4e Table ronde internationale des restaurateurs de sceaux

4th international Round Table of seal conservators

Le jeudi 16 juin 2016, Agnès Prévost et moi-même avons eu le plaisir d'accueillir la 4e Table ronde internationale des restaurateurs de sceaux, aux Archives nationales, à Paris, au sein de l'atelier de restauration et de moulage des sceaux. Elle était organisée conjointement par les Archives nationales et par Sigillvm.

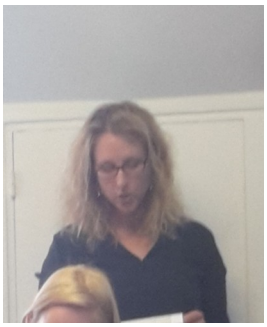
Espaces de rencontre et d'échanges, les tables rondes internationales des restaurateurs de sceaux, dont les précédentes se sont tenues à Madrid, Paris et Oxford, sont l'occasion de mieux connaître les collections sigillographiques européennes et leurs particularités, et de mettre en place des coopérations entre spécialistes.

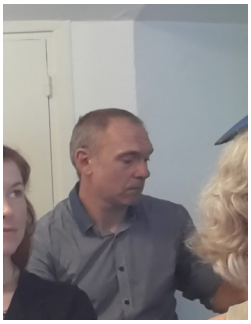
Les participants, venus de toute l'Europe, sont restaurateurs, ou membres du Bureau des directeurs de Sigillvm. Tous sont spécialistes des sceaux. Les intervenants ont été invités à exposer les différents aspects de leur travail et leurs travaux de recherche sur la restauration des collections sigillographiques (documents scellés, empreintes, matrices, moulages, copies…), en présentant leurs activités ainsi qu'un projet spécifique.

Les interventions et débats, dont vous trouverez ici des résumés, feront prochainement l'objet d'une publication en ligne sur le site de Sigillvm.

Marie-Adélaïde Nielen

Archives nationales, Paris





Bénédicte Muls et Franck Laethem

Archives générales du royaume de Belgique

Bruxelles

AVANTAGES ET INCONVÉNIENTS DE LA NUMÉRISATION DES MOULAGES

Entre 2008 et 2015, les Archives générales du Royaume ont numérisé leur collection de quelques 38. 000 moulages de sceaux, rendant ainsi leur image consultable sur le site internet de l'institution. Si la numérisation des moulages de sceaux a montré toute sa pertinence, la question de savoir quelle politique de préservation adopter à l'avenir se pose. Faudra-t-il privilégier la numérisation des sceaux originaux ou plutôt continuer à les mouler pour ensuite numériser ces moulages ? Les deux méthodes présentent chacune des avantages et des inconvénients : la numérisation des sceaux permet certes de protéger ces objets des vicissitudes de la consultation tout en améliorant notablement leur accessibilité et le confort de lecture. Cependant, la question de la pérennité de l'information ainsi que le coût du stockage des données, ou encore la dépendance vis-à-vis des aléas de l'informatique sont des aspects qui ne peuvent être ignorés. L'expérience nous a par ailleurs montré à de nombreuses reprises que le moulage peut parfois devenir source primaire. La poursuite de la politique de moulage des sceaux s'avère donc indispensable, tout comme la nécessité de répondre aux besoins des lecteurs et chercheurs en termes d'accessibilité. Loin de s'opposer, il semblerait finalement que moulage et numérisation soient en réalité complémentaires.

From 2008 to 2015 the State Archives of Belgium digitized their collection of about 38.000 seal casts, making their images available through the institution's website. Even if digitizing seal casts has proven its relevance, we need to ask the question which preservation politics to adopt in the future. Should we prefer digitization of original seals or should we rather continue to mold them and then digitize the casts? Both methods show advantages as well as inconveniences. Digitization allows for a better conservation of the casts by protecting them from the vicissitudes of consultation in reading rooms and improves accessibility and ease of interpretation. On the other hand we can't ignore the question of the durability of the information nor the high costs of data storage, or even the reliability of informatics. Furthermore experience has shown on numerous occasions that the cast of a seal may become the primary source of information. It seems to be indispensable to continue to mold seals, but we also need to meet the needs of readers and researchers in terms of accessibility. In the light of this analysis we can conclude that molding and digitization aren't necessarily opposites, but are in fact complementary.

Maris Jekabsons

National Archives of Latvia

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SEALS IN THE STATE HISTORICAL ARCHIVES OF THE NATIONAL ARCHIVES OF LATVIA,

PROBLEMS OF STORAGE

The National Archives of Latvia holds about 20 million items, 6,5 million of them are housed at the State Historical archive. There are stored Parchment collection from 13-16 century, the archive of the Duchy of Courland and Semigallia (1561-1795), the archive of Riga City, archives of the Livonia Knighthood , archives from the provinces of Livonia and Courland and others. Among them are included significant part of documents with seals.

In the past these documents were folded and stored in paper or cardboard envelopes. Some parchment have signs, that they were being rolled in the past.

These envelopes were stored several together in metal, wooden or cardboard boxes assembled on the wooden or metal shelves or metal cabinets.

There is a severe group of items, relocated, probably during the second half of the 20th century, into metal drawer cabinets, where documents are separated with paper interleaving.

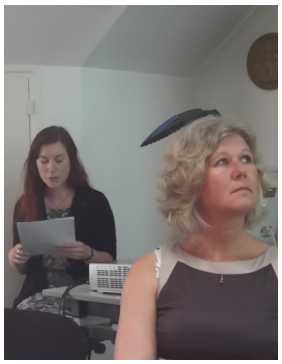
Seals were protected in fabric or leather bags or placed in different material boxes. Fabric and leather bags left rather negative effect. Frequently seals stored in bags are crumbled.

Of course, using inappropriate quality materials leave their effect on documents, but more harmful effect is use of documents, withdrawal and loading back from storage areas.

After restoration seals and parchments have been placed in the new, appropriate boxes, and there is starting a new problem - new storages requiring greater space, which are not available.

Items from the metal drawer cabinets after conservation are placed back between new archival quality appropriate paper interleaving.

The main problem is to ensure suitable storage condition of the storage facilities, caused by the environmental conditions like temperature and humidity during different seasons of the year.



Christina Bosch et Hildegard Hagen

State Archives of Bavarian

Munich

UNDISCOVERED TREASURES: GOLDEN BULLAS IN THE STATE ARCHIVES OF BAVARIA

In 1989 Msgr. Prof. Dr. Aldo Martini, an expert on seals at the Archivio Segreto Vaticano, assumed in the catalogue accompanying the exhibition “Die Goldsiegelsammlung aus dem Geheimarchiv des Vatikans” (“The collection of golden bullas of the Vatican Secret Archives”) that throughout Europe outside the Vatican less than a hundred golden bullas would exist.

This was a huge underestimation: It is known from the recent research that 58 such bullas are stored in the State Archives of Bavaria. It is thus apparent how little is known about the existence, manufacture and physical nature of these rare beauties. The paper highlights the difficulties arising from the research, introduces several specific bullas in detail, challenges the previous scientific consensus about the historical manufacture of these objects and finally elucidates the difficulties of their conservation, discussing various concepts of conservation and unresolved issues.

The collections of the Bavarian Main State Archive include about 290.000 charters. Many kinds of sealing materials are represented, including paper, wax in various colours, shellac, lead, gold and silver.

We have a wealth of information about the seals from before 1401, thanks to an analogue file. This card file is arranged in chronological order and according to the owner of the seal.

After 1401 no comprehensive inventories are extant, therefore one has to resort to the books of reference of the specific collection of charters, which mostly focus on the content of the charter, not the attached seal. It is therefore impossible to easily search for seals made of a specific material, e.g. gold.

In spite of these difficulties, there is an unexpected opportunity, to research an as yet unknown number of golden bullas in the collections of the State Archives of Bavaria. Among them is a very rare exemplar made of solid gold.

During research, other intriguing pieces have also been found, including a charter that had once been sealed with a golden bulla, now lost, the only remnant of which is the wax filling which still remains attached to the charter. Another find is a golden bulla from the

17th century, where the obverse is loose. Analyzing this open bulla gives us a rare opportunity to more easily understand the process of its manufacture as it is clearly constructed in three pieces.

As a result of these finds, a new theory concerning the manufacturing of golden bullas has been developed, which we would like to put forward for discussion.

All the golden bullas have been measured and weighed. In doing so it became apparent that, in line with chronological developments in the dimensions of wax seals, size and weight of the bullas increased over the centuries.

As golden bullas are the works of goldsmiths, no restoration work is carried out on them in the restoration workshop of the Main State Archive. However, through the collaboration with a metal conservator from the Bavarian National Museum, a loose part of a damaged bulla was successfully reattached.

As metal seals are relatively heavy, the cords and laces are particularly stressed and vulnerable. In cooperation with conservators of different disciplines a plan to secure the cords and laces has been developed.

The discoveries in the collections of the State Archives of Bavaria could serve as the basis for further academic research.

Catarina I. A. Santos et Teresa M. V. D. Pinho e Melo

CQC and Department of Chemistry,

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LEAD SEALS AND CORROSION: IS THERE A SOLUTION?

Seals were, for a long time, a means of authentication of documents, in a period when signatures were not so common. Valuable documents that can be found in Archives and Museums collected throughout Europe are facing a common problem, the corrosion of lead seals attached to parchments. The transformation of metallic lead into lead carbonates results in the disappearance of the seal's inscriptions and eventually in their complete destruction.

Studying the collection stored at the Archive of the University of Coimbra, we found several lead seals in different states of corrosion. Lead seals of important documents, such as the sale of the Royal Palace to the University by King Phillip II of Spain (dating from 1597), a precious document in the history of the University of Coimbra, are almost lost, requiring urgent attention.

Storage conditions of this kind of collection are one of the key reasons responsible for the progression of the corrosion process. These charters have been kept in wooden closets between inadequate wrapping papers for too long, which promotes degradation. The presence of corrosive organic acids near the artifacts is estimated to be the most damaging.

This work aims to better understand the different states of corrosion, bearing in mind the different provenances and age. Several variables could be studied but it was decided to start with the influence of the elemental composition of the lead seals, later combined with air quality analysis. In this context we have analyzed some seals by Energy Dispersive X-ray fluorescence (EDXRF), a non-destructive analytical method, which has been extremely useful in the study of Cultural Heritage objects. Its most interesting

characteristic is that it enables an efficient and fast elemental analysis, whenever it is impossible to collect a sample for chemical analysis. The possibility of carrying out qualitative and semi-quantitative analysis (by fundamental parameters) of major and trace elements, without the need to sample artefacts of cultural heritage, makes this technique an exceptional tool.

The lead seals appear to have slightly different chemical compositions, which might explain the slower/faster progression of corrosion. Most elements identified are common to all samples, however some differences are noticeable, in terms of relative amounts. A discussion of this study will be presented.

Furthermore, we applied a local electrolytic reduction based on known general methodologies, intending to stop the corrosion mechanism on superficially corroded seals. Interestingly, no damages to the cords or parchment was observed. Nevertheless, further studies and discussion are needed regarding possible measures for highly corroded cases.

Ilona Teplouhova
National Archives of Latvia
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CONSERVATION OF THE WAX SEALS ATTACHED TO THE DOCUMENTS FROM THE ARCHIVE OF THE DUCHY OF COURLAND AND SEMIGALLIA
(Conservation project of 2015)

State Historical archive of the National Archives of Latvia holds in its possession documents of the former archive of the Duchy of Courland and Semigallia. In this fund are 14 parchment documents with 41 attached wax seal and they are dated between 1355 – 1594 and they have been produced not only in the territory of the Duchy, but also outside its borders (for example, in Poland, Vatican, Germany).

These documents were selected for the conservation project in 2015 based on the following criteria:

- Documents come from a unique and in the same time not very large collection;
- There have been conservation attempts on the documents (around 1970's – 1980's) but the wax seals were left in poor condition or mistreated with inappropriate conservation methods;
- There have never been chemical analyses carried out to determine the composition and/or color pigments used for the wax seals stored in the National Archives of Latvia.

The aim of the project was to carry out the X-ray Diffraction analyses to determine what color pigments are used in these wax seals, to carry out the Raman Spectroscopy analyses to determine what the seals' compositions are, as well as to assess the conditions of parchment documents' and seals and where necessary to carry out the conservation work and improve the storage conditions.

This project has provided important data on wax seals' composition and that in turn will help the National Archives of Latvia to improve the wax seals' conservation

methodology, as well as will allow to compare this data with similar project findings in other countries. Parchment documents and wax seals have been cleaned, conserved if necessary and re-housed.

Elke Cwiertnia

The National Archives

United Kingdom

WAX SEALS – PREPARATION, AGEING AND CONSERVATION: WHERE ARE WE NOW?

Medieval wax seals can contain several wax types, resin, pigments, and other additives. Different wax types and treatments, such as cleaning, bleaching and colouring, create wax with specific characteristics. Evaporation of the volatile components during the production process, reactions with the pigments and ageing of the organic components lead to typical ageing characteristics such as efflorescence, brittleness and colour change. Conservators are challenged by these changes and need to find ways to preserve these fragile objects.

Traditional conservation methods, including consolidation, infilling and cleaning, use wax-resin mixtures similar to the original material or surface-altering solvents. These treatments are not in line with current ethical conservation standards in terms of reversibility or differentiation of the conservation material from the original. Recent studies follow a new approach but are not fully tested on coloured wax mixtures.

The National Archives, UK holds many thousands of non-metallic seal impressions and therefore is investigating into new methods to conserve these important objects of communication. Based on a literature review, material analysis (PLM, FTIR, Py-GCMS, SEM-EDX) and studies on medieval wax seals, the paper will summarise the current knowledge about wax seals and their changes due to production treatments and ageing. Traditional treatments and current conservation approaches will be critically discussed from the conservation scientist point of view to inform and inspire an interdisciplinary dialog for a new methodology for the conservation of wax seals.

Maren Dümmler

Free lance conservator

Neuwied, Germany

WHITE SEALS. DEGRADATION PHENOMENA AND CONSERVATION

The damage and treatment of a specific group of medieval wax seals, known as “Blätterteig-Siegel” (“puffpaste” seals, white seals), was the subject of my master’s thesis. The sealing wax splits off in small layers parallel to the surface. If the flaking damage is very advanced, the seal could desintegrate completely with the slightest pressure put on it. The current theories on the origin of the damage were not satisfactory. An extensive literature study was was the basis for further scientific research (Scanning Electron Microscopy, Infra Red Spectroscopy and Gas Chromatography by Doerner Institute Munich). The poor mechanical properties are caused by a change of composition. The quantity of alkanes with a low melting point and wax esters significantly decreased in the wax. These low molecular weight components function as plasticizer.

Based on the results, different tests with consolidating compounds were carried out. The main problem was to find an application method and a consolidant wich completely would penetrate the fragile texture. If not, a hard shell would form on the outer face, which would produce a predetermined breaking point to the brittle, flaky interior.

Because wax has no sufficient capillary effect to obtain this result, consolidation by means of underpressure has been successfully tested.

Results from different tests series have shown that Aquazol 200, a high-performance water-soluble polymer (Polymer Chemistry Innovations), is a suitable consolidant. The small molecules penetrate well into and between the wax lamella. It can be dissolved in water or alcohol and has comparable thermoplastic properties to wax. Therefore, it renders consolidation possible, as well as cleaning and fusing of wax to protect spoiled edges.

The newly developed consolidation technique has been successfully tested on some white seals of the Landeshauptarchiv Koblenz (LHAK). The long-term stability was tested on test samples with artificial ageing (4 weeks, 30°C, RH changing from 30 to 85%, intervals of 1.5h). No optical changes occurred, mechanical tests were not carried out.

Further investigations into the development of suitable treatment equipment for seals is planned.

Agnès Prévost

Atelier de restauration des sceaux des Archives nationales

Paris

CONSERVATION ET RESTAURATION DES SCEAUX PLAQUÉS DU HAUT MOYEN ÂGE

Dans le cadre d'une exposition à Venise sur « Rome et les barbares », le prêt de deux documents mérovingiens a été demandé auprès des Archives nationales. Ces documents altérés en particulier au niveau de leur sceau nécessitaient une intervention préalable, confiée à l'atelier des sceaux des Archives nationales à Paris.

Au cours du constat d'état préalable à toute intervention, des fibres d'origine inconnue ont été découvertes au sein de ces sceaux brisés. Leur présence ne pouvait pas être un hasard, car ces fibres étaient nombreuses et disposées de façon ordonnée dans la cire.

À première vue, ces fibres régulières semblaient pouvoir être des cheveux. Si de nombreux textes font référence à l'inclusion volontaire de cheveux dans les sceaux, jusqu'alors aucun cas réel n'avait été documenté.

L'enquête mena à un vaste projet de recherche sur les documents du haut Moyen Âge. L'approche de cette étude, voulue pluridisciplinaire, a fait appel à plusieurs professionnels : archivistes, conservateurs, chimistes, travaillant dans différentes institutions. Cette étude, menée tout d'abord sur les documents conservés aux Archives nationales, a été élargie à d'autres institutions patrimoniales en France et à l'étranger, notamment en Allemagne. Le corpus étudié à Paris comprend environ 300 documents produits par les chancelleries royales mérovingiennes et carolingiennes, couvrant les années six cent vingt-cinq à neuf cent quatre-vingt-sept (625 à 987).

Les recherches et analyses scientifiques d'identification des fibres observées ont permis de vérifier l'existence d'une pratique spécifique aux diplômes du haut Moyen Âge : l'inclusion volontaire de cheveux ou poils humains dans leurs sceaux.

Il est extrêmement rare de devoir intervenir sur des documents aussi anciens et ceux-ci présentent nombre de particularités nécessitant une approche spécifique. Au-delà de la découverte, cette étude avait pour objectif d'avoir une meilleure connaissance des matériaux, des modes de scellement et des altérations spécifiques de ces documents. Elle a permis la mise en place des techniques spécifiques de conservation-restauration.