronted the documents with the organization of the AT-CNA, as well as when we analyzed the description tools of the Archive, its identification of documentary typologies, and the document producers. Finally, in our use of authority control for our diagnosis and in our recording and organizing the documents according to subject and subtopics, we utilized principles taken from library science. We thus treated every one of the stages in our diagnosis in a multidisciplinary manner. These stages in our diagnosis allowed us to integrate a proposal to form an institutional collection at INAH regarding a scientific discipline, in this case, paleontology.

REFERENCIAS


13 Miguel Ángel Rendón Rojas, “multidiscipline occurs when there is a phenomenon under study by different disciplines at the same time (the object of study is shared), but each one of these disciplines holds its own separately (intentions and procedures differ)” (Rendón, 2011, p. 6).


**ABOUT THE AUTHOR**

Rosaura Mitra Ávila  
Coordinación Nacional de Arqueología (*CNA*), Instituto Nacional de Antropología e Historia (*INAH*), México  
mitraura@gmail.com  
ORCID: [https://orcid.org/0000-0002-7777-9601](https://orcid.org/0000-0002-7777-9601)

Ms. Mitra Ávila holds a master’s degree in Documentary Heritage Conservation from the Escuela Nacional de Conservación, Restauración y Museografía (*ENCRYM*, México), and a bachelor’s degree in History from the Universidad Nacional Autónoma de México (*UNAM*). She has worked with archives for more than a decade and is passionate about documentary collections. In 2007 she earned a scholarship from the Spanish Ministry of Culture (*XVII Escuela de Archivos para Iberoamérica*). Since 2013 she has been a national and international speaker and offered numerous courses on archiving, transparency, access to information, and public administration. She is currently a public server at the *CNA, INAH*. Her research focuses on forming and preserving institutional and scientific collections and on urban history.