The Dupuytren Anatomical and Pathological Collections: History and Complexity of the Wet Collections

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The History of the Medical Collections

Since 2016, the Dupuytren Pathological Anatomy Collections have been housed on the Pierre and Marie Curie Campus in Paris, now part of the Faculty of Science and Engineering of the Sorbonne Université. The then-called Dupuytren Museum was founded in 1835 by Guillaume Dupuytren, anatomist and surgeon, and Dean Mathieu Orfila, a Spanish doctor, chemist, and pioneer of forensic toxicology. It was hosted at the old refectory of the Cordeliers until 1937 and then moved to the practice school of medicine at the Paris Descartes medical university (Abelanet and Saint-Maur 1990).

In 1880, the collections were composed of approximately 6,000 inventoried items according to the catalog established by Charles-Nicolas Houel (1877) and today comprise 15,000 to 20,000 pieces, many of which were collected throughout the 19th century and at the beginning of the 20th century. The collections are structured around several types of objects—anatomical waxes, osteological and anatomical specimens, scientific instruments, specimens preserved in fluids, books, drawings, patient records, radiographs, histological slides, printed pictures, and silver bromide photographic plates.

The objects in the collection are of various origins, especially the specimens prepared for medical practical courses—some of them are from research conducted at the Anatomical Society of Paris or from different hospitals in the Public Hospitals of Paris (Assistance publique—Hôpitaux de Paris), whereas others come from international field trips (e.g., Brazil and the UK or from specific collections such as the neuropathological Jules and Augusta Dejerine Collection).

This abstract focuses only on the fixed and fluid-preserved specimens in the collection. Today that corresponds to approximately 3,800 pieces representing different preparation techniques (Fig. 1)—various types of containers, sealants, preserving liquids, and labels with various types of damage (e.g., leaks, cracks, and contamination with mold or grease).

Fluid Specimens: Collection Overview

The historical part of the fluid collection is composed of well-preserved specimens supposedly in their original fluid and container. Jars are mostly sealed with Maissiat (tallow, talc, and caoutchouc [unvulcanized natural rubber]) and have historical labels such as "Faculty of Medicine of Paris—Dupuytren Museum" with descriptions of the pieces. Most specimens are attached to glass rods and sometimes to colored (blue or white) glass plates (Fig. 2). This part of the collection mainly consists of pathological anatomy

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Figure 1. The fluid collection storage room. (© Eloïse Quétel).

specimens related to neurology, cardiology, pneumology, dermatology, teratology, comparative anatomy, and other subjects as well as items in connection with trauma cases (e.g., fractures and foreign objects). The fluid in which the specimens are preserved was made using the original recipe for Kaiserling III solution (Simmons 2014), a recipe that is still used today.

The more recent collection is quite diverse with specimens from entomology, parasitology, ichthyology, botany, conchyliology, and animal testing sources, among others. Specimens are preserved in several types of jars (e.g., glass jars and flutes with lids or caps closed with wax or glycerol [propane-1,2,3-triol]). These newer specimens represent about 60% of the collection. Some pieces are preserved in Kaiserling III, whereas others are in formalin (a mixture of formaldehyde and water) or in Bouin's solution (containing picric acid, formalin, and glacial acetic acid) and more rarely in alcohol (Fig. 3).

It is important to highlight that the collection includes several important pieces that still serve as references today. These include the famous Broca's or Wernicke's patients' brains affected by aphasia (neuropathy), cases of radiodermatitis (gangrene on a hand due to x-ray exposure), lung silicosis, papillomavirus (Benmoussa et al. 2016), or rare or historic preservations of specimens illustrating pathologies such as skin affected by smallpox, intestines affected by typhus, or splenomegaly due to malaria. Indeed, these wet specimens are continually in use for studies of the history of science and of the history of museum conservation-restoration methods, as the collection includes a wide variety of preparation techniques, pathologies, and specimen sources.

Assessments of the Collection and Future Prospects

Assessment and Management of the Collection

Today the Dupuytren Pathological Anatomy Collections are managed by the scientific collections of the Sorbonne Université Library Department, linked with the Libraries Directorate. The Heritage Center is led by the deputy director of the libraries, whereas a university professor and a hospital practitioner at the Pitié-Salpêtrière hospital have scientific responsibility for the Dupuytren collection. A conservator-restorer specializing in human remains and organic materials is responsible for the management, conservation, and enhancement of the medical collections.

In 2016 the university made the decision to close the Dupuytren Museum to the public to assess the state of the collections related to its conservation. That decision was also dictated by the need to bring the building up to health and safety standards and to reflect specifically on the ethical and deontological issues related to the exposure of human remains. As curation and conservation concerns have played an important role in the decision-making process, it was deemed necessary to take stock, review the state of preservation of the collections, and plan its valorization, with appropriate staff and suitable conservation areas.

The first big project undertaken after the museum closure was the arrangement of the specimens into a storage room, which allowed for a clear and legible organization of the various types of collections. The items were classified according to their typology (e.g., anatomical waxes, dry pieces, instruments, histological slides, and wet collections), by anatomical order (from head to toe), and finally by pathology classification. This work also allowed for a review of the various curatorial and conservation issues, related to either unidentified specimens (e.g., lack of labeling, dislodged labels, or unidentified morphology) or preservation issues (e.g., mold contamination, inappropriately prepared specimens, alteration of seals and other enclosures, or damaged storage jars). Despite all these issues, we nevertheless observed that the overall preservation of the collections was quite good.

Projects

The rearrangement of the collections facilitated both day-to-day management and the design of a new database dedicated to the Pathological Anatomy Collections that is now used as the current inventory system. The database lists the important information on the specimen—its storage location and a range of technical, biographical, and bibliographical elements (e.g., typology, origin, the name of the doctor, the artist, or the publication). Another section is dedicated to the state of conservation of the specimen in the storage room. The final database section documents loans, sampling, and analyses where appropriate. Looking ahead, we would like to put the database online to facilitate access to the collection for medical, humanities, and historical research.

A room dedicated to conservation and restoration work is located close to the storage room. The more challenging work requires a dedicated laboratory equipped with suitable individual and collective protective equipment (e.g., a fume hood, respirator, and nitrile gloves). It was also an opportunity to reinforce collaboration with colleagues of the Museum national d'Histoire naturelle of Paris (e.g., restoration of the specimen pictured in Fig. 4, identification of storage fluids using Raman spectroscopy, characterization of historical sealants, and degradation inventory).

In summary our long-term projects for improving the value and awareness of the Dupuytren collection include the continued creation of an up-to-date catalog of the collec-

Figure 2. The historical part of the fluid collection, tar-looking sealants, and colored glass plates. (© Eloïse Quétel).

Figure 3. The more recent collection with several types of jar and fluids. (© Eloïse Quétel).

Figure 4. (A, B) Restoration work of a human tongue, MD.T.2015.0.1045. In brief, the specimen was cleaned and fixed again, new Kaiserling III solution was put into the jar, and an historical look-alike seal was installed. (© Eloïse Quétel).

tion, putting news online on the university website, and the development of a continuing series of temporary exhibitions. These projects are ongoing.

Résumé

Les collections d'anatomies pathologiques Dupuytren comptent aujourd'hui près de 20000 pièces et sont articulées autour de plusieurs typologies d'objets, tel que des cires anatomiques, des pièces ostéologiques, des pièces humides, des archives ou des instruments scientifiques.

Collectées dans le courant du 19ème et du début du 20ème siècle, ces pièces proviennent de plusieurs sources, tel que des préparations pour des cours pratiques en médecine, des recherches au sein de la société anatomique de Paris, des échanges internationaux ou des fonds spécifiques tel que le fonds de neuropathologie Déjerine.

En parcourant brièvement l'histoire de ces collections, nous nous recentrerons sur la présentation des pièces humides et leurs particularités, puis nous présenterons les chantiers en cours, et ceux que nous projetons de réaliser dans le cadre d'une future patrimonialisation des collections d'anatomie pathologique Dupuytren.

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