

International Preservation News

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**From Traditional
to Digital Written Heritage:
An Asian Perspective**

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International Preservation News

is a publication of the International Federation of Library Associations and Institutions (IFLA) Core Activity on Preservation and Conservation (PAC) that reports on the preservation activities and events that support efforts to preserve materials in the world's libraries and archives.

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Dame à l'éventail avec son chat.

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In 2013, Singapore is hosting the 79th IFLA World Library and Information Congress with an exciting topic: *Future libraries, Infinite possibilities*. We could not miss this opportunity to dedicate an exceptional double issue of *IPN* to Cultural Heritage Preservation in Asia. This represents a difficult challenge to meet as we are dealing with a very large continent. PAC program is present in Asia through 5 regional centers: Tokyo, Beijing, Seoul, Almaty and Canberra. This shows the importance given to our activities in different countries where cultural traditions, languages, climates, economies, could be so multiple, so varied from a region to another.

For 20 years, in previous issues, we have already dealt with technical preservation topics pertaining to PAC program fields in Asia. This time, we focused the content toward special collections. We chose to present several papers about manuscripts, even tomb engravings and photographs. Obviously, the thread is digitization and how it allows not exactly a better preservation of the originals but a better awareness of the need to preserve and promote them. Beyond preservation strategies, Cultural Heritage is a major mean of strengthening identity for one country.

Training is one of PAC missions. In this field, ICCROM has been leader for a long time and the program CollAsia should be a model for long term training. One of its main qualities is to consider Cultural Heritage conservation as a whole; maybe the time of dividing heritage between libraries, archives and museum is behind us.

Alas, Cultural Heritage is fragile and could be ruined in a night or a in a week by large disasters. It could be also something more insidious, linked to climate, pollution and lack of human attention. Japan, after the terrible tsunami occurred in 2011, proposes to share its experience of a large recovery training, at a country scale.

I wish you a nice reading. I am convinced that all of you will understand that the 2 key words are regional cooperation and training. We need to share methods even if some of them are linked to specific geographic conditions. This is why *IPN* is so useful: it allows comparisons between different perspectives. It is important not to have a global and single-minded approach for all libraries in the world but to pick up inventive ideas everywhere.

Christiane Baryla
IFLA-PAC Director



Figure d'éventails. Manuscripts Orientaux. Ref. : RC-B-13327. © BnF

CollAsia 2010: Conserving Cultural Heritage Collections in Southeast Asia

by **Katriina Similä**, Project Manager, ICCROM, Roma, Italy

Executive Summary

This report describes the results of the CollAsia 2010 programme. Special focus is given to the main activities implemented between 2002 and 2011: the regional courses and field projects. Readers will also find extensive information on the structure of the programme, educational methodologies, finances and partners.

It is impossible to make generalizations when considering such a diverse region as Southeast Asia. However, when it comes to conserving museum, library and archive collections, there are clearly a number of common challenges shared by countries at the regional and/or sub-regional level. The main ones were identified during the 2002 Bangkok Seminar organized by ICCROM and SPAFA and which led to the launch of CollAsia 2010. The report shows how programme activities have responded to these challenges.

CollAsia 2010 is a partnership between ICCROM, an intergovernmental organization based in Rome, and SEAMEO-SPAFA, a regional organization based in Bangkok. The past few years have shown the relevance and effectiveness of this partnership. From 2002 to 2011, 355 heritage professionals were mobilized through the CollAsia programme, and nearly 250 professionals from over 145 institutions participated in one or more CollAsia activities. They are conservators, curators, directors, scientists and collections care staff working in major museums, libraries and archives around the region.

Through CollAsia 2010, they have had the opportunity to meet with their peers across borders and disciplines, increasing their capacity to address the complex challenges of conserving collections. CollAsia 2010 is now an emerging network of professionals eager to work together to identify innovative tools and solutions. This is progressively changing the way professionals view their own role, how they interact, and how they perceive the heritage that they are responsible for. The combined impact of new skills, international exposure and a broad variety of didactic tools, is enabling the profession as a whole to grow and make conservation decisions that are better informed and more efficient, all of which benefit collections around the region.

In the framework of CollAsia 2010 as in all ICCROM activities, the guiding principle is partnership. Stronger collaboration, not only within an institution but across borders and disciplines, can alleviate many of the problems attributed to a lack of resources, expertise or technology. CollAsia 2010 relies on its growing network of former participants to advocate this approach.

This is a challenging process in itself. Language barriers, bureaucratic inertia, lack of basic training in conservation and/

or lack of awareness, are some of the obstacles to continuous professional development, as in many other countries around the world. Also, professionals in local and provincial institutions face enormous difficulties in accessing resources and opportunities available at the national and/or international level.

The present report outlines the CollAsia 2010 approach to meeting these challenges, with the aim of ensuring the safeguarding of Southeast Asia's heritage.

Introduction to CollAsia

History

The CollAsia 2010 programme is ICCROM and SPAFA's response to participants' recommendations from the *Seminar on Conservation of Collections in Southeast Asia: Development of Regional Strategies*, held at SPAFA headquarters 19-22 July 2002. The seminar gathered high-level officials of heritage institutions from nine Southeast Asian countries and representatives of ICCROM, SPAFA and UNESCO. To address the issues identified, participants recommended that a long-term strategy be devised for the safeguarding of Southeast Asian collections.

Purpose

The aim of CollAsia2010 was to improve conservation conditions of heritage collections across the region. It was implemented by ICCROM, of Rome, Italy, and SPAFA (SEAMEO Regional Centre for Archaeology and Fine Arts), of Bangkok, Thailand. The programme was designed as a comprehensive, integrated approach to address relevant conservation issues involving the widest possible array of partners (local, national, regional, international).

Regional courses

A dozen courses were organized to increase skill levels and provide networking opportunities for professionals working in heritage institutions across Southeast Asia. Two- and three- week courses focused on a specific topic or material, while the cur-

Issues identified:

- Southeast Asia faces dramatic growth in the museum field;
- Collections are continuously expanding in size and variety;
- Lack of sufficient training and professional development for staff of heritage institutions;
- No systematic documentation of traditional skills and techniques;
- Insufficient knowledge-sharing and professional networking;
- Limited and sporadic collaboration at the regional level;
- Low levels of public awareness and participation.

riculum adopted a problem-solving approach designed to build on existing skills. Modules consisted of lectures by professionals from ICCROM and SPAFA's networks, group work, and study visits to institutions in the vicinity of the course venue.

Field projects

The aim of the two field projects carried out under CollAsia2010 was to make concrete improvements in the conservation conditions of given collections in Southeast Asian heritage institutions and ensure the long-term safeguarding of those collections. National and local institutions of participating countries were invited to suggest initiatives that would provide tangible benefits to existing collections. Hands-on, practical activities ensured such results alongside of the expected educational outcomes, which illustrated firsthand the value of pooling available resources and expertise to accomplish target objectives.

Methodology

Based on the premise that the participants had as much to teach one another as the instructors and developed within a multi-lingual framework that leveraged non-verbal, hands-on learning, the CollAsia framework gave participants immediate opportunities to put theory into practice. Participants' newfound confidence and proficiency were further demonstrated at the programme's concluding forum, at which professionals reported on subsequent initiatives and shared their most valuable findings.

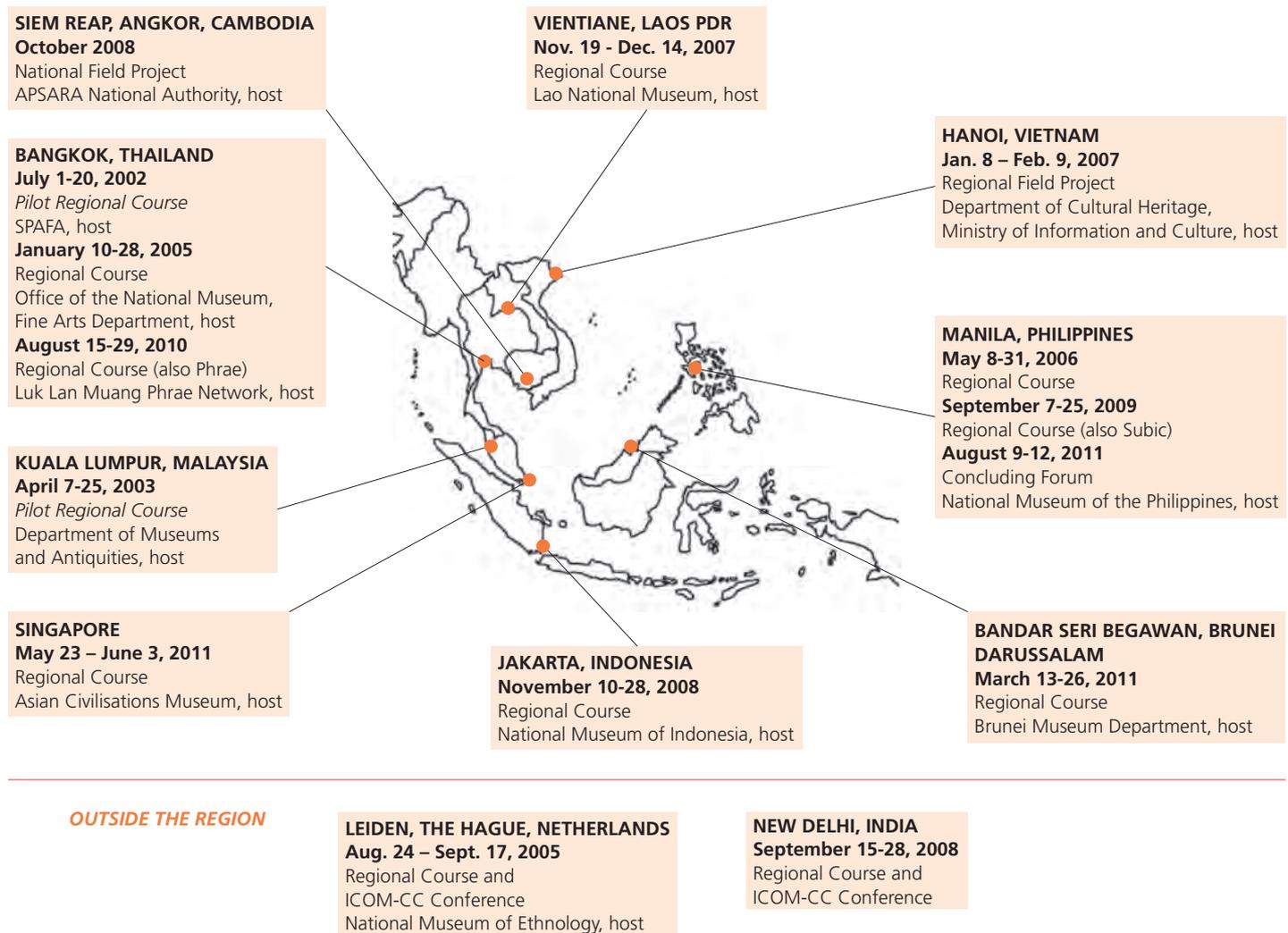
Through a series of unique learning experiences in which participants used the subject of conservation to learn about the essential components of education, by the completion of CollAsia2010 the programme both expanded its network and ensured its continuation by a new leadership cultivated from within. Both as leaders in their institutions, in their communities and across the region, the members of CollAsia now stand equipped and ready to proceed forward in their ownership of Southeast Asia's cultural heritage conservation efforts and education.

Participating countries of the CollAsia 2010 programme are the eleven Member Countries of SEAMEO (Southeast Asian Ministers of Education Organization):

BRUNEI DARUSSALAM - CAMBODIA - INDONESIA - LAOS - MALAYSIA - MYANMAR - PHILIPPINES - SINGAPORE - THAILAND - TIMOR-LESTE - VIETNAM

Activities around the Region

The fifteen activities organized within the CollAsia programme were held in 11 different countries, nine of which are within the Southeast Asian region. These nine countries along with Myanmar and Timor-Leste make up the eleven member countries of SEAMEO (Southeast Asian Ministers of Education Organization), all of which participated in the programme.



Spotlight on International Courses & Field Projects

Pilot Courses

2002: Preventive Conservation Strategies for Collections in Southeast Asia (Bangkok, Thailand)

2003: Flexible Materials in Asian Collections: Conservation, Presentation and Use (Kuala Lumpur, Malaysia)

Regional Courses

2005: Conservation and Exhibition of Southeast Asian Collections (Bangkok, Thailand)

Conservation of Textiles in Southeast Asian Collections (Leiden, the Netherlands)

2006: Conservation of Southeast Asian Collections in Storage (Manila, the Philippines)

2007: Traditional Knowledge & Scientific Principles of Conservation (Vientiane, Lao PDR)

2008: Developing Appropriate Skills in Conservation (New Delhi, India)

Buildings: Environments for Collections (Jakarta, Indonesia)

2009: Conservation of Underwater Collections (Manila/Subic, the Philippines)

2010: Conservation, Communication and Community (Bangkok/Phrae, Thailand)

2011: Conservation of Collections and Intangible Heritage (Brunei)
Managing Risk from Climate Change: Southeast Asian Collections in Peril (Singapore)

CollAsia: Next Steps, Concluding Forum (Manila, Philippines)

Field Projects

2007: Teamwork for Sustainable Collections Care (Hanoi, Vietnam)

2008: National Training Activity - Conservation & Context: Collections & their Heritage Sites (Siem Reap, Cambodia)

Examples of Training: Conservation of Southeast Asian Collections in Storage (2006)

Aim

The aim of the course was to build capacity among Southeast Asian professionals working in museums, libraries and archives to implement storage strategies for their collections. It achieved this through the study of threats to collections in storage, conceptual and practical tools, storage materials and techniques, as well as problem-solving approaches to relevant needs.



Practical sessions on different types of materials in storage: at the botanical collection of the National Museum (left) and at the photographic archives of the Asian Development Bank (right).

Duration

3.5 weeks (8 to 31 May 2006)

Participants

20 heritage professionals representing 9 countries: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam.

Partners

ICCROM

SEAMEO-SPAFA

National Museum of the Philippines

University of Santo Tomas, Philippines

Place

Manila, Philippines

Course activities

Following a brief overview, the course began by exploring and activating the capacity of the course team and the participants to work together in an interactive and dynamic way. Special attention was paid to devising ways to overcome linguistic challenges, considering that English was not the first language of most people taking part.

The **first module** began by asking the question, "What do museums store and why do they store it?" and then exploring the diversity of materials and values that are contained in objects and collections. The importance of institutional mandates for assigning significance to particular objects and collections was underlined. The principles and skills necessary for meaningful observation and documentation, as well as discussion with colleagues about different types of objects, were practiced. The use of existing documentation, and the relationship between the labeling and locating of objects, was discussed. Participants were encouraged to think about storage as an area of responsibility and a function of an institution, not only as a static physical space.

The purpose of the **second module** was to encourage participants to consider the physicality of storage. This module aimed at strengthening the understanding of the risks facing collections and the fragility of collections in their environment. After a general overview, special attention was given to the themes of understanding built spaces, of dynamics of dust in storage areas, of bio-deterioration, and of monitoring the storage within an institution. This module also focused on developing the skills of the participants in applying scientific methods in their work. The module included a one-day practice assessment at a heritage institution.

The **third module** addressed skills and concepts necessary for devising practical solutions for the storage needs of different types of objects and collections. The principles and practice of handling objects were addressed, as well as alternatives for effective and safe storage of collections. Time and attention were given to designing, executing and discussing supports, containers and furniture. The qualities, strengths and weaknesses of traditional containers from the Philippines (and Southeast Asia) were discussed, as a basis of selection between different material options. The module included a visit and presentation from colleagues in the Philippines working on the development of locally-produced conservation quality paper.

The **final module** of the course addressed issues of long-term planning on an institutional level. One day was dedicated to the Museum Emergency Preparedness (MEP) programme at the National Museum of the Philippines. The second day discussed principles and examples of long term planning for storage management. The final day was dedicated to drawing conclusions, discussing ideas for the future and evaluating the course.

Traditional Knowledge and Scientific Principles of Conservation Training (2007)

Aim

The purpose of this course was to improve scientific literacy and establish a common language for sharing conservation knowledge among professionals caring for Southeast Asian heritage collections. The course reviewed, discussed and compared living cultural practices and current conservation principles and approaches. It focused on the scientific principles underlying the manufacture, use and conservation of collections. Participants were encouraged to share their traditional collections conservation practices while exploring scientific aspects of those practices. Traditional Southeast Asian solutions were used to understand, evaluate and further develop approaches which are cost-effective and sustainable using locally-available materials.

Course activities

During the **first week**, participants were introduced to one another and the fundamental concepts of the course, including how to frame both objects and collections, and how to communicate their significance through an institutional mandate. The concept of the scientific method was also discussed, including the processes of observation and documentation and the value of traditional knowledge systems.

The course became more technical in the **second week**. Participants studied the chemical and mechanical processes used to create objects to better understand how these processes and the environment cause deterioration and the importance of monitoring. Visitors included a group of manuscript and paper-makers to demonstrate weaving and dying.

The **third week** was spent practically on exercises in critical reading and risk assessment and management, as well as an experimental design in traditional pest control methods. Additional



subjects addressed project planning, resource mobilization, disaster preparedness and choosing a conservation strategy.

Duration

4 weeks (19 November - 14 December 2007)

Participants

21 heritage professionals and 6 observers from 9 countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand and Vietnam.)

Partners

ICCROM, SEAMEO-SPAFA, UNESCO and the Department of Museums and Archaeology, Ministry of Information and Culture, Lao National Museum (Vientiane)

Place

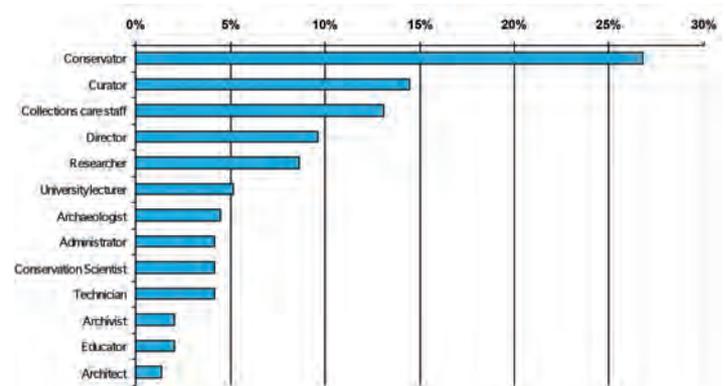
Vientiane, Lao PDR

Profiles of Participants

Professional Diversity

CollAsia 2010 recognizes that heritage institutions in Southeast Asia employ staff with a broad range of professional and educational backgrounds. Lack of specialized staff in most countries in the region means that people with all kinds of job titles carry out conservation duties.

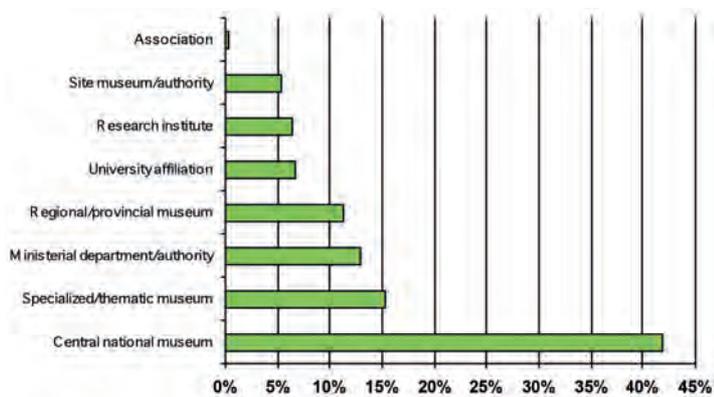
According to participants' applications, attendees hailed from all corners of the heritage field, although over 40 percent identified themselves as conservators or curators. As expected, participants also included collections staff, administrators, researchers and technicians. Non-museum professionals included archivists, architects and university lecturers/professors.



These professionals also have very diverse educational backgrounds. While many have academic degrees, only some have been formally trained in how to apply a methodological approach to understanding material culture, its deterioration processes and conservation. Typically skills and competencies are acquired on the job with rare opportunities for continuing education.

Institutional Diversity

In addition to professional diversity, institutional diversity is a key feature of CollAsia 2010 courses. Based on attendances, the most significant presence was central national museums

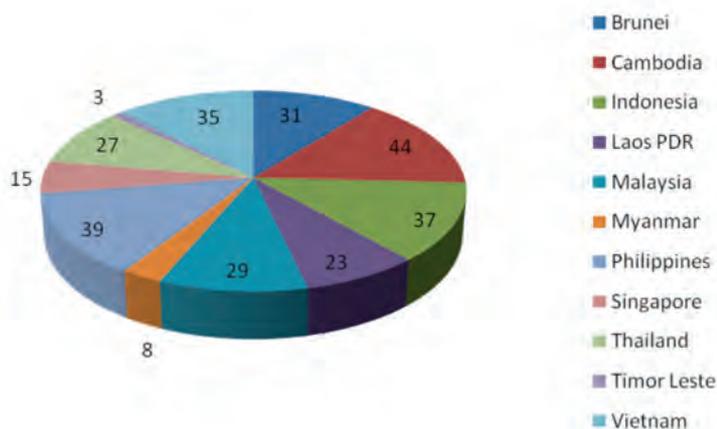


followed by specialized or thematic museums, then ministerial departments and national heritage authorities and regional or provincial museums.

In more recent years, attendances increased by one-third from ministerial departments and national heritage authorities.

National Diversity

Participants hailed from 25 countries across the globe, including 11 countries in the Southeast Asian region. Of those from Southeast Asia, the greatest number came from Cambodia, the Philippines, and Indonesia.



A small number of participants joined from outside the region either from neighbouring Asian countries such as Bangladesh, China, India, Japan, Korea, Nepal and Sri Lanka, or European countries, including the Czech Republic, France, Germany, Italy, the Netherlands, Sweden and the United Kingdom. All participants from outside the region funded their own participation.

CollAsia Curriculum

Learning Methodology

Participants have consistently praised the CollAsia course methodology as effective and inspiring. The underlying principles are a focus on the learners and the learning process and that effective learning takes place in a variety of settings. The result is an emphasis on problem-based and interactive approaches, team-teaching and group work.

Activities included formal lectures, brainstorming sessions, hands-on practical sessions, interviews with museum staff, vis-

its to local institutions and suppliers of materials, participant presentations and film club sessions.

Key to uniting professionals that speak different native languages and of varying English proficiency has been the use of non-verbal learning modalities. A noted outcome of such an approach has been participants' recognition and confidence that learning happens with even limited understanding of the language of tuition.

An expert in textile conservation, educational advisor and key member of the CollAsia team, Dinah Eastop remarked that perhaps, "...the greatest impact has been to reinforce my commitment to the promotion of learning, as opposed to teaching. I've learned to explore new ways to 'teach' which are more fun, more focused on core points, and much more effective."

Impact

The impact of programme activities was assessed through evaluations sent to participants six months after the end of each course as well as formal and informal discussions between different participants, lecturers, ICCROM and SPAFA. Evaluations of the Bangkok, Leiden and Manila courses showed overall satisfaction rates of over 90% with the quality of the courses, based on criteria such as quality of coordination, lecturers and materials, clarity of presentations, relevance of topics and balance between theory and practice.

Moreover, the information contained in the evaluations showed that former participants, upon returning to their home institutions, use their new skills and knowledge:

- to disseminate their knowledge through publications, blogs, reports and presentations;
- to train younger staff;
- to give technical assistance to other public and private institutions.

Echo Activities: Findings from Manila 2011

This was confirmed by former participants and course team members attending the concluding forum in the Philippines, at which many shared presentations of their conservation and training efforts since their participation and discussed their use of various course concepts and the integration of key principles presented in CollAsia. Primary among these was their dissemination of knowledge amongst staff at the home institution, the importance of preventive conservation, and the involvement of the local community.

Capability: Leadership Can Take Many Forms

In most Southeast Asian cultures there is an exceptional and sincere ingrained respect for teacher-ship and experience. This is a precious characteristic for developing educational strategies in any field. However, in an emerging field such as conservation, with vaguely defined local traditions, sometimes this respect can hold back younger professionals from embracing their potential in developing such strategies. Professionals in Southeast Asia, both young and old, can and must have a decisive role in shaping the future nature of conservation and education in this field in their region.

If the application and evaluation forms are anything to go by, CollAsia participants are acutely aware of the need of training and education on all aspects of conservation. However, the awareness of their own potential role in this respect is often dormant. The educational training components of the CollAsia activities have strived to awaken the participants to find their own role in training and education. This can take many forms, and training activities do not only need teachers. The capacity to identify areas for relevant training within an institution can be as important, if not more so, than being a teacher on a specific subject.

It is encouraging to note that a key result for many participants in a CollAsia activity has been increased confidence, both in carrying out duties with new insights, and in taking on the trainer role within their countries and beyond. The CollAsia programme has focused less on crafting and controlling the contents of any participant's specific echo activity, and devoted more attention and energy on building participants' confidence to take on the challenge to speak out and share whatever they have learnt. Becoming a teacher is first of all about attitude, building on the characteristics and strengths of the individual and their personality. In view of the various bilateral and institution-specific training projects taking place in the different parts of the region, the capacity of the local professionals to contribute to shaping and implementing such activities is of vital importance.

Community: Professional, Regional and Virtual Networks

Building sound conservation strategies and carrying out appropriate treatments is a collaborative effort on several levels. By asking participants to reconsider the professional identity of conservator, CollAsia has transformed this concept from a set of mechanical actions carried out behind closed doors in laboratories to a shared responsibility of making informed decisions together as a team and a community.

CollAsia has made the map of Southeast Asia come alive for its participants. For many the courses offered not only new professional knowledge, but their first taste of a new country and culture. Marked by a strong sense of inclusiveness, the CollAsian experience also gave participants an opportunity to identify the commonalities across the region. Learning about common challenges and shared histories helped to create a new type of bond.

The explosive increase in access to electronic communication tools in Southeast Asia has been put to good use by the CollA-

sia network. Professional relations and friendships are kept alive through text messages and social media such as Facebook. In addition professionals use these platforms to recommend articles, share photos of their latest initiatives and congratulate one another.

Sustainability: "The CollAsia Legacy"

One of the most significant developments of CollAsia has been the "Collasia Credo," which has sustained the distinct identity of the programme and underpinned its success. Key features include a sense of collective solidarity and an internalisation of purpose, characterised as 'can do and will do'. Recognising one's own potential and responsibility has led not only to the immediate application of knowledge and approaches gained during the courses but also to professional daring in achieving the apparently impossible.

CollAsia has hopefully contributed to dispelling the myth of conservation as a set of solutions to be imported from the West, and encouraged colleagues in Southeast Asia to become active members – not passive consumers – in the development of the profession as a part of the international conservation community. By fostering a regional professional exchange and mobilizing institutional resources, CollAsia has created a network to which conservators and other heritage professionals may look for both guidance and collaboration when addressing conservation-related issues.

Looking forward, CollAsia aims to address new frontiers in the conservation field, such as cultural tourism, as well as continuing the dialogue on such issues as the benefits of traditional and contemporary conservation approaches, community empowerment, and climate change.

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ArtCollAsia 2010: Conservación de las colecciones de patrimonio cultural en el sudeste asiático

CollAsia 2010 es una colaboración entre el ICCROM, organización intergubernamental con sede en Roma, y el SEAMEO-SPAFA, organización regional asentada en Bangkok. Desde el 2002 hasta el 2011, 355 profesionales del patrimonio se movilizaron a través del programa CollAsia, y cerca de 250 profesionales de más de 145 instituciones participaron en una o más actividades de CollAsia. El grupo estuvo compuesto por conservadores, curadores, directores, científicos y personal responsable del cuidado de colecciones en museos, bibliotecas y archivos importantes alrededor de la región.

A través de CollAsia 2010, tuvieron la oportunidad de reunirse con sus pares de otras fronteras y disciplinas, aumentando su capacidad para enfrentar los retos complejos de la conservación de colecciones.

Cursos regionales

Se organizó una docena de cursos para incrementar los niveles de destrezas y ofrecer una red de oportunidades para los profesionales que trabajan en instituciones de patrimonio a través del sudeste asiático. Los cursos de dos y tres semanas de duración estuvieron centrados en un tema o material específico, mientras que el currículo adoptó un enfoque de solución de problemas diseñado para construir sobre la base de las destrezas ya existentes. Los módulos estuvieron formados por charlas dictadas por profesionales del ICCROM y las redes del SPAFA, trabajos grupales y visitas de estudio a instituciones en los alrededores de la sede del curso.

Proyectos de campo

La finalidad de los dos proyectos de campo emprendidos bajo CollAsia 2010 fue hacer mejoras concretas en las condiciones de conservación de colecciones dadas en instituciones patrimoniales del sudeste asiático y asegurar la salvaguarda a largo plazo de dichas colecciones. Se invitó a instituciones nacionales y locales de los países participantes a proponer iniciativas que aportarían beneficios tangibles a las colecciones existentes.

Impacto

En el marco de CollAsia 2010, al igual que en el resto de las actividades del ICCROM, el principio rector es la asociación. Una mayor colaboración, no solo dentro de una institución sino entre países y disciplinas, puede aliviar muchos de los problemas que se atribuyen a la falta de recursos, pericia o tecnología. CollAsia 2010 cuenta con una creciente red de antiguos participantes para abogar por este enfoque.

CollAsia ha contribuido a disipar el mito de que la conservación tiene un conjunto de soluciones que se pueden importar de Occidente, y ha alentado a sus colegas del sudeste asiático a convertirse en miembros activos – no consumidores pasivos – en el desarrollo de la profesión como parte de una comunidad internacional de la conservación. Al fomentar un intercambio profesional en la región y movilizar los recursos institucionales, CollAsia creó una red a la cual los conservadores y otros profesionales del patrimonio pueden recurrir tanto para obtener una guía como colaboración cuando abordan temas relacionados con la conservación.

Preserving the Past for the Future: National Mission for Manuscripts, India

by Prof. Dipti Tripathi, Director, National Mission for Manuscripts, New Delhi, India

1. India has got, at a reasonable estimate, around 10 million manuscripts which is perhaps the single largest number in any country in the world. This number does not include Indian manuscripts in the custody of institutions outside India. The manuscripts heritage of this country represents the cumulative knowledge, experience and practices of the people for almost 5000 years. The present available manuscript wealth is only a fraction of what must have been there once upon a time. A major portion of this heritage has been lost due to ravages of time, natural calamities and destruction by foreign invaders. Harsh tropical weather has also contributed to the destruction of this national heritage.

1.1 Before India gained independence in the year 1947, the princely States in this country took pride and showed interest in acquiring and preserving manuscripts in whatever way they could. After independence, with a change in political scenario, the patronage that manuscripts had received from princely states slowly and slowly waned. Today many of these collections have been converted into Oriental Research Institutes like the ones at Varanasi, Darbhanga, Baroda, Mysore, Thiruvananthapuram, Thanjavur and so on. Some of these institutions were incorporated into respective universities while others are functioning as autonomous institutions. But one thing is common to all; they are extremely short of resources for safe keeping and preservation of manuscripts.

1.2 Though the first Prime Minister of India had acknowledged the importance of manuscripts and expressed his commitment to preserving and exploring the heritage, even before independence¹, it was only after 55 years of independence that some concrete action was taken.

1.2.1 The National Mission for Manuscripts was conceptualized in the year 2002 and it started functioning in the year 2003. The Mission is the first national level intervention by the Government of India for creating an exhaustive database, preserving and conserving manuscripts and disseminating the knowledge contained therein. It is the only institution of its type in this country which is in project mode under the Ministry of Culture, Government of India.

The National Mission for Manuscripts was launched through a Gazette Notification on the 5th of February, 2003 with a fivefold mandate:

i) To document and catalogue Indian manuscripts, wherever they may be, maintain accurate and up-to-date information about them and the conditions under which they may be consulted.

- ii) To promote ready access to these manuscripts through publications, both in book form as well as machine readable form.
- iii) To facilitate conservation and preservation of manuscripts through training, awareness and financial support.
- iv) To boost scholarship and research in the study of Indian languages and manuscriptology
- v) To build up a National Manuscripts Library.

It was envisaged that this would lead to enhanced manuscript access, improved awareness about the cultural heritage of the country and would encourage use of manuscripts for education and research purposes as well as lifelong learning.

2. The Mission runs co-terminus with the Five Year Plan period of the country. The first phase of the Mission began in February, 2003 and ended on the 31st of March, 2008. The second phase had a slightly late beginning. Actual work in this phase commenced in January 2010. This phase came to an end on 31st March, 2012. Presently the Mission is in its third phase beginning from 1st April 2012. This phase will come to an end on 31st March, 2017.

2.1 The headquarter of the Mission is located in Delhi. It functions through two types of centres - Manuscript Resource Centres and Manuscript Conservation Centres - spread across the country. The Resource Centres are the arms through which the Mission creates its database. The Conservation Centres provide training in conservation. They also provide preservation services to the holders of manuscripts. At present there are 57 Manuscript Resource Centres and 50 Manuscript Conservation Centres located in all the states from Kashmir to Kanyakumari and from Gujarat to Assam².

3. In India, there are not many academic or training programmes available to persons interested in the field of manuscriptology, palaeography as well as conservation. In order to compensate for lack of trained manpower, the Mission holds training programmes in these areas at the basic as well as advance level.

3.1 Under its research and publication programme, the Mission holds seminars in different subject areas, with focus on manuscripts. This is done in collaboration with academic institutions. It has proven to be a useful tool in exploring unpublished manuscripts. It has also led to scholars getting involved in meaningful research on manuscripts related to different disciplines. As a follow up action of these programmes the Mission publishes the proceedings of seminars and results of research activities. In the recent past some of the topics covered in seminars on unpublished manuscripts related to Mathematics, Architecture, Astronomy, Works on Poetics in the southern peninsula, Ayurveda, Siddha, Nyaya and Tantra. Such seminars get the scholarly world actively involved in consultation of manuscripts, leading to exploration of unexplored manuscripts.

1. "One of our major misfortunes is that we have lost so much of the world's ancient literature - in Greece, in India, and elsewhere. Probably an organized search for old manuscripts in the libraries of religious institutions, monasteries and private persons would yield rich results. That, and the critical examination of these manuscripts and, where considered desirable, their publication and translation, are among the many things we have to do in India when we succeed in breaking through our shackles and can function for ourselves. Such study is bound to throw light on many phases of Indian history and especially on the social background behind historic events and changing ideas." *Discovery of India*; Jawaharlal Nehru (p. 70, 1st ed.).

2. Map of conservation centres and resource centres. Detailed list in Appendix.

MRC

1. Leh, Jammu & Kashmir
2. Srinagar, Jammu & Kashmir
3. Dharmshala, H.P.
4. Simla. H.P.
5. Hoshiarpur, Punjab
6. Haridwar, Uttarakhand
7. Pauri Garhwal, Uttarakhand
8. Kurukshetra, Haryana
9. New Delhi, Delhi
10. Alipur, Delhi
11. Rampur, U.P.
12. Varanasi, U.P.
13. Lucknow, U.P.
14. Vrindavan, U.P.
15. Ghazipur, U.P.
16. Agra, U.P.
17. Meerut, U.P.
18. Patna 1, Bihar
19. Patna 2, Bihar
20. Darbhanga, Bihar
21. Nalanda, Bihar
22. Arrah, Bihar
23. Kolkata, West Bengal
24. Bhubaneswar, Orissa
25. Bhadrak, Orissa
26. Guwahati, Assam
27. Silchar, Assam
28. Moranhat, Assam
29. Imphal, Manipur
30. Tripura West, Tripura
31. Ujjain, M.P.
32. Sagar, M.P.
33. Indore, M.P.
34. Raipur, Chhattisgarh
35. Jodhpur, Rajasthan
36. Ahmedabad, Gujarat
37. Bhavnagar, Gujarat
38. Dwaraka, Gujarat
39. Pune 1, Maharashtra
40. Pune 2, Maharashtra
41. Ramtek, Maharashtra
42. Kolhapur, Maharashtra
43. Tirupati, A.P.
44. Hyderabad, A.P.
45. Pondicherry, Pondicherry
46. Mysore, Karnataka
47. Shravanabelagola, Karnataka
48. Keladi, Karnataka
49. Bangaluru, Karnataka
50. Hampi, Karnataka
51. Thanjavur, T.N.
52. Chennai 1, T.N.
53. Chennai 2, T.N.
54. Kanchipuram, T.N.
55. Thiruvananthapuram, Kerala
56. Ernakulam, Kerala
57. Tirur, Kerala



Map not to scale

MCC

1. Leh, Jammu & Kashmir
2. Simla. H.P.
3. Hoshiarpur, Punjab
4. Nainital 1, Uttarakhand
5. Nainital 2, Uttarakhand
6. Kurukshetra, Haryana
7. New Delhi, Delhi
8. Alipur, Delhi
9. Ghazipur, U.P.
10. Vrindavan, U.P.
11. Rampur, U.P.
12. Gorakhpur, U.P.
13. Lucknow, U.P.
14. Varanasi, U.P.
15. Patna 1, Bihar
16. Patna 2, Bihar
17. Arrah, Bihar
18. Kolkata, West Bengal
19. Bhubaneswar 1, Orissa
20. Bhubaneswar 2, Orissa
21. Bhubaneswar 3, Orissa
22. Burla, Orissa
23. Tawang, Arunachal Pr.
24. Guwahati, Assam
25. Silchar, Assam
26. Imphal, Manipur
27. Tripura West, Tripura
28. Indore, M.P.
29. Raipur, Chhattisgarh
30. Jodhpur, Rajasthan
31. Jaipur, Rajasthan
32. Kota, Rajasthan
33. Ahmedabad, Gujarat
34. Pune, Maharashtra
35. Hyderabad 1, A.P.
36. Hyderabad 2, A.P.
37. Tirupati, A.P.
38. Bangaluru 1, Karnataka
39. Bangaluru 2, Karnataka
40. Sharvanbelagola, Karnataka
41. Hampi, Karnataka
42. Keladi, Karnataka
43. Udipi, Karnataka
44. Chennai, T.N.
45. Thanjavur, T.N.
46. Trivandrum 1, Kerala
47. Trivandrum 2, Kerala
48. Ernakulam 1, Kerala
49. Ernakulam 2, Kerala
50. Tirur, Kerala

4. The Mission has slowly but diligently been applying itself to the mandated tasks and thus has been able to create, to date, a database of more than 3.5 million manuscripts. Though the numbers are impressive but it cannot be claimed that the Mission has reached a stage where it could congratulate itself on a job well done. This is because we have only been able to partially cover 6 States and as can be well imagined we have a massive task ahead.

4.1 Perhaps due to a long period of neglect even the big repositories in the country lack in trained manpower as well as infrastructure in handling and keeping manuscripts. The Mission through its training programmes is trying to address these issues. In the field of conservation, over the past several years it has been able to train more than 4500 persons. Similarly, through training programmes on manuscriptology and paleography, a resource pool of around 2000 trained young scholars has been created.

4.2 Dissemination of knowledge content of manuscripts is an integral part of NMM's mandate. There are several constraints in its implementation. The number of scholars in the country working in this field is very small. The reason for this is not far to see. Firstly, specialized training is required to work on manuscripts and secondly, there has to be commitment and dedication to unraveling the knowledge content lying dormant in these. Both these factors make it highly difficult for an average researcher to start working in this area. The National Mission for Manuscripts has got a three pronged strategy for creating awareness, generating interest and getting scholars actively involved in this sort of work.

4.2.1 Lecture series entitled *Tattvabodha* is organized all over the country in different centres on topics related to manuscripts. Twenty four (24) lectures per annum are organized. It is planned in a way in which all the states of India get to participate in this programme. The response we get from scholars and people at large is highly encouraging. For wider dissemina-

tion of these lectures, the papers are compiled and printed in a volume at the end of each financial year. This series of books is also called *Tattvabodha*. We have been able to publish 4 volumes till now and 2 volumes are in press.

5. In the initial stages of the Mission, effective strategy was required to be evolved for meaningful work in an uncharted area. It was decided that a survey of manuscripts on the pattern of census survey would be held in order to unearth individual as well as institutional holders of manuscripts. Once a list of holdings was available it would be followed up with actual documentation of manuscripts data. The work of survey in States was initiated with the help of State Governments. The difficulty of this exercise can be imagined from the fact that it involves door to door survey. The only difference between the census and manuscripts survey being that in a census all available manpower and resources are deployed while in the case of manuscripts survey both of these are extremely limited.

5.1 The work of documentation of available manuscripts is a herculean task given the number of scripts as well as languages used in Indian manuscripts. These languages can be broadly classified as Indo-Aryan languages, Dravidian languages, Perso-Arabic languages and other lesser known languages like Tibetan, Tao, Chakma, Manipuri and host of others.

5.1.1 It would appropriate to mention here some of the major hurdles that the Mission needed to cross before it could effectively undertake this work. The manpower, resource for this task was extremely limited given the fact that till 2003 there were not many institutions imparting training in manuscriptology and palaeography. The Mission overcame these hurdles by imparting training in languages and scripts prevalent in different areas. The trained manpower was then deployed in the field for documentation work. At present the Mission has got a database of 3.5 million manuscripts. Of these, index of 2.2 million is available on Mission website www.namami.org

5.1.2 Over the past three years, besides expanding its data base, the Mission has actively involved itself in dissemination of knowledge content in manuscripts. This has been done through digitization of manuscripts as well as publication in book form. More than 10 million folios in 102 thousand manuscripts have already been digitized and work on a national digital manuscripts library is being initiated.

5.1.3 The publication section of the Mission undertakes publication of proceedings of seminars, collection of *Tattvabodha* lectures as well as unpublished manuscripts. Manuscripts are published in two series (i) *Prakashika* and (ii) *Kritibodha*. In the *Prakashika* series hitherto unpublished manuscripts are published in three formats i) with annotation, ii) with annotation and translation and iii) for rare manuscripts or those with extraordinary aesthetic beauty in facsimile form. In the *Kritibodha* series the outcome of advance level manuscriptology course in critical editing, are published. The following is a list of publications brought out by the Mission in different series:

i) <i>Prakashika</i>	9 volumes
ii) <i>Kritibodha</i>	3 volumes
iii) <i>Samrakshika</i>	2 volumes
iv) <i>Samikshika</i>	5 volumes
v) <i>Tattvabodha</i>	4 volumes
vi) Catalogues	3 numbers

It would be in order to mention here, that the Mission also publishes a bi-monthly Journal – *Kriti Rakshana*.

6. As can be seen from the above, the NMM in a short span of existence has tried to effectively address various issues related to manuscripts in India. It has prepared a conservation policy document on manuscripts which, when adopted by the Government of India, would provide a uniform policy across the country regarding manuscripts. The Mission has been striving hard to fulfill its mandate but given the enormity of the task it has still a long way to go.

Appendix

Manuscript Resource Centres

1. Oriental Research Institute, Sri Venkateswara University, Tirupati-517 502, Andhra Pradesh
2. A.P. Govt. Oriental Manuscripts Library and Research Institute, Jama-I-Osmania, Osmania University Campus, Hyderabad –500007, Andhra Pradesh
3. Gurucharan College, Silcher, Assam – 788 004
4. Krishna Kanta Handiqui Library, Guwahati University, Guwahati
5. Institute of Tai Studies and Research, Moranhat, Assam
6. Khuda Bakhsh Oriental Public Library, Ashok Rajpath, Patna – 800 004 Bihar
7. Kameswar Singh Darbanga Sanskrit University, Kameswar Nagaram, Darbhanga – 846 004 Bihar
8. Nava Nalanda Mahavihara, Nalanda – 803111 Bihar
9. Sri Dev Kumar Jain Oriental Research Institute, Devashram, Mahadeva Road, Arrah, Bihar – 802 301
10. Patna Museum, Vidyapati Marg, Patna, Bihar
11. Culture and Archaeology, Raipur, Chhatisgarh
12. Bhai Vir Singh Sahitya Sadanm, Bhai Vir Singh Marg, Gole Market, New Delhi-1
13. B.L. Institute of Indology, Vallab Smarak Complex, 20th KM, GTK Road, PO Alipur, Delhi-36
14. Lalbhai Dalpatbhai Institute of Indology, Navarangpur, Near Gujrat University, Ahmedabad -380 009, Gujarat
15. Shree Dwarakadhish Sanskrit Academy and Indological Research Institute, Dwaraka, Gujarat
16. Department of Sanskrit Pali and Prakrit, Kurukshetra University, Kurukshetra-136119
17. Himachal Academy of Arts, Culture and Languages, Culture and Languages Cliff- End Estate, Shimla- 171001
18. Library of Tibetan Works and Archives, Gangchen Kyisong, Dharamshala – 176215 Himachal Pradesh.
19. Directorate of State Archaeology, Archives & Museum, Stone Building, Old Secretariat, Srinagar – 190001, Jammu and Kashmir
20. Central Institute of Buddhist Studies, Choglamsar, Leh (Laddak)-194001
21. Oriental Research Institute, University of Mysore, Kautilya Circle, Mysore – 570005, Karnataka
22. Kannada University, Hampi, Vidyanarya – 583 276, Hospet Tq. Dt- Belary, Karnataka
23. National Institute of Prakrit Studies & Research, Shrutakevali Education Trust (Regd.), Shravanabelagola – 573 135, Karnataka
24. Keladi Museum & Historical Research, P.O. KELADI, Sagar Tq, - 577401, Simoga Dt. Karnataka
25. MahabharataSamshodhan Pratishtan, 1/E, 3rd Cross, Girinagar 1st Phase, Bangalore-560 085
26. Oriental Research Institute & Manuscripts Library, University of Kerala, Kariavattom, Thiruvananthapuram-695585, Kerala
27. Thunchan Memorial Trust, Thunchan Paramba, Tirur – 676101 Dt. – Mamlapuram, Kerala
28. D.G. Centre for Heritage Studies, Hill Palace, Thripunithura, Dist- Ernakulam, (Kerala)
29. Scindia Oriental Research Institute, Vikram University, Ujjain Madhya Pradesh
30. Dr. Harisingh Gour University, Gour Nagar, Sagar-470003, Madhya Pradesh
31. Kund-Kund Jnanapith, 584, M.G. Road, Tukoganj, Indore – 452 001
32. Bhandarkar Oriental Research Institute, Deccan Gymkhana, Pune-411 037

33. Kavikulaguru Kalidasa Sanskrit University, Baghla Bhawan, Sitalwadi, Manda Road, Ramtek – 441106
34. Anandashram Samstha, 22, Budhwar Peth, Pune – 411 002
35. Shree Sat Shrut Prabhavana Trust, 580, Juni Manekwadi, Bhavnagar-364001
36. Manipur State Archives, Washnglom Likoi, Imphal - 795 001, Manipur
37. Orissa State Museum, Museum Building, Bhubaneswar, Orissa
38. Sanskrit Academy of Research for Advanced Society, Through Vedic & Allied Tradition of India (SARASVATI), Sarasvati Vihar, Barpada, Bhadrak – 756 113 Orissa
39. French Institute of Pondichery, 11, Saint Louis Street, PB-33, Pondicherry-605001
40. ViswesvaranandaViswabandhu, Institute of Sanskrit & Indological Studies, Sadhu Ashram, Hoshiarpur-146021 Punjab
41. Rajasthan Oriental Research Institute, P.W.D. Road, Jodhpur – 342011 Rajasthan
42. Department of Archaeology, Tamil Valarchy Valagam, Halls Road, Egmore, Chennai- 600 008.
43. Department of Tamil Literature, University of Madras, Marina Campus, Chennai – 600 005.
44. Tanjore Maharaja Serfoji's, Saraswati Mahal Library, Thanjavur-613009 Tamil Nadu
45. Sri Chandrashekarendra Saraswati, Viswa Mahavidyalaya Deemed University, Enathur, Kanchipuram – 631561
46. Tripura University, Suryamani Nagar, Tripura West
47. Rampur Raza Library, Hamid Manzil, Rampur – 244 901 Uttar Pradesh.
48. Sampurnananda Sanskrit Visvavidyalaya, Varanasi 221001
49. Vrindavan Research Institute, Raman Reti Marg, Vrindavan-281121
50. Akhila Bharatiya Sanskrit Parishad, Mahatma Gandhi Marg, Hazratganj, Lucknow
51. Hastalekhagar evam Samgrahalaya, K.M. Hindi Institute of Hindi Studies and Linguistics, Dr. B.R. Ambedkar University, Paliwal Park, Agra
52. Mazahar Memorial Museum, Bahariabad, Ghazipur (UP)
53. Chaudharycharan Singh University, University Road, Meerut, Uttar Pradesh
54. Uttranchal Sanskrit Academy, Near Zila Panchayat Office, Haridwar -249401
55. Department of Sanskrit, HNB Garwal University, Pauri Garhwal, Uttranchal
56. Manuscript Library, Hardinge Building, 1st Floor, 87/1, College Street, Senate House, University of Calcutta, Kolkatta
57. Shivaji University, Kolhapur, Maharashtra
13. Lalbhai Dalpatbhai Institute of Indology, Navarangpur, Near Gujrat University, Ahmedabad -380 009, Gujarat
14. H.P.State Museum, Language & Culture, Kasumputy, Shimla
15. Department of Sanskrit Pali and Prakrit, Kurukshetra University, Kurukshetra-136119
16. Central Institute of Buddhist Studies, Choglamsar, Leh (Laddak)-194001
17. ICKPAC, INTACH Chitrakala Parishath Art Conservation Centre, Kumara Krupa Road, Bangalore-560 001.
18. Kannada University, Hampi, Vidyananya – 583 276, Hospet Tq. Dt- Belary, Karnataka
19. National Institute of Prakrit Studies & Research, Shrutakevali Education Trust (Regd.), Shravanabelagola – 573 135, Karnataka
20. Keladi Museum & Historical Research, P.O. KELADI, Sagar Tq, - 577401, Simoga Dt. Karnataka
21. Karnataka State Archives, Room No 9, Ground Floor, Vidhan Saudha, Bangalore – 1
22. Sri Vadiraja Research Fondation, Sri Puthige Matha, Car Street, Udupi
23. Mural Painting Conservation Research and Training Centre, Hill Palace Musuem Premises, Tripunithura, Ernakulam, Kerala
24. Thunchan Memorial Trust, Thunchan Paramba, Tirur – 676101 Dt. – Mamlapuram, Kerala
25. D.G, Centre for Heritage Studies, Hill Palace, Thripunithura, Dist- Ernakulam, (Kerala)
26. Regional Conservation Laboratory, Cotton Hill Road, Saothamangalam P.O. Thiruvananthapuram-695010
27. ORI, Manuscripts Library, University of Kerala, Kariavattom, Trivandrum, Kerala
28. Kund-Kund Jnanapith, 584, M.G. Road, Tukoganj, Indore – 452 001
29. Bhandarkar Oriental Research Institute, Deccan Gymkhana, Pune-411 037
30. Manipur State Archives, Washnglom Likoi, Imphal - 795 001, Manipur
31. INTACH ICI, Orissa Art Conservation Centre, Orissa State Museum Premises Bhubaneswar – Orissa-751 014
32. AITIHYA, Plot No. 4/330, 1st Floor, Raghunathpur, P.O. Sisupala Gada (Near Gangua Bridge, Puri Road), Bhubaneswar Orissa
33. Sambalpur University Library, Sambalpur University, Burla – 768001
34. Orissa State Museum, Museum Building, Bhubaneswar, Orissa
35. ViswesvaranandaViswabandhu, Institute of Sanskrit & Indological Studies, Sadhu Ashram, Hoshiarpur-146021 Punjab
36. Rajasthan Oriental Research Institute, P.W.D. Road, Jodhpur – 342011 Rajasthan
37. Digambar Jain Pandulipi Samrakshan Kendra Jain Vidya Samsthan, Digambar Jain Nasim Bhattarakji, Sawai Ramsing Road, Jaipur – 302004, Rajasthan
38. Aklank Shodh Sansthan, Aklank Vidyalya Association, Basnt Vihar, Kota
39. Tamilnadu Government Museum, Egmore, Chennai – 600008
40. Tanjore Maharaja Serfoji's, Saraswati Mahal Library, Thanjavur-613009 Tamil Nadu
41. Tripura University, Suryamani Nagar, Tripura West
42. Rampur Raza Library, Hamid Manzil, Rampur – 244 901 Uttar Pradesh
43. Nagarjuna Buddhist Foundation, 18, Andhiari Bagh, Gorakhpur – 273 001
44. Vrindavan Research Institute, Raman Reti Marg, Vrindavan-281121
45. Indian Council of Conservation Institutes, HIG- 44, Sector – E, Aliganj Scheme, Lucknow – 226024
46. Central Library, Banaras Hindu University, Varanasi
47. Mazahar Memorial Museum, Bahariabad, Ghazipur (UP)
48. Uttranchal Institute for Conservation Research and Training, Markandey House (near HMT Main Gate), Rani Bagh, District – Nainital – 263 126, Uttranchal.
49. Himalayan Society of Heritage & Art Conservation Centre, Nainital, Uttranchal
50. Manuscript Library, Hardinge Building, 1st Floor, 87/1, College Street, Senate House, University of Calcutta, Kolkatta

Manuscript Conservation Centres

1. OrientalResearchInstitute, SriVenkateswaraUniversity, Tirupati-517502, Andhra Pradesh
2. Salarjung Museum, Salarjung Marg, Hyderabad – 500002
3. AP State Archives and Research Institute, Tarnaka, Hydrabad-7
4. Tawang Monastery, House No.E-69(1), Fishery Office Road, Craft Centre, Tawang-790 104, Arunachal Pradesh
5. Gurucharan College, Silcher, Assam – 788 004
6. Krishna Kanta Handiqui Library, Guwahati University, Guwahati
7. Khuda Bakhsh Oriental Public Library, Ashok Rajpath, Patna – 800 004 Bihar
8. Sri Dev Kumar Jain Oriental Research Institute, Devashram, Mahadeva Road, Arrah, Bihar – 802 301
9. Patna Museum, Vidyapati Marg, Patna, Bihar
10. Culture and Archaeology, Raipur, Chhatisgarh
11. Indira Gandhi National Centre for the Arts, Janpath, New Delhi –10001
12. B.L Institute of Indology, Vallab Smarak Complex, 20th KM, GTK Road, PO Alipur, Delhi-36

Photographic Archives from the École Française d'Extrême-Orient

by Isabelle Poujol, In charge of the Photo Library and Communication, École Française d'Extrême-Orient, France

The École Française d'Extrême-Orient (the French School of Asian Studies, or EFEO; www.efeo.fr) was created in 1900 on the joint initiative of orientalist from the Academy of Inscriptions and Belles-Lettres and the colonial government, in what was then French Indochina. Its purpose was to encourage researchers to carry out field work in Asia – this was similar to what had been done in Athens, Rome and Cairo – and have them take charge of preserving the Indochinese cultural heritage. In 1902, school headquarters were established in Hanoi, and the school's main scientific missions were archeological exploration, collection of manuscripts, conservation of monuments, ethnography and the study of the linguistic heritage and history of all Asian civilizations. To provide support for this vast scientific undertaking, a library, a photo library and a museum (which later became the Vietnam National History Museum) were soon added. Other museums followed in Da Nang, Saigon, Huê, Phnom Penh, and Battambang. In 1907, EFEO was entrusted with the conservation of the Angkor archeological site.

Today, EFEO¹ continues to contribute to high-level research and the training of researchers in the social sciences as applied to the Indian subcontinent, Southeast Asia and East Asia (China, Japan, Korea). With a unique network of eighteen implantations, EFEO is present and active in twelve countries, from India to Japan. In these countries, teacher-researchers benefit from exceptional working conditions, which include direct access to local resources, close collaboration with specialized partners and a network to facilitate the exploration of pan-Asian topics. From the beginning, EFEO researchers completed their notes and sketches with photographs, which were organized into a photo library as the school developed. This library included pictures on glass plates which were taken during the first field missions – in spite of the difficulty of traveling through the jungle with extremely heavy and cumbersome photographic material – by the epigrapher (and first EFEO director) Louis Finot and the architect-archeologists Henri Parmentier and Henri Marchal, as well as by Charles Carpeaux.

Starting in 1933, EFEO called on the services of a professional photographer, Jean Manikus (formerly of the Indochina Films and Cinema Company). Assisted by Nguyen Huu Tho, he created a photographic service which operated from 1933 to 1959 and provided the basis for EFEO's large collection (see the article by Philippe Le Failler). After this period, the school used photographers only occasionally. Luc Ionesco (a writer for the monthly edition of *Réalités*), who was based at Siem Reap (Cambodia) from 1962 to 1966, made a complete photographic report of the temples of Angkor Wat and Bayon and of the museums of Phnom Penh and Battambang. He also carried out several missions in South India. From 1994 to 1996, Matthieu Ravaux (who was previously attached to the Guimet Museum) established an exhaustive photographic inventory of sculptures from the Angkor Conservation. The photo library

was thus built essentially from pictures made by researchers and from donations (for example, from Indologist Mireille Bénisti; from Jacques Bacot, one of the first to explore the Tibetan Marches in 1914; and from René Mercier, a graduate of the Boule School, who was head of EFEO fieldwork in Vietnam from 1934 to 1957). Due to political events, EFEO transferred its headquarters from Hanoi to Saigon in September 1954 (to the Blanchard de la Brosse Museum, which is currently the Vietnam History Museum of Ho Chi Minh City). During this time, a copy of the photography collection was sent to Paris, where the school was installed in 1961. The Paris photo library was thus created to take over from the one in Hanoi.

Currently, over 180,000 pictures are conserved at Paris headquarters and reflect the evolution of photographic techniques. Different supports include glass plates – most often stereoscopic – using the silver bromide gelatin process, negatives, slides, silver and color prints, and digital photographs. The different subjects illustrate the many EFEO disciplines, such as architecture, archeology, epigraphy, ethnography and art history. Because of the school's history and missions, Cambodia and Vietnam are particularly well illustrated, as is Laos to a somewhat lesser extent. The creation of new EFEO centers starting in the fifties (India, China, Indonesia, Thailand, etc.) increased and diversified the archives. From the moment she arrived at the EFEO center in Pondicherry, Françoise L'Hernault began to develop a collection of photographs of the temples in southern India and to organize a real photo library (see the article by Valérie Gillet). These photographs are of major scientific interest. In certain cases, they bear witness to a past which no longer exists (photographs 1, 2, 3). In others, they complete mission and excavation reports. It is thus possible, for example, to follow the restoration of the Cambodian temples over a sixty-year period. The campaign to digitize the collection which began in 2002 continues. Since 2006, work has been carried out by the *Régie Industrielle des Etablissements Pénitentiaires* (RIEP Poissy, the penitentiary industrial service). As part of a social reinsertion program, this service has developed a professional workshop for processing images. On the one hand, digitization ensures preservation of the photographs (because the originals no longer need to be manipulated and because digitized versions are archived for the long term); on the other, it facilitates distribution to the scientific community and the public at large. For the past few years, the photo library has fed the Webmuséo (A&A Partners) database, which provides a tool to assist research. In a first phase, the Cambodia, Vietnam, Laos and Thailand collections can be consulted using this database in the École libraries. The Webmuséo virtual photo library will gradually make these documented images available online.

For preventive conservation of the collections, the original documents are archived in an appropriate setting which is protected from daylight and is air conditioned and hygrometrically controlled. All digitized photos are reconditioned on neutral supports (paper/cardboard, polypropylene). Digitization of photographic documents is done without modifications (raw

1. EFEO is an establishment under the French Ministry of Higher Education and Research.

scan) in an uncompressed, high-definition format. Archiving is done on an internal server and is backed up by a set of external hard drives (in addition, the Webmuséo database and associated images are archived by A&A Partners on a dedicated external server). Since March 2011, EFEO has implemented long-term archiving at the *Centre Informatique National de l'Enseignement Supérieur* (CINES, the French national information technology center for higher education). Photographs are sent in batches and archived after a procedure which checks the digital integrity of the files. CINES engineers keep abreast technologically of the obsolescence of standards and formats and will be able to ensure, if necessary, their transfer to new supports. Approximately 20,000 photographs have now been deposited at CINES.

The photographic archives are an exceptional EFEO heritage and are an indispensable historical source for current research, as demonstrated by numerous requests for consultation. They are also a living collection which continues to grow through the work of teacher-researchers. Along with glass plate pictures from the early twentieth century, the collection now features LIDAR (Light Detection and Ranging) images made using airborne laser technology, which has recently produced spectacular results in the archeological domain.



1. The Nam Giao sacrifice, a ceremony of allegiance to Sky and Earth, made by the Emperor of Annam, His Majesty Bao Ðai, in 1939; Vietnam collection (Reference: EFEO_VIE06954).

The Pondicherry Photo Libraries

by Valérie Gillet,

In charge of the EFEO Center of Pondicherry, India

P.Z. Pattabiramin (1906-1971), who began his career as an interpreter for the famous archeologist G. Jouveau-Dubreuil, created the first collection of photographs from South India. Through Jouveau-Dubreuil, he developed an ardent interest in archeology and the ancient culture of India. He participated in numerous missions at different sites and, even after the death of his mentor in 1945, Pattabiramin continued to collect a wealth of archeological documents. Starting as a civil servant at the Pondicherry library from 1949 to 1955, he later entered the French Institute of Pondicherry (IFP) in 1956, where he devoted

2. Cham A1 temple at the My Son site; Vietnam collection (Reference: EFEO-VIE00457).



3. Statue of Siva and Uma from the Banteay Srei temple, conserved at the Phnom Penh Museum. The head of the goddess Uma was stolen in the seventies; Cambodian collection (Reference: EFEO_CAM3165_3).



himself fully to his passion for archeology. In 1965, he became a member of EFEO and continued to put together an important set of archeological photographs. When he died in 1971, Pattabiramin bequeathed a collection of nearly 70,000 pictures; these images comprise the basic core of the EFEO/IFP photo library in Pondicherry.

Starting in 1971, Françoise L'Hernault (1937-1999), an art historian and member of EFEO, became the scientific director of this photo library. She methodically divided the Tamil territory into squares, established lists of sites which were worth visiting, and went into the field with her team composed of IFP and EFEO personnel (drivers, photographers, assistants, draftsmen). Field missions lasted from three to seven days. The team was always equipped with a large amount of material (ladders, scaffolding, light reflectors, lights, electrical generator, etc.) to

mitigate conditions which were sometimes difficult, such as the height of objects to be photographed or a lack of light, space or electricity. On January 31, 1999, Françoise L'Hernault, died after having contracted a serious infection. At that time, the EFEO/IFP photo library at Pondicherry counted over 136,000 pictures, but the joint adventure of EFEO and IFP had come to an end.

This collection, which essentially contains images of temples, bronzes and inscriptions, is currently conserved at the French Institute of Pondicherry and is being digitized. The careless renovation of a great number of temples, on the one hand, and natural erosion, on the other, make this collection especially precious. It is one of the last remaining traces of a past which is disappearing very quickly. The two institutions have discussed the possibility of putting these documented images online on a shared portal. In addition to these pictures, which have a dual EFEO/IFP copyright, Françoise L'Hernault's personal collection of photographs was donated to the EFEO Center of Pondicherry. It contains 351 rolls of film, or approximately 12,000 negatives, which are also being digitized.

The EFEO Center of Pondicherry also has a collection of 1,940 temple, palace and city layouts and drawings. Digitizing them is often a delicate operation because of the size of certain documents, which can measure up to two meters on a side.

Although the death of Françoise L'Hernault ended the development of a joint EFEO/IFP photo library, the institutions continue to build separate collections of images from projects and research work. As concerns EFEO, Charlotte Schmid, who is a member of EFEO and who was assigned to Pondicherry in 1999, is putting together a large amount of photographic documentation on the first temples of the Cōla era (tenth century). Valérie Gillet, who has been a member of EFEO since 2007 and who studies the temples of the Pallava epoch and Pāndya at Tamil Nadu (sixth to tenth centuries), is putting digitized images gathered during numerous field missions into a collection named "SITA" (South Indian Temple Archives). This collection, which continues to grow, is currently being documented on Webmuséo and will very soon be available for online consultation. A section of the SITA collection will be dedicated entirely to epigraphy and documented in collaboration with Emmanuel Francis (CNRS).

EFEO Photo Libraries in Vietnam

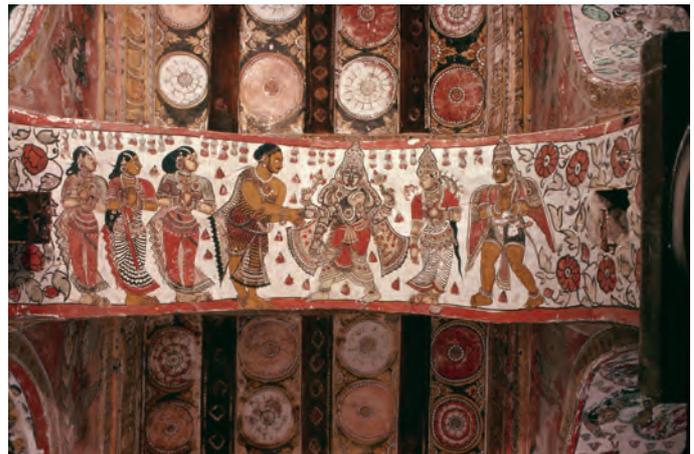
by Philippe Le Failler, Senior Lecturer, EFEO

Composed of contributions from researchers and donations by travelers, hobbyists and governmental agents, the EFEO photographic collection reveals a Vietnam which differs in many ways from customary stereotypes and affirms the utilitarian vocation of film. These are shots of an informative or scientific nature which focus on selected subjects. Images of monuments, archeological diggings, religious rites, museum pieces, architectural elements, document reproductions and aerial views predominate. In the ethnographical area, we observe the presence of certain anthropological portraits taken from the front and side. They are what remains of an attempt to establish a typology of human races.

From the early years of EFEO, archeologists and ethnologists were the most ardent defenders of this new tool (as were ge-



4. Mukhalinga in the Tōkaippāti temple (Villuppuram district), discovered in April 2013; SITA collection (photo : Valérie Gillet).



5. Wall painting from the Rāmanāthapuram palace (Tamil Nadu); Françoise L'Hernault collection, EFEO_LHEF00296.

ographers and geologists, but for different reasons), because of their young and technical disciplines requiring intensive contact with the field and subject to uncertainty. Snapshots enabled capturing an ephemeral scene and filling in details which might not have been noted at first. Duplicates allowed spending time on collateral issues, having another look at certain details, comparing points or providing proof.

First adopted on personal initiative, photography made descriptive work easier or more precise. Louis Finot and Henri Parmentier used it extensively. The latter made a photographic inventory of the Tourane Museum (Đà Nang), and they both bequeathed part of their photos to the institution. In the twenties, EFEO was known for the systematic use of aerial photographs, for archeology of course – as in the case of Jean-Yves Claeys and Bernard Philippe Groslier – but not exclusively. Aerial views and their analysis made the work of geographer Pierre Gourou especially useful.

To answer a recurrent need, the school directors decided to organize an iconographical collection and institutionalize the practice; this occurred in 1933 when Jean Manikus was hired as a photographer. Three years later, he was named to head a service based in Hanoi, where he worked with Nguyen Huu Tho until 1959. In Hanoi, there was strong activity tied to the production of prints. Only part of them were glued onto a cardboard backing and archived, since many of them corresponded to orders from other government services or even from private individuals. As the day of departure approached, activity intensified. For the year 1954 alone, 4,796 enlargements mounted on cards and six kilometers of microfilms were processed. The goal was to supply the EFEO center in Saigon with copies of ancient documents and of the items sent to Paris (1,071 meters worth of microfilms).

What remains of these collections varies in quality and in quantity. The images which were transferred to Paris were well conserved, and this was reinforced by contemporary technical improvements and recent digitization. However, the Vietnam collection represents only a fraction of photo library documents, barely 8,000 of the 180,000 items inventoried. As a general rule, the snapshots taken with natural light in northern Vietnam suffer from insufficient contrast. The large amount of humidity in this part of the country leads to the formation of milky clouds and the air lacks transparency, resulting in diffuse lighting and the inability to obtain proper depth of field. Then as now, it is necessary to call upon special skills to correct these defects and obtain views with an acutance worthy of the subject being photographed. For this reason, the sharpest and most well-composed images are the ones made by the school photographer or by other professionals.

These photographs need to be classified according to their origin, which is a task as vast as it is difficult. This is because the EFEO collections contain a substantial number of shots obtained from exchanges with other government services, such as Military Aeronautics of Indochina and the Economic Agency. Some have been signed or can be identified, but most of them cannot. In addition, all services, including EFEO, were supplied with all sorts of publications and albums from the General Agency of Indochina (which succeeded the Indochina Agency

founded in 1903 by Governor General Paul Beau), a representative body located on Rue de la Boétie in Paris. It was in charge of propaganda in France, which explains the broad distribution of certain images. This is why we find many photos which are analogous to those conserved at EFEO Paris or left behind in Vietnam at the National Overseas Archives in Aix-en-Provence or the National Library.

The photographs conserved in Hanoi (around 70,000), which generally date from the twenties to the forties, can be consulted, but their quality has suffered considerably. The curators of the Institute of Information in Social Sciences located at 26 Lý Thuong Kiet Street, who inherited the collections of the former EFEO library, continued to work for forty years under technological conditions which were similar to those found in 1954 because they were limited to using the photographic material and laboratory devices for microfilming which had been left behind in Hanoi. During times of war and scarcity, the Vietnamese used the means at their disposal, and only in the past twelve years have procedures been implemented to ensure an acceptable degree of hygrometry. However, the damage had already been done: although the collections are complete, the prints have suffered greatly and the negatives and glass plates are unusable.

In the EFEO collections, it is rather common to find complementary views of certain subjects which were used for articles (whether illustrated or not). Like film rushes, they can now be usefully re-examined within the inherent limits of this type of approach. However, because of the heterogeneous origins of the photos or due to a certain amount of negligence, the notes accompanying them vary greatly in quality and are not always dated or are incorrect. Certain information is missing, making some images practically useless. Contrary to what Roland Barthes wrote, the image alone is not enough. In the scientific domain, a caption is indispensable, and the photograph must be perfectly identified. It is considered as an archive and complements notes made in the field or laboratory. Looking at these photographs nearly a century later allows (re)interpretations and (re)discoveries which facilitate new research perspectives and enable appreciating how our perception of Vietnam has changed.



6. Bonze in front of the Bút Tháp pagoda (Bac Ninh province) in the forties; Vietnam collection (reference: EFEO_VIE06069-bis).



7. Steles of the doctors at the Temple of Literature in Hanoi (Van Mieu) before 1930; Louis Finot collection, (reference: EFEO_FIN01324).

When Script Engravings Establish a New Spatial Dimension in a Monument: The Tomb of Manchu Emperor Qianlong (18th century)

by **Françoise Wang**, CNRS (Centre National de la Recherche Scientifique/National Center for Scientific Research) UMR 8155- CRCAO, and **Livio De Luca**, CNRS UMR3495-MAP

The significant patronage of Tibetan Buddhism by the first Emperors of the Manchu Qing dynasty (1644-1911) has been noticed for a long time. The erection of temples and chapels dedicated to this cult in Peking and in the surrounding area was one of the most impressive evidence of this process. This patronage was especially important under Qianlong (r. 1736-1795), the 4th Emperor to come to the throne and the one who gave the Manchu Empire its greatest extension.

This support is usually explained as being the result of a purely political strategy aiming at controlling the Mongol population who venerated Tibetan Buddhism. Qianlong is actually generally thought as being totally sinicized. He was a fine connoisseur of Taoist aesthetic and was greatly learned in Confucian thought. During his reign, Chinese art and culture significantly developed. Faced with Chinese literati who considered the Manchu as pure barbarians, he supervised great encyclopaedic works of Chinese knowledge that are still reference works. He also based his government on Imperial Confucian principles that had been developed by previous Chinese dynasties.

Yet, as this has been emphasized by recent studies, the personality of Qianlong is in fact much more complex. His Manchu identity cannot be put aside and his interest for Tibetan Buddhism should be recognized as personal and sincere. The study of his tomb provides a great deal of evidence to support these ideas.

Qianlong's mausoleum was built 120 km North-East of Peking in the Eastern Tombs of Qing Dynasty (*Qing dongling*), a place that had been chosen in 1661 to erect the Imperial tombs of the new Manchu dynasty. The construction of Qianlong's tomb began in 1743, 8th year of his reign. It lasted for nine years.

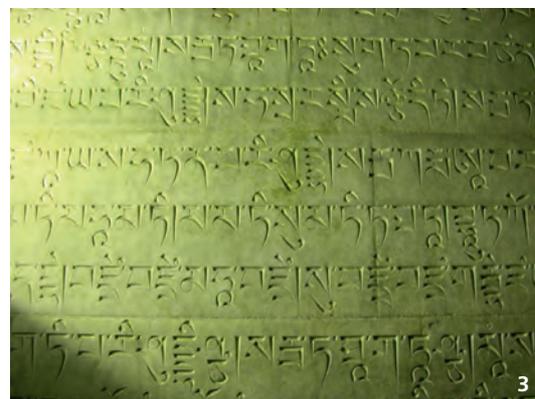
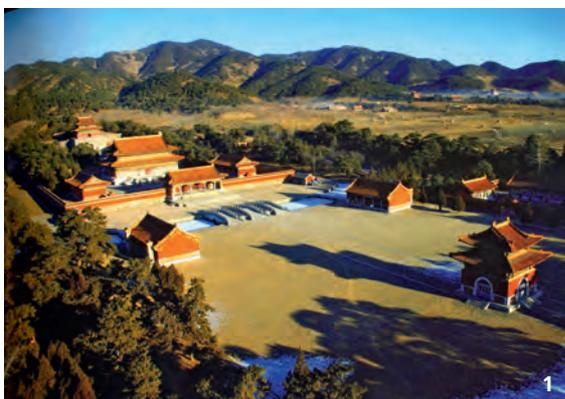
The mausoleum is made up of several buildings (image 1). We focused our research on what is traditionally called in Chinese "the Underground Palace" (*digong*) and which we will call here

the tomb. Located 54 m underground, it has a surface of 372 sq. meters. Its architecture is in accordance with the traditional architecture of Chinese Imperial tombs. But it stands out because of its ornaments. The walls, the doors and the vaults are covered by Buddhist representations and inscriptions (images 2 and 3).

Despite the classification in 2000 of all the Qing Eastern tombs by UNESCO as World Heritage Area, only limited research had been conducted on Qianlong's tomb decoration. Yet, among all the opened Imperial tombs, it is the only one which has so many ornaments. Chinese researchers are mainly interested in how plunderers could enter the tomb in 1928 or in the personality of the people buried with Qianlong. Some of the Buddhist representations have been identified, but the inscriptions remained a mystery.

The total absence of inscriptions in Chinese or Manchu was really surprising given the fact that Qianlong was a Manchu Emperor considered completely sinicized. The engraved scripts are in Tibetan (29 464 letters) and in Lantsa (647 letters), a script used in Tibet and in Mongolia to write Sanskrit. In both cases the calligraphy is extremely fine and of high quality. Tibetan inscriptions are also engraved on the sides of coffins. Dynastic annals only give very little information about this ornamental program.

At the invitation of the local authorities, French researchers began their work in the tomb in 2005. After the identification of each and every Buddhist representation, all the inscriptions were written down and then entered in a computer. It was the first level of safeguarding, and it was urgently needed because recurrent water leaks in the vaults are forming many limestone deposits that erode the inscriptions on the vaults and on the walls. Besides, the high humidity has resulted in the deterioration of the coffins, which seriously crumble. Today, parts of the inscriptions that were written down in 2005 are not legible anymore.



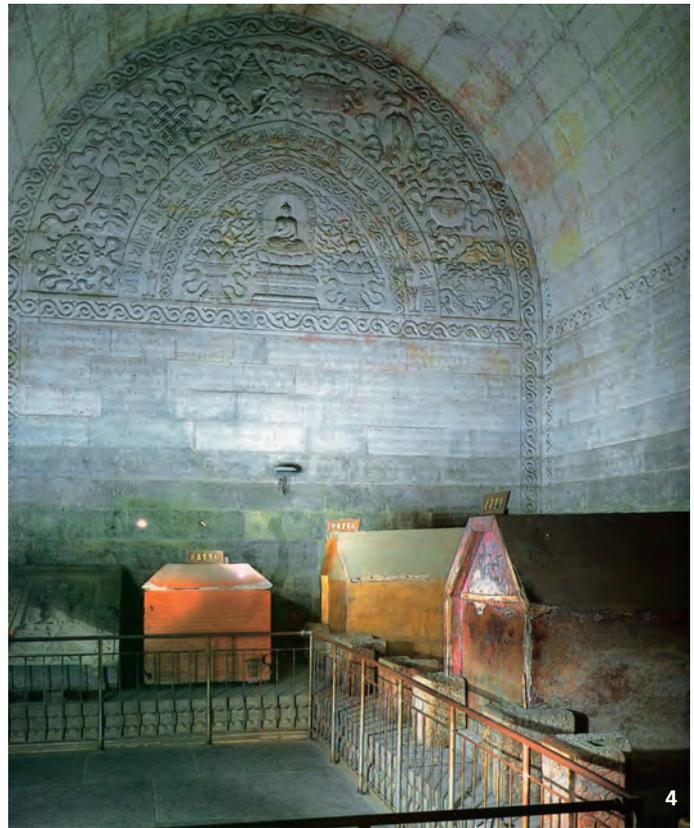
This first edition was the first step but it was not enough. To really protect these extraordinary ornaments, we had to identify all its components and determine the guiding ideas that were behind their design.

We do not have any efficient computer tools to do advanced research in the whole of the Tibetan Buddhist Canon. It was by reading hundreds and hundreds of folios that the identification of all the inscriptions was achieved. All those engraved on the walls and the vaults are only *dharani*, that is, sacred formula, while those found on the coffins also contain prayers.

Almost 150 *dharani* were chosen to accompany the Emperor in his tomb. Some are very long, other are extremely short. Some of them appear several times. Translating these *dharani* was not very useful, since the efficiency of these formulas stands more in their sound than in their meaning. That is the reason why in non-Indian languages these *dharani* are not translated but transcribed. We were more interested in the reasons that had governed the choice of these texts. The analysis of their functions actually demonstrated that there existed unifying threads in the elaboration of this ornamental program. It also became obvious that the inscriptions of each wall and each vault were independent: no *dharani* begins on one wall to finish on another wall. This extremely organized page make-up or “wall make-up” could only result from rigorous calculation and deep reflection. The presence of special *dharani* acting as a kind of “end-of-text markers” at the end of each group of inscriptions reveals that there was a will to precisely segment space.

It is obvious that this whole set of ornaments contributes to the creation of a sacred space. The first funerary chamber plays an important role in this process. Protective divinities are engraved on the walls among several texts well known for their apotropaic function. Acting like a kind of protective airlock, this room marks the entry to the sacred space. Besides, several *dharani* particularly linked with consecration rituals are engraved in strategic places such as vaults, lintels, etc. The identification of the inscriptions also enabled us to distinguish other groups of *dharani*. Those that purify bad deeds and those that lead to good rebirth – two categories closely associated with Buddhist funerary rituals – occur with an extremely high frequency inside the first funerary chambers. This first discovery enabled us to consider the idea that through these inscriptions, a Buddhist funerary ritual was permeating the whole monument, unfolding along the walls and the vaults for eternity for the benefit of the deceased.

The study of the inscriptions of the last funerary chamber where all the Imperial coffins are kept enabled us to make a second important discovery (image 4). The choice and layout of the *dharani* on each wall and on the vault of this room correspond to the rules that govern the deposit of relic texts inside Tibetan *stupa* during consecration ceremonies. The deposit of important relics that may consist of texts is a practice that is common to all the Buddhist traditions. Yet, a particularity of Tibetan Buddhism is that the deposit of relics consisting of texts is done in an extremely hierarchical way. Specific texts are associated with each of the architectural parts of a *stupa*. We thus developed the idea that the layout of the texts in the last funerary chamber enabled the virtual creation of a *stupa* – the Buddhist funer-



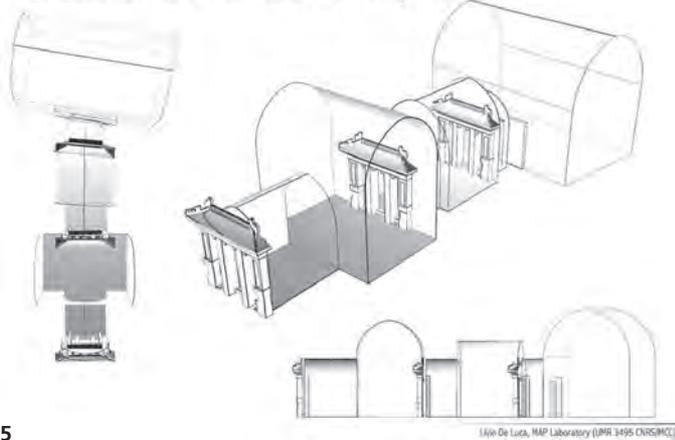
ary monument par excellence. We have to emphasize here the fact that the practice of hierarchical deposit of texts is unknown to Chinese Buddhism. In China, *stupa* are not built and consecrated in the same way that they are in Indo-Tibetan tradition. That is the reason why the hypothesis of a virtual *stupa* inside Qianlong’s tomb can only be valid in a Tibetan context. In a Chinese context, this hypothesis would be totally groundless.

In order to establish the validity of this hypothesis, the ANR SINETOMB (*Système d’informations numériques de l’emploi des textes dans l’ornementation des monuments bouddhiques*) project was elaborated in 2008. It brings together two CNRS laboratories, the Research Center on the Civilizations of Eastern Asia (CRCAO) and the Research Center on Models and Simulation for Architecture and Heritage (MAP). It combines three complementary scientific concerns: (1) improving the knowledge of Qianlong, (2) a new approach of the conception of *stupa*, (3) the design and development of systems of representations that are true tools of investigation and scientific visualization.

Our aim was to use a “3D special design” of both inscriptions and iconographic elements of the ornaments of the tomb in order to reveal the sacred space where funerary rituals and a virtual *stupa* appeared. We initially focused on the process of shaping a virtual *stupa* through the particular layout of the texts.

The construction of this system is based on the linking of the graphical and informatics representation of two parallel levels of description. On the one hand, the description of the morphology of the tomb through the spatial structure of geometric entities in a 3D model (collection of architectural shapes and spatial relationships), on the other, the description of knowledge associated with the Tibetan funerary rituals (abstract con-

3D reconstruction of the Tomb | Surfaces generation

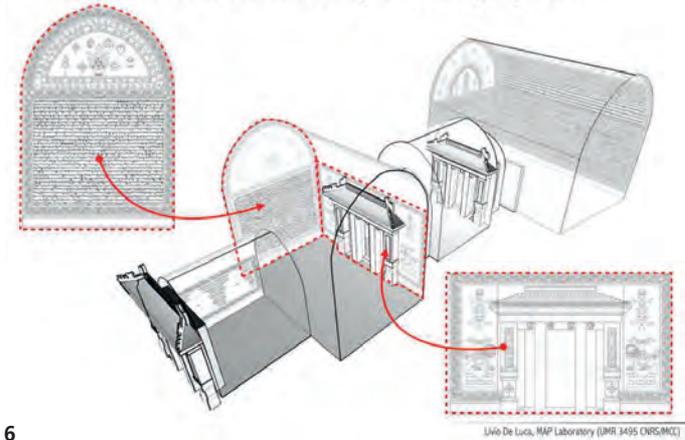


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Lluis De Luca, MAP Laboratory (UMR 3495 CNRS/MC)

cepts and semantic relationships). Due to the morphological complexity of these spaces and to the quantity and density of decors and inscriptions, the study of the tomb required the definition and implementation of a specific method of documentation based on several graphics processing techniques. Starting from the point cloud obtained by multi-view stereo photogrammetry, the first phase consists of extracting relevant profiles that describe the geometric entities composing the main spaces and its architectural elements (images 5 and 6). A set of basic morphological entities then served as geometrical support for the processing of high definition orthographic images for the analysis of the inscriptions (image 7). The two-dimensional reproduction of these elements, based on a very thorough inspection of surfaces, was based on a strategy of structuring information in different reading levels (image 8). More than 31 000 characters (Tibetan and lantsa) were restituted basing on a rigorous segmentation and annotation process aiming to isolate fragments of inscriptions (linkable to *dharani*) and symbolic decorative motifs. In order to establish bilateral interlinkages among the morphological and the conceptual description of the space, a method for the semantic characterization of the digital representation of the tomb has been developed (image 9). It is based on three parallel dimensions.

3D reconstruction of the Tomb | Image To Geometry projection



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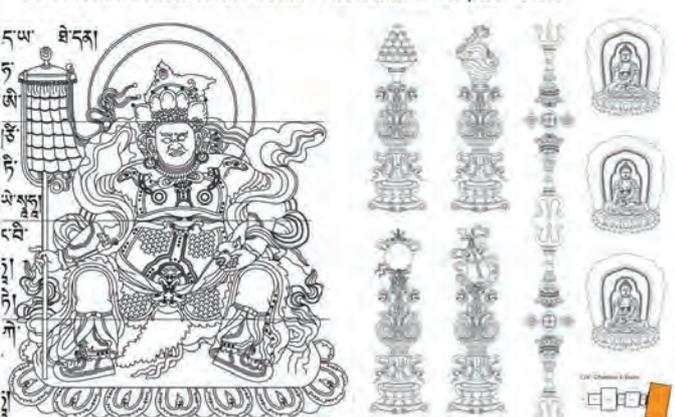
Lluis De Luca, MAP Laboratory (UMR 3495 CNRS/MC)

First, the three-dimensional reconstruction of architectural elements and decorations through the development of projective spatial relationship between three-dimensional elements and two-dimensional media.

Then, the semantic characterization of the isolated morphological elements through the annotation of surface's segments (inscriptions and decorative motifs) (image 10).

Finally, the representation of knowledge about Tibetan funerary rituals through the formalization of the conceptual relationships between *dharani* (inscriptions) and deities (decors). Thanks to the informatics implementation, the graphical and textual data formalized and represented become accessible within an analytical support (information system) allowing to explore the relationship between the morphological and the conceptual description of the tomb by the means of three interactive and interconnected devices: a 3D scene allowing the exploration of the physical space, a dynamic graph allowing the navigation within a network of interconnected concepts, a dynamic image displaying the theoretical position of the selected entities (inscriptions and decors) and the related concepts, within a "virtual stupa". Real working tool for researchers, this system allows to explore the physical and conceptual space in parallel:

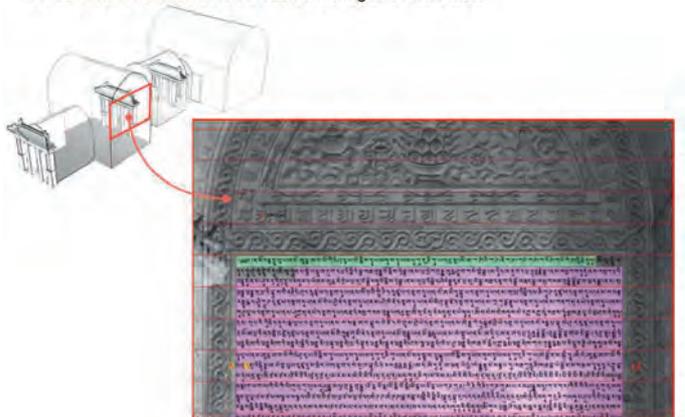
3D reconstruction of the Tomb | Restitution of sculpted decors



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3D reconstruction of the Tomb | Images rectification



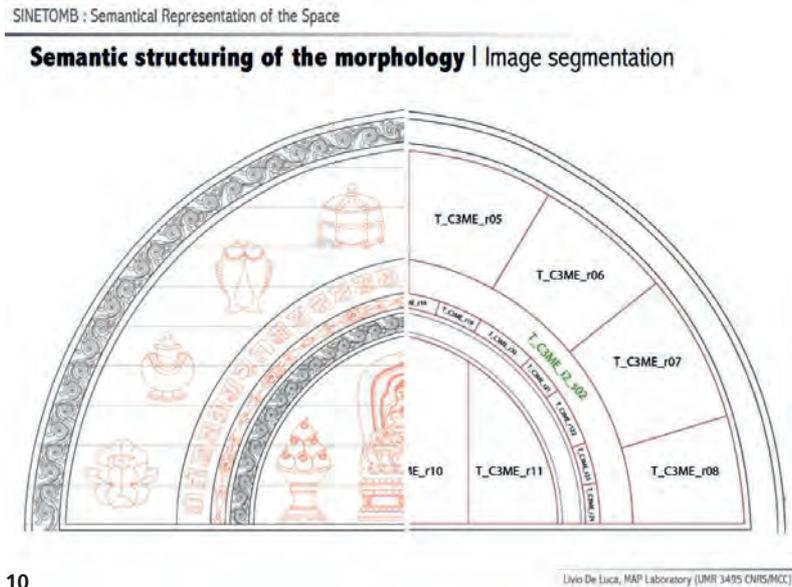
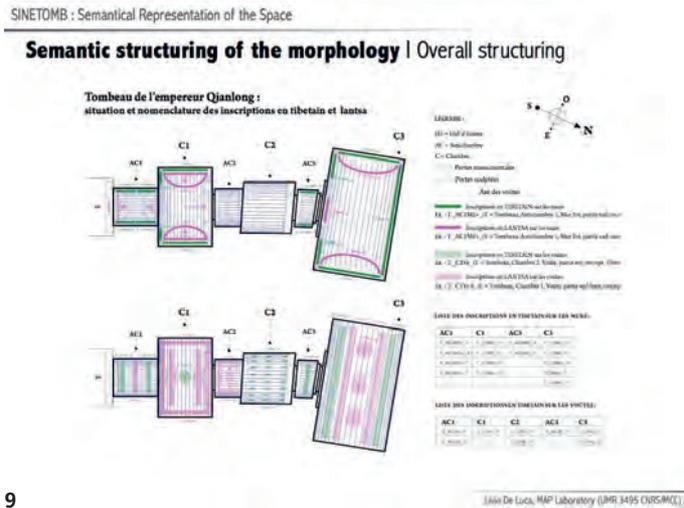
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the selection of a entity in the 3D scene (physical space) gives access to the position of the selected element in the dynamic graph of concepts (conceptual space) and vice-versa. This system, developed as a web application, allows users to explore and analyze the conditions and extreme sophistication of the use of writing in the tomb of Qianlong. Future implementations will allow to better analyse this data and compare them with those found in other buildings or objects used in a funerary context.

Although it is certain that Qianlong sometimes used Tibetan Buddhism for political purposes, his interest for this religious tradition was also sincere and personal. Actually if Qianlong worked out such a complicated set of ornaments in his tomb,

it was not to make a showcase that would be shown to the Mongol populations. It was most probably conceived in order to express his own innermost beliefs and may show his will to be buried in a stupa as the universal monarch of the Buddhist tradition would be. Being the Emperor of a vast Empire where Confucian values were predominant prevented Qianlong from building a tomb on the model of a *stupa*. But by engraving script he could shape a virtual *stupa* inside a traditional Chinese tomb. The use of innovative methods as regards 3D space design and the elaboration of an ontology not only enabled us to show this absolutely unparalleled architectural process, but also trigger a new reflection on the definition of a *stupa*. Lastly, given the alarming state of conservation of Qianlong's tomb, this study is of capital importance as a memory of the monument.



Conservation of the Library of Congress' Gandhara Scroll: A Collaborative Process¹

by Holly H. Krueger², Senior Paper Conservator, Library of Congress, USA

Abstract

Buddhism is one of the world's major religions and can trace its origins to 450 BC when its founder, Guatama Buddha, attained enlightenment under the Bodhi tree. Buddhism spread from India, northward, into the Peshawar Valley (present day Northern Pakistan and Afghanistan). The region, Gandhara, stood as a thriving center for Buddhism before spreading eastward along the Silk Roads. Until recently, no original manuscripts had been found documenting the development of the Gandharan doctrine of Buddhism. A group of materials dating from the first century BC to the second century BCE were unearthed in the 1990s, and the Library of Congress acquired a birch-bark scroll from this collection. It fell to the Library's Conservation Division to unroll, document, and devise a long-term preservation strategy for this most fragile and ancient object. To accomplish this task, conservators relied upon myriad colleagues and expertise, both inside and outside of its own walls.

Background

In 2005, the Library purchased a scroll purported to contain the oldest writing related to Buddhism. The scroll arrived inside a familiar Parker Pen box, lying on a bed of cotton and was obviously a most fragile object (fig 1). The Gandhara Scroll, as it has come to be called, belongs by genre to a group of materials that were unearthed in the 1990s and are now in the British Library. These thirty scrolls and fragments are the earliest Buddhist texts found to date. They are written in carbon ink on birch bark strips in the Gandharan language in Kharoshti script. They were ritualistically interred in terra cotta jars and buried inside of *stupas*. *Stupas* are Buddhist religious structures constructed to hold reliquaries and are the principal architectural and religious elements of the monastic community. Because Kharoshti script died out in the third century BCE, there are only a handful of scholars in the world who can read it today. Until recently, they had to content themselves with inscriptions on coins, statues, and architectural elements. Gandhara is the ancient name for the Peshawar valley in Northern Pakistan and Afghanistan. Although currently this region is tumultuous, between the third century BC and the sixth century BCE it stood as a flourishing seat of civilization, strategically located on the Silk Roads and a thriving center for Buddhism. Its geographic location as a gateway to the Indian subcontinent, and oasis cities of the silk roads in the Tarin Basin, in part explains the

1. Article first published in the *Book and Paper Group Annual*, 2008. Edited once a year by the Book and Paper Group (BPG), a specialty group of the Institute for Conservation of Historic and Artistic Works (AIC). Available on line at: <http://cool.conservation-us.org/coolaic/sg/bpg/annual/>

2. Contact: hkrue@loc.gov

wide-ranging influences on the Gandharan culture in ancient times as a crossroads and melting pot. Most of us are familiar with Gandharan art and its melding of Indian and Greek motifs. Buddhism was brought to the Gandharan region by Asoka, the great emperor of the Mauryan dynasty in India and Buddhist patron in the third century BC. By the first and second centuries BCE, Buddhism began to extend into Iran and China with Gandharan monks instrumental in this expansion. Thus, it can be argued that the Gandharan form of Buddhism was particularly influential in the cultural history of Asia due to its strategic location in geography and time.

Abundant physical evidence of a flourishing Buddhist center can be found in the Gandharan region by the first century BC, in dedicatory inscriptions, sculptures, and coinage. The textual content of Gandharan Buddhist doctrine, however, remained obscure, as no primary texts from this early period had been found-although it was theorized that there must have a rich written tradition. Original manuscripts obviously provide the best source, but since early manuscripts were written on birch bark or palm leaves, neither of which is a stable material, few manuscripts earlier than the seventh century BCE had been found in the Indian subcontinent. The dry climate found along much of the Silk Road is much more conducive to preservation and many early Buddhist manuscripts from the seventh century BCE or later were found and "transferred" to Western cultural institutions by Aurel Stein, et al. The rush to explore long-lost cities along the Silk Road yielded unprecedented, rich discoveries of the thriving civilizations in these now desert climes and further evidence of the Gandharan's region key position in later Buddhist development. The discovery in the early 1990s of the first and second century BCE scrolls in excavated *stupas* led to a relative explosion in available textual information related to this early period. Akin to the Nag Hammadi and Dead Sea Scrolls, the Kharoshti scrolls are the earliest known textual material related to Buddhism. Carbon 14 results place most of the material from the first century BCE although the Library's scroll was dated a bit earlier. Most unfortunately, the region these manuscripts are in is highly unstable. Rory Stewart writes in *The Places In Between*, an account of his epic walk across Afghanistan just after the Taliban fell, of the most amateurish collecting and plundering of ancient sites by villagers. The sad fact that no official excavations are being carried out will obviously result in the loss of more original material, making the rarity of the few manuscripts that do survive even more compelling.

Description

Birch bark has a long history of use other than as a writing substrate. Its oils provide protection against biological attack and the bark possesses medicinal qualities as an analgesic. Ad-



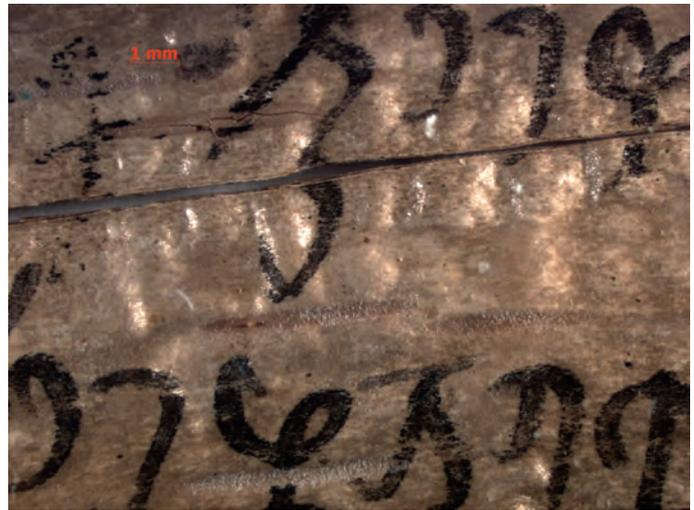
1. Gandhara Scroll in its original housing.

ditionally, birch bark has been used as a building and artifactual material in many cultures since ancient times. Birch is a common and prolific tree, growing abundantly in most temperate zones across the world. The Gandhara Scroll is most likely from Himalayan birch, common to the high altitudes of the area.

Birch bark is one of the three main writing materials of the ancients, along with palm leaf and papyrus. Q. Curtius's *History of Alexander* notes the use of tree bark as a writing material at the time of Alexander's invasion of India in 300 BC. Pliny also mentions "the bark of certain trees" being used as a writing material before papyrus in his *Natural History*. The bark is prepared for writing by making two circular incisions around the trunk several feet apart and wedging the bark away from the vascular cambium. The surface is then oiled and polished to produce an appropriate writing surface. Finally, the sheet is cut to size and stored flat between wooden boards. Strips of birch bark were sometimes sewn together to create larger sheets.

Birch bark is composed of several very thin layers, adhered to one another by pectin, a natural adhesive, as well as by physical knots and streaks. The outer tissues are cork cells, or phellem, composed of suberin, an unsaturated fatty acid that accounts for the cell wall impermeability to water. The cells are laid longitudinally, structurally held together with lenticels, spongy areas of cells arranged horizontally that allow for gas exchanges between the inner and outer tissues. The fatty acids between the cell walls, as well as those applied during processing, may naturally exude, creating a whitish material on the surface (fig. 2). This aging process, as well as the lessening of the adhesive strength of the natural pectin, serves to undermine the adhesion between the layers. This is the main conservation problem encountered with manuscripts on birch bark. To find a two thousand-year old sample is truly remarkable given this inherent instability. The scroll's ritualistic internment into a terra cotta jar and placement into a *stupa* undoubtedly accounts for its survival at all.

Published work on the challenges and possible preservation solutions applied to birch bark substrates reflects myriad approaches and materials. Various lacquers and waxes have been employed as consolidants with limited success. A group of birch bark scrolls from Bamiyan brought to the Musée Guimet in Paris was immersed in hot paraffin wax to allow unrolling and consolidation. Research done by O. P. Agrawal and D.G.



2. Photomicrograph showing white exuded material.

Suryawanashi at the National Research Library in Lucknow, India revealed that while the natural oils in birch bark make it relatively impervious to water, it is highly soluble in some organic solvents. Dr. Agrawal details a successful treatment similar to paper splitting wherein individual layers of the bark are separated and pasted back together with a new interleaving Japanese paper. Obviously this is only possible with the most robust of manuscripts.

Various encapsulation methods have been reported, from pasting silk gauze to either side of a manuscript to lamination with cellulose acetate. The Bodleian Library reported on the preservation of the Bakhshali Manuscript by encapsulation between mica sheets and hinging the resultant package onto card stock. The successful conservation of the Gilgit Collection of two thousand birch bark sheets in the National Archives of India using a modified "silking" was reported in 1957. Mylar encapsulation had been recently recommended but would be highly problematic with delaminating, fragile material such as our scroll due to its lack of rigidity and its static charge. Encapsulation between sheets of glass has been the "gold standard" of preservation of ancient manuscripts but there are serious drawbacks with this approach as well. Although lacking the static charge of Mylar, sheets of glass are heavy, presenting difficult handling and storage issues. Additionally, some glass is inherently chemically unstable.

In considering how best to conserve the Gandhara Scroll we had to take into account two main points. The first was the scholarly world's understandable impatience to have the scroll unrolled and the information it contained preserved and disseminated, particularly cognizant of the unstable political situation. The second was in reconciling the various treatment options with the physical realities of such a fragile and ancient object. The Library's scroll continues to suffer loss in even the most benign of circumstances. During our initial examination under the microscope a crack was observed spontaneously forming. This early experience undoubtedly shaped our eventual approach. Even if a treatment could be designed to address the fragility and inner-layer cleavage of the birch bark, there remains in the literature much caution regarding the long-term effects of conventional conservation treatments on ethnographic materials.

These include adversely affecting the organizational structure with aqueous treatments and removing vital structural and natural inhibitors with solvent treatments. It became increasingly apparent that once the scroll's secrets were made available, its long-term preservation would be dependent upon environmental and access policies. Our basic treatment strategy was to handle the scroll as little as possible and to ultimately place it between sheets of inert glass (Borofloat) until such time in the future as more options may be available. There still remained the daunting task of physically unrolling the scroll.

Treatment

As luck would have it, a colleague, senior book conservator Yasmeen Khan, was going to London on business and agreed to meet with the British Library's chief conservator, Mark Barnard, who had performed the unrolling of their collection of thirty Kharoshti scrolls. Although she came back from her visit armed with an exact description of the process, we became convinced that our proper role in the unrolling aspect of the treatment would be as "a second pair of hands." One of the most pivotal pieces of information shaping this decision was the fact that ancient buried cellulosic materials behave and handle substantially different than the cellulosic materials to which we are accustomed. Given the fact that there are precious few buried cellulosic materials around to practice on, it was obvious that a collaborative approach was essential. While the treatment proposal was simple enough—humidify and flatten—we felt that more experienced hands than we could provide were in order and arranged for Mr. Barnard to lead the unrolling.

The pre-treatment examination consisted of simply looking at the scroll with normal and multi-spectral lights with and without magnification. Testing was not carried out since any manipulation resulted in loss. We had to rely on Mr. Barnard's considerable experience in how the scroll would respond to the gradual humidification and subsequent manipulation. The unrolling necessarily occurs in one session and a primary aim is to handle it as little as possible, so it is vital before beginning that the rolled structure is as completely understood as possible (fig. 3). Some of the British Library scrolls have been concertina-folded and some reverse directions in the middle. Also, to the extent possible, a map of the structure needs to be made that mimics the number of rolls, knot holes, and other visible aberrations. This is necessary for the proper initial placement of the roll on the glass and to anticipate difficult areas. In particular, the naturally occurring knot holes present a challenge, as they are structurally hard, surrounded by material with no structural integrity. Prior to the actual unrolling, we practiced the entire operation on the paper model, placing it on an extra piece of Borofloat glass. We also practiced unrolling a heavily baked cigar roll. Mr. Barnard felt that was the closest thing he had found to the feel of two thousand year old buried cellulosic material, although the actual scroll was much more fragile. The next step was to humidify the scroll for three days at 80% relative humidity as this had been found to be a good level to gradually introduce moisture without getting the material too wet. The chamber was a simple 11" x 14" photo-tray, fitted with plastic egg crate and a layer of blotter and Hollytex on top of that. The bottom



3. End view of scroll showing rolled structure.

of the tray was lined with a sheet of rHapid gel and damp blotter that had been pre-conditioned for forty-eight hours.

The actual unrolling needed to proceed without interruption once it was started, so we chose a Saturday to eliminate distraction. An area in the lab with the fewest air currents was selected as our work space since the slightest air movement could cause pieces to be dislodged. We prepared specially fashioned tools that included glass weights to which we attached linen strips on the top to allow for maximum control as they were being set down and bamboo tools slightly narrower than we thought the scroll sections would be. The unrolling began simply enough with the object being placed on one sheet of the glass, centered where we thought the top would eventually be based on our paper model. Using our tools we unfolded each roll (fig. 4). As each section of scroll was unrolled a glass weight was slowly set into place to hold it down (fig. 5). One of the challenges encountered was the difficulty in distinguishing between an actual bark layer and an area of inner layer cleavage within a bark layer. Fragments were taken from the place that they were found within a fold and placed on an identical piece of glass in a location corresponding to where it came from (fig. 6). Over the four-hour process, we occasionally had to introduce moisture via a preservation pencil. The humidity stream was aimed at approximately twenty-four inches above the surface of the scroll to allow for very gradual humidification. Once the scroll was fully unrolled the individual glass weights were carefully removed. Detached fragments that were visible to the naked eye were placed on the second sheet of glass as we removed dust from the edges with a soft brush and aligned the strips as possible. This section of the treatment had to be done swiftly and surely to avoid the edges curling up and fragments being lost. Between the time that the last glass weight was removed and the second sheet of glass laid on top, the scroll was at its most vulnerable. The natural conservation instinct for perfection had to be dampened as fussing to align, unfold, and clean up would result in more loss. Laying down the encapsulating glass had to be done exceedingly slowly to prevent air from being pushed out between the layers (fig. 7).



4. Unrolling the scroll.



5. Setting down the glass weight.



6. Removing fragments from unrolled section.

Once the scroll was unrolled and encapsulated we sealed the edges with Filmoplast p-90. The amount of pressure to exert on the two pieces of glass was, again, a judgment call based on experience (fig. 8). The scroll retains considerable three-dimensional qualities that need to be saved while keeping the scroll in its place on the glass. Attempts at securing previous scrolls to one of the pieces of glass encapsulation have all resulted in further tearing of the birch bark, so the only thing holding our scroll is the weight of the glass and the slight pressure induced by the sealing.

The secondary housing consists of specially constructed clam-shell boxes made by senior book conservator Dan Paterson. We consulted with Mervin Richard, deputy chief of conservation and head of loans and exhibition conservation at the National Gallery of Art, for strategies to dampen vibration and impact within the box. Based on the dimensions and weight of the encapsulated scroll, the base of the box was fitted with a layer of specially fashioned Volara foam. A drawer is included in the box to hold all the tiny bits (dust) of the scroll that were left. A one-to-one color reproduction of the verso is housed next to the scroll with the intent of discouraging custodians from turning the scroll over. A second box is made to hold the glass-encased fragments. The boxes are housed in the "Top Treasures" vault, ensuring an extra layer of security, environmental stability and access control. The conditions within vault are 50% F and 50% relative humidity.



7. Laying down encapsulating glass.



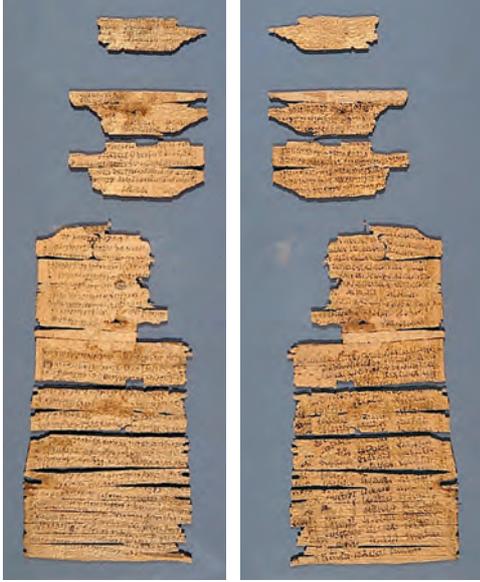
8. Sealing with Filmoplast p-90.

Conclusion

It is obvious from this presentation that the Gandhara Scroll was not conserved in the way that we normally think of conserving an object (figs. 9-10). It remains an incredibly fragile item and we had made a decision early in the process to preserve the maximum amount of information, resigned to the fact the every time the piece is handled, it deteriorates a bit. Our strategy for long-term preservation of the scroll itself is to minimize environmental impact and limit handling. During the process, we came to the conclusion that our instincts to address the basic issue of the inherent instability of this material through treatment would not serve us well. Additionally, despite the Library's large staff and considerable, varied experience, we had to seek outside help. While these ideas are not revolutionary they may be worth repeating.

Acknowledgments

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9-10. After treatment, recto (left), verso (right).

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Manuscripts Preservation and Restoration in Central Asia

The Conservation of Manuscripts and Rare Books at the National Library of the Republic of Kazakhstan

by **Sarsenbayeva Botakoz Shagaliyevna**, graduated in science (chemistry), Head of the Conservation service, National library of the Republic of Kazakhstan

PAC IFLA strategic program was implemented in Central Asia in 2007 thanks to the creation of a center in Almaty dedicated to Kazakhstan and the Republics of Central Asia (Kirghizstan, Tajikistan, Turkmenistan and Uzbekistan). Since the beginning, emphasis was placed on the preservation of rare books, manuscripts and special collections in the five National Libraries (Almaty, Bichkek, Achkabad, Tachkent) as well as training in this field.

The following presentation is a tentative of synthesis around this special topic thanks to Sarsenbayeva Botakoz Shagaliyevna, Head of the conservation department in the National Library of Kazakhstan, and to the former PAC Director, Zarema Shairmadonova who launched PAC in the region. Moreover, the very interesting report from Francis Girard, who, as last scientific director of IFEAC (Institut Français d'Etudes sur l'Asie Centrale/ French Institute of Studies on Central Asia), organized several missions in the area in 2012, sheds a further light on manuscripts preservation in Central Asia.

The National Library of the Republic of Kazakhstan (the NLRK) is the major books repository in the country. NLRK hosts the most valuable books and manuscripts collections in different languages (Oriental and European): for example, the genealogy manuscript "Nasab-Nama" written in 1099 (AH), (1688 A.D.), containing data about the ancestors of the great poet and philosopher Khodja Akhmet Yassau.

The first Kazakhstan Conference (1997) on "Problems of documentary written heritage preservation in libraries and archives" gave an impetus to the development of preservation at the National Library. In 1999 the Centre of Preservation for the library collections was created and then in 2001 the laboratory of documents scientific conservation: the Conservation service, next step, was the rightful result of this.

The NLRK accumulated an experience in preventive preservation, physical-chemical and biological stabilization, scientific conservation and restoration of documents. The Conservation service was developed at a national level because of the growing importance of preservation issues.

National Library Collections Preservation has the uttermost importance for the memory function of the national book repository. This is why one of the main tasks of the NLRK is the preservation of our cultural values for the coming generations. Preservation of the books, stability of their physical status over the time, stabilization and restoration measures are the main tasks of the Conservation service.

Research

Preservation at the National Library is managed with the chemical-biological-physical sciences (analyzes of the influence of different factors upon the aging of the documents). It is important to determine the boundaries between curators and restorers interventions on a document. These must be minimal but active, i.e. they must agree with the "Principle of Sufficient Necessity". Following this postulate, the experts of the Conservation service carried out the research following the theme: "Physical-chemical analysis of the specimens of paper and inks of the ancient Oriental books from the collections of rare books and manuscripts of the NLRK".

The research was an investigation in the papers and inks composition of the ancient Oriental manuscripts using physical-chemical methods of analysis in order to determine proper measures for their long-term preservation. The purpose was to elaborate methodologies for the carrying out of physical-chemical expertises on the basis of a detailed study of the IR-spectra of the paper and inks. It was also supposed to create the catalogue of the spectral bands of the manuscripts held in the collection to determine the age of the unidentified documents by comparison.

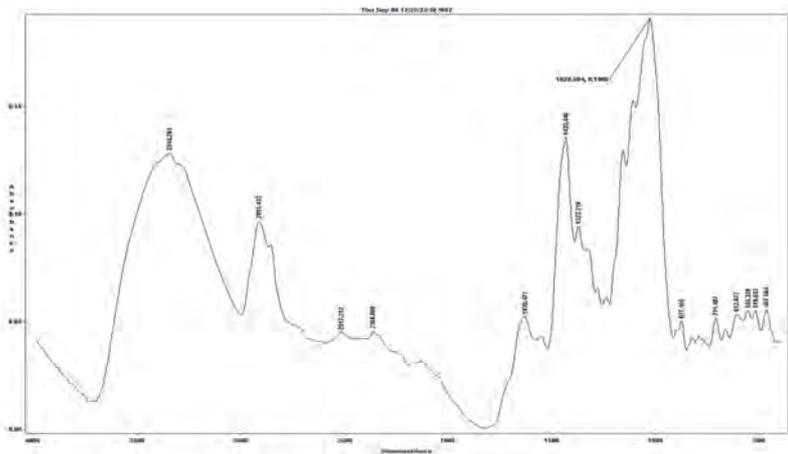
Collect of information and experimental works

During a long time of storage, paper materials are submitted to the natural process of aging, which is accompanied by changes in the physical and chemical qualities of paper.

The study of the structure of paper and ink specimens allows to keep track of the changes in the chemical qualities during the aging process, highlights them and help to precise the measures needed to slow down the processes of destruction.

These studies allow to define parameters like the nature of raw material used in the manufacturing of paper and inks (micro-chemical analysis); the presence of the wood pulp within the paper (microscopic analysis); the acidity of the paper (measured in pH). These are the primary indicators which are used for the identification of papers. The composition of the paper by fibers indirectly characterizes the quality and durability of paper and determines the methods of physical-chemical processing. To elucidate the nature of the raw materials of the specimens the micro-chemical method was chosen with the use of Hertzberg's reagent, (GOST 7500-85 - Paper and cardboard. Methods of determination of fibrous composition"). The Hertzberg's reagent is used for determining groups, subgroups and types of fibers, i.e. the dyeing methodology by the zinc-chlorine-iodide is the main one for determining the qualitative composition of paper.

Then were used the successive dyeing of the colors of the malachite green and basic fuchsia for the purpose of identification of the wood pulp. Also the composition of the paper was determined by IR-spectroscopy. The IR-spectra of the paper were recorded by the IR-spectrometer with the Fourier transformer "FTIR Mattson Satellite 3000". Paper acidity is an important



IR-spectrum of a sample of paper number 1.

characteristic to determine the presence of destructive chemical stuffs of the acidic or alkaline character. The acidity of the paper needs to be taken into account while planning the restoration-conservation activities and serves as a criterion for evaluating the state of the document, i.e. it is one of the indices, characterizing the strength and durability of the documents.

The results of research

The results showed some differences in the spectral curves; this is connected with a different composition of papers and inks, consequently with different methods of their preparation and we found the best solution for an optimal conservation-restoration processing, taking in account the physical state of the documents, their behavior and durability margin in the environmental conditions of storage. Further research about the specimens confirmed the fact that using the micro chemical method and the IS-spectroscopy, one can determine the date of production of a manuscript. Thereby we determined the approximate date of creation of the Quran which came for expertise in the State Museum. Our conclusions were confirmed by the well-known Moscow Expert-Orientalist M.S. Meyer.

Research must continue to get a detailed list of the issues and to compare the experimental data. This requires the accumulation of information on the physical-chemical characteristics of the specimens and further study of the collected material.

On the basis of these researches the catalogue of the spectral bands of paper and inks will be compiled including the composition and structure of all the manuscripts. Thank to this, it will be possible to determine the period of writing or of publication of unknown documents, and also the necessity and possibility to execute the conservation-restoration works.

The scientific tasks which are necessary for a long-term preservation of the documents in the library are multilateral. It is important to preserve not only the material carrier itself, but also the writing of the texts. The knowledge of the chemical processes which takes place within the structure of the paper, the possibility to manage speed of fading of the inks used in the document, by using the conservation-restoration processes, by changing the climate within the rooms, the acidity of the paper etc. have a great significance within the system of activities for the provision of preservation of the whole library collection.

In 2008 was also carried out a research dedicated to the comparison of two preparations active against the growth of microorganisms in paper documents: metatin (METATIN GT) and ethanol (ethyl alcohol). The characteristics of the studied preparations showed that METATIN GT provides an excellent deterrent effect against bacteria and fungi and also minimizes the growth of stability of the microorganisms. Ethanol – or the ethyl spirit, the non-color transparent liquid with the characteristic smell is an effective means as an antiseptic. As the experiment showed no growth of the mold was fixed in any of the cups. For control purposes, we used the clean Petri dishes (with no samples) with Sabouraud nutrient medium.

The carried out experiment showed that both preparations are effective as biocides against the growth of the microscopic fungi and mold. However, in the case of metatin sampled with a cotton swab, bacteria is found (pink and yellow-colored) which testifies its insufficient effect.

By comparing these preparations, we noted that metatin is an expensive preparation difficult to purchase as it is manufactured in Switzerland. In the service of documents conservation, ethanol is used as a biocide against the growth of microorganisms; it is easier to purchase, it is not a costly preparation and it is well recommended.

The works carried out at the NLRK Conservation service

The biological and physical-chemical stabilization of paper- and leather-based documents is carried out in the service of conservation. In the same time we used the following methods and techniques: the disinfection and disinfestation of documents, the manual treatment with biocides, the determination of pH, the removal of stains and soiled spots with different chemicals, the strengthening of the dilapidated sheets with the supplementary solutions, the fat liquoring of the leather bindings, the washing in distilled water, the neutralization of acidity, the creation of the alkaline reserve or buffering, the blocking of the ions of the heavy metals – the catalysts of aging, etc.

Research by foreign colleagues showed that a paper with the guaranteed alkaline reserve but containing the catalysts of acidification cannot be sufficiently durable. To increase the stability of paper it is necessary to bind the ions of the heavy metals and inactivate the catalysts of oxidation destruction. In our case we used the processing by complex ones in conjunction with the Barrow buffer as being effective.

The stabilization of the mechanical factor is implemented by the use of the phase-by-phase conservation: the manufacturing of boxes or otherwise – of the microclimatic acid-free cardboard containers, into which there are placed the rare books and manuscripts.

The restoration-binding works

After all the stabilizing bio-chemical and physical processes, the documents are sent for the making of the book-block and the binding. It is necessary to restore the document while preserving the historical, informational and artistic value, allowing a long term use. There are no universal methods applicable for all the cases. In each concrete case the experts find the best suited acceptable ways for the restoration of the damaged

documents. The conservation-restoration interventions on documents depend upon the number of copies available in the collection, the value of the edition, the extent of damages, etc.

To carry out restoration works we used special glues. The glue manufactured from a natural basis (Sirish, courteously provided by the National library of Iran), is used both for the paper and leather bindings of the ancient Oriental manuscripts. Also we used wheat and rice glues. Sometimes we used NaKMTs (sodium carboxymethyl) cellulose for the strengthening of the papers.

The quality of restoration and durability of the restored document depends upon the paper used. We use such restoration papers like the Japanese silk cloth of different density, the mica one made of cotton cellulose, etc.

A useful activity for the specialists of the libraries of Kazakhstan was the carrying out in June, 2011 of a practical workshop focusing on the restoration of Oriental books and manuscripts with the support of the UNESCO Cluster Bureau in Almaty city for Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. 30 specialists went through the training from different libraries of Kazakhstan, the Central state museum of the RK and the Central state archives of the RK. The training was led by Thierry Aubry, expert in restoration from the National library of France (see the complete report on this workshop in *IPN* 54, August 2011).

Preventive conservation

Activities of preventive preservation include the control of temperature, relative humidity, light intensity in repositories, the detection of biological damages in documents. The scanning of the book collections is one of the major preservation measures. From 2007 to 2010 were examined: the rare books and manuscripts repository and the whole general repository: Kazakhstanica, foreign literature, the archives, etc.

It is necessary to maintain such activities like the determination of the chemical and microbiological composition of the air (surveyed in 2007-2008 together with the sanitary-epidemiological station). Constant monitoring of the microclimate allows to detect any deviation from the standard storage conditions and respond to them by the technical, engineering and other possible means.

Moreover, the experts of the Library Conservation service make lectures and contribute to conferences and seminars on the issues of preservation and conservation for the specialists of the regional libraries.

Conservation and Preservation: National Libraries of Central Asia

by Shaimardanova Zarema, Former PAC Director for Kazakhstan and the Republics of Central Asia

Written cultural heritage of the Central Asian region of the CIS (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) is rich and concentrated in libraries, archives and region museums.

Before the Central Asian States Independence (1991), the rigid centralization of Planning, the imperious control of libraries system led to the deterioration of libraries collections. After independence, as national libraries became members of IFLA and of some other international organizations (ICA, TURKSOY), the awareness of preservation needs grew. There was obviously technical and technological lacks in the field of restoration and binding, the need to use modern restoration and binding materials for a better long-term preservation.

In the last two decades national libraries carried out campaigns among the state structures, the public and the libraries staff about the importance of documents conservation and preservation.

In 2008 a survey about the conditions of preservation in the national libraries of the region revealed:

- a lack of professional staff in the field of safety and preservation,
- a lack of prestige for the professions of librarian, conservator, restorer and bookbinder,
- a lack of bookbinders and restorers as a result of absence of specialized educational institution.

The National Library of the Kyrgyz Republic

The National Library of the Kyrgyz Republic main function is the preservation of the documentary memory of the nation, i.e. set of the documents published in Kyrgyzstan and about Kyrgyzstan. The national Library is developed as a modern scientific, cultural and research institution in the field of library science and national bibliography. It keeps about 6 million documents available to a wide range of users: collections of maps, notes, manuscripts, rare books, theses, newspapers, magazines, microforms, audio and video, etc.

The National Library of Tajikistan

In the region there are two national libraries – Tajikistan and Uzbekistan – settled down in new buildings corresponding to current international standards, with the observance of preservation requirements. Indeed, on March 20, 2012, in Dushanbe the new building of the National library of Tajikistan opened. The architectural project of the nine-floor building, located in the center, includes 40 spacious, light reading rooms, 22 repositories made to host 10 million documents, auditoriums, printing services. Total area – 44 478 sq m, width - 155 m, height – 152 m. There are 15 new departments and 8 centers, among which laboratories on restoration of rare books and manuscripts. Now the collections of the National library of Tajikistan include more than 3 million manuscripts and books, a unique collection of cultural and art values.



The National Library of Tajikistan



The National Library of Uzbekistan

The National Library of Uzbekistan

The National Library of Uzbekistan named from Alisher Navoi (1870) is hosted in the monumental Majrifat Markazi complex (the education center). It opened on February 20, 2012. It is a large-scale project providing proper preservation conditions to library documents.

It is well-known that Uzbekistan is a cradle of paper production. Known orientalist Akimushkin O. F., telling about library in Herat, created at the end of 1420, noted already the existence of a remarkable workshop in which bookbinders worked along with masters of calligraphy, decoration, miniature painting, etc. The national library stores more than 250.000 editions of XVII-XIX centuries and the first quarter of XX century, more than 15,000 editions are collected in department of rare and ancient editions. It is known for its collections which include painted manuscripts, the scientific "Turkestani collection" of the Russian bibliographer V.I. Mezhov and a "Turkestani album" of the orientalist A.L. Kun.

The national library is active in the organization of international conferences on preservation and scientific restoration seminars. One of the last seminars occurred in December 2012 on "Ensuring Safeguarding of the Unique, Especially Valuable and Rare Editions, Actual Problems of System Increase and Enrichment of Their Fund". At this seminar were discussed manuscripts, rare books, and newspapers conditions of storage, as well as development of new directions in the field of preservation and restoration.

All the events organized were dedicated to the improvement of collections preservation and to the development of skills in restoration and binding. An international training seminar on "Ensuring safeguarding of library stocks" with the participation of experts from the Federal center of preservation of the Russian National Library took place in 2008. It focused on awareness of preservation among government bodies, the public and librarians.

The Japanese Agency of the International Cooperation (JICA) contributed to the revival of production of ancient Samarkand paper and gave the opportunity to further improvement in its production processes which can be used to restore manuscripts. Moreover, National libraries of the Central Asian region successfully carried out digitization thanks to UNESCO training.

Conclusions

Central Asian libraries are faced with a problem of long-term preservation because of the lack of scientific/theoretical and practical basic knowledge. Emphasis should be put on:

- fundamental and applied chemical, physical, biological and mycological researches,
- promotion of acid-free paper using international standard, digitization of cultural and scientific heritage,
- training for library staff, conservators and restorers of the region,
- launch of Centers for manuscripts restoration,
- development of emergency planning in case of disasters,
- Sponsor grants and funding for restoration and binding projects,
- strengthening of interregional cooperation of national libraries.

Conclusions based on Francis Richard's Report on the Central Asian Situation

Francis Richard, former scientific director of IFEAC (French Institute of Studies on Central Asia), made several missions in 2012 in the Republics of Central Asia. He mainly noted an important need for training and expertise in conservation. In Tajikistan, he gave lectures in the Institute of Orientalism and Manuscripts Heritage about manuscripts preservation, cataloguing, codicology and digitization. He noted the lack of scientific and restoration background in the library staff. In Dushanbe, even if the new National Library has exceptional means in terms of computers and equipment, it suffers from lack of training too. Expertizes are needed for the rare books treatment. In Kyrgyzstan, the well-organized national library keeps rare collections from the Soviet era requiring restoration. In Tashkent (Uzbekistan), the Biruni Institute, the main center for manuscripts in Central Asia, was equipped by Arabic Countries but still badly needs training and expertise in restoration. Finally, Turkmenistan remains a challenge as the country is just opening. The Manuscript Institute could be the right partner there to organize training as it has already an equipped workshop.

Earthquake Preparedness for Libraries: Lessons of the Great East Japan Earthquake

by Naoko Kobayashi, Director, IFLA-PAC Regional Centre for ASIA, National Diet Library, Japan

The magnitude 9.0 tremors unleashed by the Great East Japan Earthquake on March 11, 2011, the strongest in recorded history in Japan, resulted in widespread damage on a scale never before experienced by libraries in the country. Massive numbers of books and other library materials suffered physical damage, not only from the waters of the tsunami, but as a result of falling off shelves or damage to the shelving itself. Even in areas of the country far distant from the epicenter of the quake, the tremors tossed books off of their shelves; at the Tokyo Main Library of the National Diet Library, approximately 1.8 million books were displaced.

There are many basic manuals on disaster preparedness for library materials including the IFLA PAC-published *IFLA Disaster Preparedness and Planning: A Brief Manual (International Preservation Issues (IPI) no. 6)*¹. Most such manuals discuss preparations and responses to flooding and fires, which are experienced almost anywhere in the world. Regarding preparation or planning for earthquakes, which are region-specific disasters, however, there is virtually no consolidated and internationally shared source of information.

In May 2012, one year after the disaster, the Japan Library Association published a guide to prepare earthquake countermeasures manuals² providing basic safety and management know-how for all aspects of libraries pertaining to facilities, human lives, and books and documents. From the perspective of preservation and conservation of library materials, however, further details are needed to improve measures to prepare for major earthquakes in libraries, including brakes to prevent books from falling off shelves and approaches to re-shelving in a library affected by a quake. Given the great damage from the tsunami following the March 2011 earthquake, there has been quite a bit of exchange regarding the handling of water-damaged materials, but so far there has not been much information sharing about earthquake-resistance measures.

In December 2012, therefore, the National Diet Library of Japan, which is designated as the IFLA PAC regional center for Asia (PAC Asia), held a Preservation Forum 2012 entitled "Preparing Libraries for Earthquakes: What We Found Effective, What We Learned from Our Experience" to share and exchange information on earthquake countermeasures from the viewpoint of preservation and conservation. Eighty-four people participated. The speakers were Hiroo Yanase, an architect specializing in library architecture (Okada Architect and Associates and also a member of the Japan Library Association, Library Building and Equipment Committee) and three librarians from prefectural and university libraries in the Great East Japan Earthquake disaster-affected zone.

Convinced that those engaged in preservation and conservation in libraries of any earthquake-prone country would find what we learned through the Preservation Forum 2012 useful to their own circumstances, we introduce the highlights here. We hope our colleagues even in non-earthquake-prone countries will find of interest the challenges faced in equipping libraries to mitigate seismic activity.

This article first outlines the content of the keynote lecture by library architecture expert Hiroo Yanase, presenting the basic wisdom of preparedness for earthquakes with emphasis on the library as a building, along with the shelving and other equipment that holds library materials. Next it introduces the realities of the damage caused by shaking in a major earthquake from the case-study reports presented at the forum, including specific methods for preventing books and other materials from falling off shelving, and repair of damaged materials. Lastly, the article takes up the crucial concern of ways to prevent harm to users and personnel in libraries.

Keynote Speech: Basic Wisdom of Earthquake Preparedness for Library Buildings and Shelving

Distinctive Features of Library Buildings

Buildings that are constructed for library use tend to have marked imbalances in terms of load between the stack zones where the weight of books are concentrated and the comparatively lighter seating and reading-room zones. When the shaking of an earthquake is continuous, the differences in load within the building tend to set in motion uneven vibrations that can result in damage of parts where stresses concentrate even if the building is structurally quite sturdy.

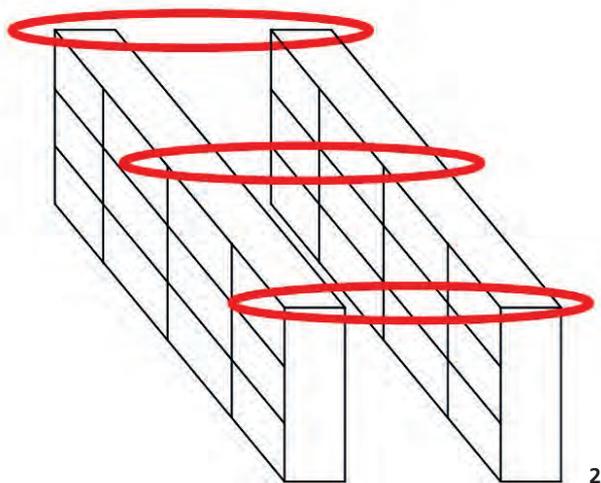
Toppling and Damage to Fixed Shelving

The general approach thus far to securing libraries against earthquake disasters has been to fix shelving to the floors and walls. It was learned from the experience of the strong tremors of the 2011 earthquake, however, that if the anchor bolts are not firmly set or if the wall to which the shelves are attached is of insufficient strength, the anchor bolts may be pulled out and the shelves fall over regardless (Figure 1). When a number



1. <http://archive.ifla.org/VV4/news/ipi6-en.pdf> (accessed 2013-06-20)

2. *Earthquake Disaster Management in Libraries: Knowledge Sharing for Less Damage*, Japan Library Association, 2012, 127 p. (written in Japanese).



of shelves are lined up, as a rule they are connected at three points—both ends and in the center (Figure 2), but there were cases when the balance of the attached parts was poor and the shelves toppled anyway (Figure 3 shows a case when a shelf was attached to the ceiling in two places [red circles] only at the front, not at the back top, and because the balance was poor, the shelf toppled under the severity of the shaking).

Whenever shelves have toppled despite having been fixed in place, the reasons should be examined before reinstallation. The walls and posts of buildings that form the strong structural parts of a building are often finished with non-structural veneer or sheathing, so it is important to check the thickness of such layers and the strength of the part to which the shelves are to be attached. When such materials are not sufficiently sturdy, they should be strengthened before positioning shelving. Since the structural strength of walls and posts may not be apparent from the outside, it is important to obtain the design drawings of the building when it was constructed and check which walls or posts are the most reliable for attaching the shelves.

Discussion of “Falling Books”

The 2011 Great East Japan Earthquake occurred during the open hours of libraries and so users were present when the tremor-produced shocks and swaying knocked books from their shelves and toppled and damaged shelving in massive quantities. (Figure 4)

Until the 2011 quake, it was thought that it was better, as far as human safety is concerned, for books to fall off the shelves, lightening the load and preventing the shelving itself from collapsing or toppling. But large books flying off a shelf from overhead can cause serious injury, and if fallen books obstruct passageways, evacuation—especially by people in wheelchairs—is seriously hindered. Moreover, when books spill off shelves in large numbers, the labor of re-shelving in the aftermath of a quake is greater the larger the library. It is necessary to secure open passageways and save labor of re-shelving by utilizing various means or devices for preventing books from falling.



The precondition of the use of such means, however, is shelving that is strong enough to endure shaking with the books in place. The domino-like toppling of parallel rows of book-filled shelving is among the greatest dangers in libraries.

In addition, it is not enough to simply adopt the available means of preventing books from falling without understanding it well; staff must have a thorough understanding of how various kinds of equipment work and how they should be correctly used. Manufacturers should assume responsibility for preparing user manuals providing complete instructions and explanations about conditions and cautions in the use of devices to prevent books from falling off shelves.

There are some cases of success in equipping libraries to withstand earthquakes, each with specific features. Use of such equipment should be chosen in accordance with the structure of shelving and judgments made as appropriate. Further consideration of the issues of “falling books” involves three perspectives, as follows:

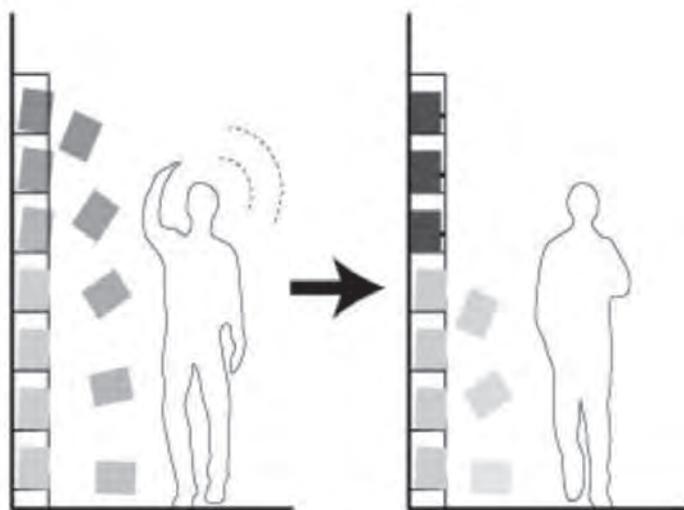
(1) Preventing Books from Falling as Much as Possible

Seismic-isolation structures (structures that absorb the vibration energy of tremors in an earthquake-absorbing layer connected to the foundations, thereby markedly reducing the shaking of the upper structure) and vibration-control structures (structures to which vibration-absorbing devices are attached) have been devised to mitigate the swaying of the main frame of a building itself. But such technology can as a rule only be incorporated when buildings are newly constructed. Library buildings constructed from now on will increasingly be utilizing such technology.

Methods for introducing this technology in existing buildings include the option of attaching seismic-isolation devices to individual library furnishings. This technology is being utilized by many art museums.

(2) The Idea that Falling Books is Unavoidable

Another perspective is that it is inevitable that books will fall off the shelves. Even if books cannot be prevented from falling, key precautions that can be taken in order to assure human safety are arranging stacks such that fallen books do not block escape routes and taking care that heavy books are not placed on high shelves. When placing heavy books up high is unavoidable, measures should be taken to prevent the shelves from toppling and to secure books so that they will not fall off the shelves (Figure 5-7).



5. No storage of heavy books on shelves overhead or securing them so they do not fall.

(3) Facilitate Re-shelving Work

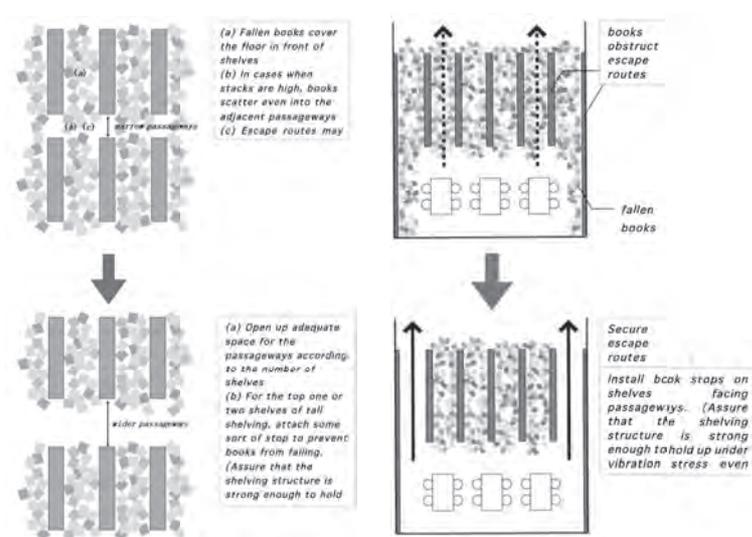
The larger the library, the more difficult it is to put the books back in place once they have fallen. If all the books fall, no trace remains of where they belong, complicating the re-shelving process. So, if a means can be devised to even partially prevent books from falling and for preventing the signs on the side of shelves showing where books are located from falling off, then it is easier to tell where the books are to be put back, and this helps to shorten the time needed for re-shelving.

From the Case Study Reports: Damage from Earthquake Tremors, Measures to Keep Books from Falling, and Repairs

Damage to Library Materials Resulting from Earthquakes

The staff member in charge at the Miyagi Prefectural Library reported in detail on damage to library materials resulting from the March 11, 2011 earthquake. The total area flooded by the tsunami in Miyagi prefecture was vast, accounting for about 60 percent of the area flooded for the six prefectures of the Tohoku region, and some buildings were washed away. Damage to library materials resulting from the earthquakes was caused either by shaking or water, and it appears that more of the water damage was caused by plumbing system breakage than from the tsunami. Damage from shaking included that resulting from the impact of dropping off shelves or from being squeezed between toppled shelves and the floor, as well as from broken glass and shattered fluorescent tubes.

The epicenter of the quake was offshore from Miyagi prefecture, but the strongest tremors were felt inland, and huge amounts of library materials were knocked from shelves and damaged. Specific types of damage from dropping off shelves



6. Passageways kept clear (1).

7. Passageways kept clear (2).

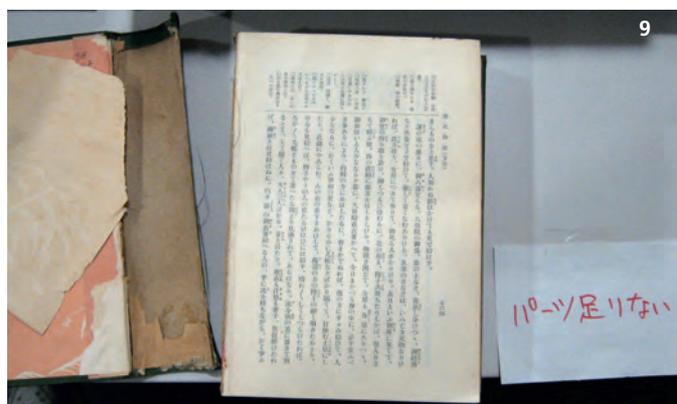
included breakage to spines (Figure 8), binding structure breaks and pages come apart (Figure 9; red-lettered sign reads: "parts missing"), and "unidentified book part" (red-lettered sign in Figure 10).

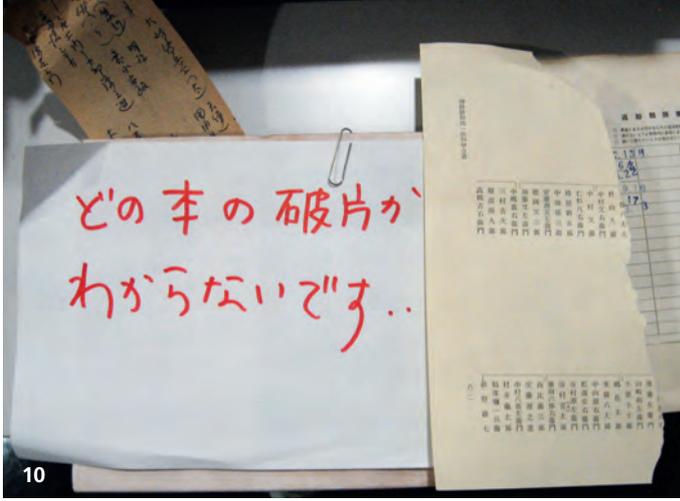
Measures to Prevent Materials from Falling from Shelves

At the Miyagi Prefectural Library, shelves had been fixed in place since before the 2011 quake by bolting them to the floor and steadying the upper parts with braces across the shelves. After the quake, they found another simple book-stop measure that proved effective in the form of a binding tape tied across the front of the books. Figure 11 shows how the books, shaken by a tremor with an intensity of 4 on the Japanese seven-stage seismic scale in December 2012, have shifted to the front of the shelves but not fallen off. The use of non-slip sheets on shelves is especially effective for materials in plastic cases, and it is used for the shelves with high-density storage such as of videos, CDs, and so forth (Figure 12).

At the Tohoku Gakuin University Central Library, measures had been taken from before the 2011 earthquake to bolt shelving to the floor and brace them at the top. Book-stop devices, which consist of a bar that is removed by hand when taking materials from the shelves, were installed on the top 2 to 3 shelves (Figure 13). At the time of the 2011 disaster, in some cases the materials on the bottom shelves only fell out, and heavy items on upper shelves threw off the balance that caused many shelves to become bent or warped.

In November 2012, the Fukushima Prefectural Library conducted a questionnaire survey of damage from the March 11, 2011 disaster among the 29 municipalities with public libraries in the prefecture. Some of the libraries were located in the no-go zone around the damaged nuclear power plant and entry into them was not allowed. Responses were received from the





other 24 municipalities. Damage in the libraries in Fukushima prefecture were not due to the tsunami and other water-related factors, but all the result of earthquake shaking. According to the survey, few of the libraries had taken measures to prevent books from falling prior to the quake, but some minor remedies, such as pushing books to the back of shelves, were contrived to minimize the impact of strong tremors. The survey found that libraries that adopted some measures, including laying non-slip sheets on shelves, installing sensor-activated bars to prevent books from falling, or use of lower shelving, experienced fewer incidences of fallen materials that required repair than those that had not adopted such measures.

Repair of Damaged Materials

The Tokyo Main Library of the National Diet Library consists of two buildings—the Main Building and the Annex. Both buildings have stack spaces (Figure 14). Few materials in the Annex stack spaces (8 basement floors, completed in 1986) fell off shelves, probably because the spaces are underground. In the Main Building stack spaces (5 basement floors, 12 above-ground floors, completed in 1968), as many as 1.8 million books fell off shelves on the higher floors. The library suffered the greatest damage since it had opened in 1948. Because of the great quantity of books that fell off the shelves and because it was urgent to resume library services as soon as possible, the whole library staff was mobilized to put the fallen materials back on the shelves while at the same time, selecting books that needed to be quickly repaired and prioritizing their repair. Priority in repair went to books whose cover had been completely separated from the pages, books with broken or torn spines, and books from which pages had been completely separated—in other words, books in such bad condition that they could not be used as they were. Some 500 books were set aside according to these criteria, with books published in Japan given higher priority for repair.

As far as disaster preparedness for library materials is concerned, it is vital to decide in normal times what materials



should be given priority for rescue. When there is a huge quantity of damage, it is extremely difficult to save everything, so the process of deciding what to save and what not to save must be carried out. In disaster recovery of library collections, purchase of replacement copies from elsewhere or receiving donations from other libraries are among the options, along with repair, to be considered. Evaluating which such options to select must rely on the knowledge and experience of professional librarians. Local libraries often play a role in preserving local documents, and because most such collections are not-for-sale and are non-commercial publications, in many cases they are “irreplaceable.” In budgetary terms, too, it is difficult to simply purchase replacement copies even if they are available. One way to effectively prepare for disaster recovery is to acquire skills to perform repairs to at least lightly damaged materials at the library itself.

Crucial Consideration of Ensuring Human Safety

An earthquake's shaking occurs all of a sudden, without warning. In the case of a flood we can make some preparation beforehand in accordance with a phenomenon, such as heavy rain, that might lead to flooding. As for fire, an adequate fire alarm system enables library users and staff to evacuate. Even in the case of a massive tsunami following a major earthquake, because it comes after the shaking, people can immediately flee to a higher place for safety. But when the shaking of an earthquake will take place is unknown, and therefore there is no way to avoid damage other than to make preparations in normal times for ensuring safety.

All the speakers at the Preservation Forum 2012 emphasized the importance of human safety, pointing out, for example, that the toppling of shelves lined with books is most dangerous and that it is very important to secure evacuation routes. Ensuring human safety is even more crucial than protecting library materials. As mentioned earlier, we must fasten the shelves in place so as to keep them from toppling and, in order to secure evacuation routes, prevent library materials from falling into passageways.

At the forum, representatives from libraries in the area hit by the 2011 earthquake said they felt disaster prevention drills in normal times had proven effective. Preparedness improvements made in the wake of the 2011 disaster, they said, include the posting of hazard maps on library walls, revision of disaster pre-



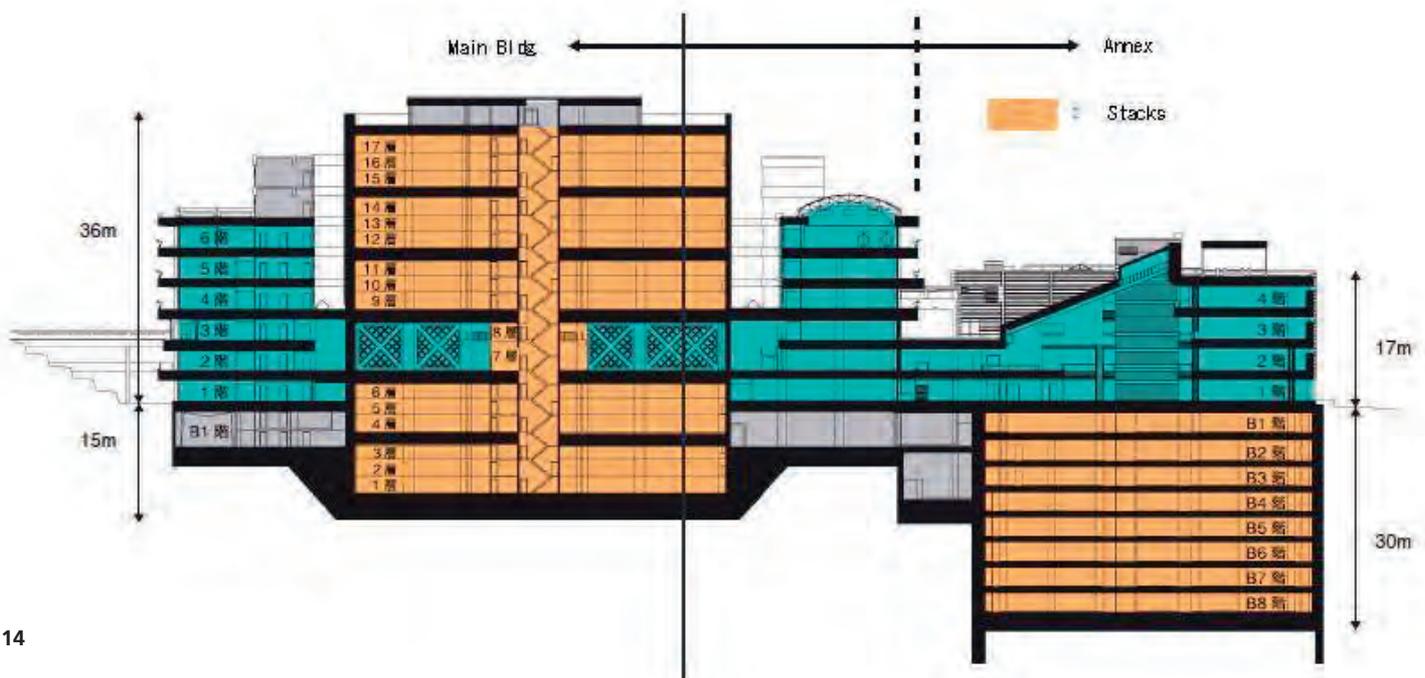
vention manuals, increase in the number of emergency drills, among others. Knowing what to do at the time of evacuation is especially important, and so it is vital for staff to practice giving their instructions for library user evacuation in a loud voice and to be sure to know the designated evacuation routes in their building. We must remain aware that a strong earthquake could hit at any time. All the library staff must share that awareness and be able to do exactly what they are supposed to do at the time of an earthquake, as their actions will be vitally important to guarantee safety.

Conclusion: Difficult Post-quake Recovery

In Japan, in the immediate aftermath of a major earthquake, the staff of public libraries are expected to engage in relief activities such as assisting local residents. University library staff

members may need to help other departments in confirming students' safety. Infrastructure may be heavily damaged and aftershocks may be frequent. It thus often takes time for the safety of library buildings themselves to be checked, and it is likely that staff may not be able to go into library immediately. Indeed, at the time of the 2011 earthquake it was not until two weeks after the quake that the staff of the Tohoku Gakuin University Library were able to enter the library building.

Librarians must consider how to protect the library materials in their care upon the premise that they cannot promptly deal with the situation right after a major earthquake because, for various reasons they may not be able to turn to the recovery task for library materials immediately. Grappling with these tasks calls for much experience and know-how. We hope that anyone with information or manuals on earthquake preparedness for libraries will get in touch with us at PAC Asia website (<http://www.ndl.go.jp/en/iflapac/activity.html>).



Mass Treatment Recovery for Tsunami Damaged Document by Local People Assisted by Conservators

by **Toru Kibe**, Secretary-general of Toubunq, Tokyo Document Recovery Assistance Force,
Director of Archival Conservation & Enclosures Co., Ltd., Japan

Introduction

As a result of The Great East Japan Earthquake and Tsunami on March 11, 2011, more than fifteen thousand precious lives have been lost and it left extensive damage to houses, facilities and infrastructure. A large number of documents, including important cultural properties of historical significance were damaged or destroyed.



1. Almost all of Rikuzentakata City was swiped away.

A volunteer group Tokyo Bunsho Kyuentai (Toubunq: Tokyo Document Recovery Assistance Force), was established in the beginning of May 2011 by former librarians from Tokyo district and private conservators with its purpose to support recovery of paper based documents. The representative is Akio Yasue, a former deputy director of the National Diet Library. It started its activity from June 1st to help recover paper documents evacuated from the disaster areas which were totally dried or partially dried and bring them to stabilizing condition including the possibility of reformatting, especially digitization. The documents showed some particular damages not usually found in other disaster damaged materials and therefore Toubunq's document recovery system (a combination of equipment, treatment procedure and skill training) has been developed through responding to these features. Our activity is to supply this system as well as skill training to be used in the disaster areas and to enable local people to recover damaged documents themselves. It gained reputation as a system which can be used by non-conservators to recover documents contaminated by mud and sea water and stabilize their condition. Progress has been made to set up more system in the disaster struck areas in Tohoku (northeast district of Japan) where institution and local government are operating recovery. The following will focus on the characteristics of damaged document from this disaster, Toubunq's idea of salvage and describing Toubunq system founded from these factors as its base.

Unprecedented disaster and damaged document

The word "unprecedented" is often used to describe this disaster. There has been no historical record in the world of earth-

quake, tsunami and nuclear accident, all striking a nation at the same time. The disaster area was extensive covering 500km along the Pacific Coast of Tohoku. It was no doubt an unprecedented disaster.

The word "unprecedented" refers to the salvaged document as well. Firstly, thousands and millions of documents owned by public institution or private sector of the area were damaged. It is rare to see a case where an enormous amount of documents was affected by a disaster within such an extensive area.

Secondly, documents were not only covered by sea water but also by sludge. Documents found in debris were often covered with sludge, containing not only sand and mud but also mould, bacteria and asbestos which can present hazardous health risks.

Thirdly, documents were left unattended in the disaster area for a long time. After the earthquake on March 11, many aftershocks followed. It was inevitable that rescuing people's lives was the prime concern and therefore when the salvage began in these areas, infrastructure such as electricity, water and road (access) were provided as priority. As a result, recovery of damaged documents became secondary and delayed. In addition to this, it was difficult for the volunteers from other regions to arrive at the area. They had to travel for a long time as the only means of transportation was by car, there was nowhere to stay and they even had to bring drinking water.

If you are confronted with the reality of this unprecedented disaster, the actual state of damaged document beyond one's imagination, it is natural that anyone would turn to despair, not knowing what to do and feeling impossible to rescue them. The author himself, even though solving this problem is within his area of expertise, was attacked by sense of helplessness.

Drying within 48 hours of the disaster is recommended, but...

Under these circumstances, documents covered by sludge and stayed damp by sea water were left in the disaster area for a long time. Usually, drying process for rescuing water-damaged document should commence within 48 hours or 72 hours at the longest to avoid mould contamination and growth (Figure 2).



There are two ways of drying or dehydrating

from wet document which are evaporation and sublimation. For example, freeze drying is sublimation and it is a process of freezing the water damaged objects and dry as it sublimate the water from solid to gas phase. This way of recovery became widely recognized to librarians, archivists and general public through this disaster, however, it requires time and cost and moreover it limits the amount of document to be treated.

In general, the former drying process, or naturally drying method "air-drying" is more common. It is a drying process by circulating the air using electric fan or other equipment placed near documents which are standing upright. Blotter paper are placed in between the pages and changed frequently as they become damp. Most of the documents rescued in this disaster, became gradually dried after they were left unattended without undergoing this drying process.

Rescuing and Air Drying

The difficult situation continued during March and April. In May, the reports on salvage document began to appear in newspaper and television. At that moment, salvage meant collecting documents from debris and drying them.



The rescued documents included modern and contemporary publication as well as old books, handwritten manuscripts, government archives, and photographs. Many of them were unique or had only small numbers of copies. They were rescued as priority and dried accordingly (Figures 3-6).

Developing Toubunq system

Upon inspecting rescued documents and handling them, we realized that the pages of most of the dried or partially dried printed books, archives and document could be taken apart. By having them as sheets of paper, we could "recover" them by using our expertise, technique and know-how, from our experience as conservators. We began to engage in making a model of treatment system for recovery in the beginning of May.

There have been numerous techniques for restoring damaged paper documents. It is worth mentioning that from 1980s,

substantial progress was made internationally in scientific approach and research on paper and book conservation in the field of conservation science of cultural property. Recovery operation of library and archival materials from 1966 Florence flood accumulated techniques and case studies of mass treatment recovery.

Our system was developed based on the particularity of damaged document from this disaster. We have examined and chosen essential factors from previous conservation techniques. We combined them and adapted them to develop our system to make it appropriate for the recovery. Towards the end of May, after a month of hard working, our system was in a final stage of completion.

What is "recovery" of document?

We say "the value of document lies on making it usable and available". Therefore "recovery" here implies to recover the document to the state which can be utilized. As mentioned previously, water damaged document must be dried in order to avoid mould growth. However, even when they are dry, it does not mean that they have recovered adequately enough to be handled or used. Dirt from mud, distortion, residue of mould, and sometimes asbestos are still existent. Residual salt from water in paper make it sticky when humidity rises. Bad smell from bacteria and sludge remains. Most of them are still far from the state of being able to be used (Figures 7-8).

These documents which are dried or half-dried and disassembled to pages can undertake treatment by our recovery system and bring them to the state which can be utilized.



Supporting the disaster area to aid its recovery

It maybe taken as granted that conservators recover damaged document because that is what we practice everyday whether it is damaged by disaster or not. However, the purpose of Toubunq's activity of providing the system is not for conservators to recover document. It is for the people who live in disaster areas or the groups who support them, taking over the recovery. They are the people who do the actual treatment. We propose the equipment and treatment procedure and supply them to these areas. We set up the system on site and provide half a day skill training to the local people who are non-conservators. Then they will continue the recovery by themselves. This is the core of our volunteer work. Conservators engaging in volunteer work by this way in order to recover document was unknown in Japan to say the least.

Features of Toubunq system

What is Toubunq system? As indicated, the system was developed based on circumstances and features of rescued materials from this disaster. Therefore it enables people who are non-conservators to remove mud and mould safely from document without damaging them. Its washing method removes salt out from the document. Its drying method enables document to be dried and flattened quickly in piles. Materials used for this system can be obtained easily and can be reused many times making it economical. Furthermore, the system is far faster and productive and the result more satisfactory compared to other ways of washing and drying.

Our manual including our technique and know-how can be found in [our website](#).

Treatment procedure

Following is the treatment procedure.

1. Disassembly : Take the document apart to individual sheets of papers
2. Dry cleaning : Removal of dirt while it is dry
3. Washing: Washing in fresh water to remove dirt and salt
4. Drying/Flattening : Fast drying and flattening by piling the document

This procedure is presented in a video in [our website](#).

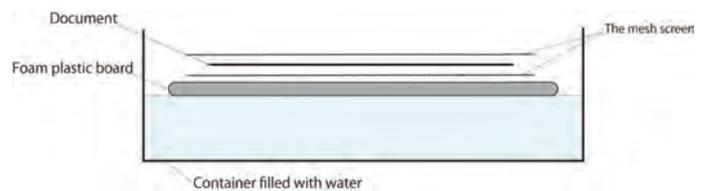
Dry cleaning method

This method is removing mud, sand, dust, residue of mould using vacuum cleaner, brush and micro fiber cleaning cloth. Spatula and tweezers are used to remove hardened mud mechanically (Figure 9).

Dry cleaning chamber attached to vacuum cleaner with HEPA filter is used if the treatment is performed indoors to prevent dust particles scatter around. This equipment is supplied by Toubunq. This method is based on the one that has been introduced into the rescue of the library and archive materials in Florence disaster in 1966.



Floating board washing method

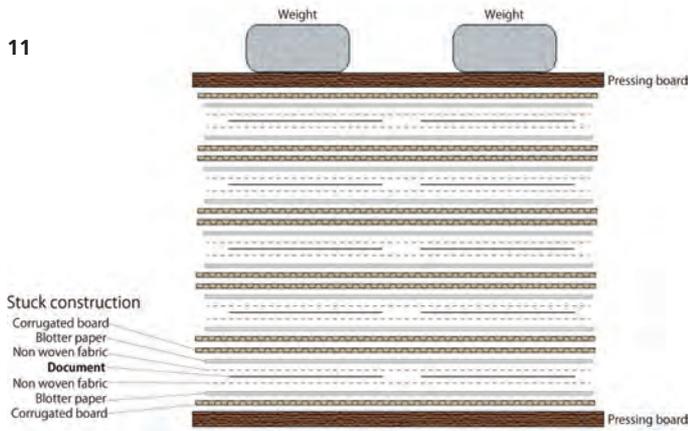


Plastic foam board is placed in a container filled with water. The document is placed between two sheets of mesh screen and laid on the board for washing to remove dirt with brush. By having the mesh screen on both sides of the document and washing the document supported by firm board, anyone can handle and wash wet document safely. After washing, the document with mesh screen is placed in between high-absorbent sponge sheet and pressed lightly to remove water. Then the mesh screen is removed one at a time replacing it with non-woven fabric (Figure 10).

Air streaming drying method

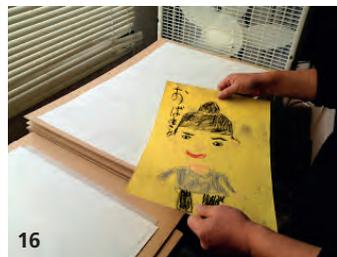
At first, blotter paper is lined onto a corrugated board and a document in between two non-woven fabric is placed on top. Next, the document is covered by another sheet of blotter paper, followed by a corrugated board. The structure is as follows: document in between non woven fabric, non woven fabric with document in between blotter paper, blotter paper in between corrugated board. One set is made for each washed document and the sets are piled up to about 30cm high, with a pressing board on top. In order to secure the board and to give a moderate pressure, weight is placed on top of the board. Electric fan is positioned facing the section of perforated side of corrugated board and turn on to air-dry for two to four hours depending on the type of document (Figures 11-16).

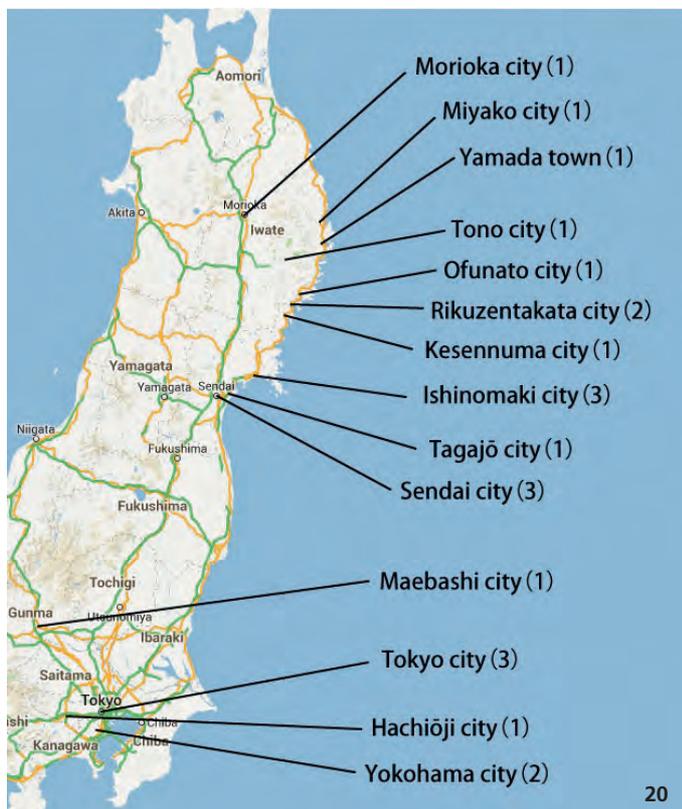
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Introduction of Toubunq system as employment measures

An idea occurred to us in the course of developing this system, which is to provide employment opportunities to local people by introducing the system they can participate in. Consequently the system was actually developed to promote employment. Toubunq system, compared with conventional methods, allows non-conservators to treat document safely, significantly fast and of large volume. One set of system requires three people and they can treat as many as 500 document papers per day. Six people can probably treat almost 1500. This unprecedented treatment method did not exist to this day (Figures 17-19).





However, this system is not a kind of magic. The quantity of affected document is enormous and to have them all recovered will take many years requiring a great deal of manpower. That is why we believed this may lead to employment opportunities for those who lost their jobs locally.

The system was developed with a wishful thinking and fortunately local people in Ofunato city, Ishinomaki city, Rikuzentakata city and others has been carrying out this operation as employees, not as volunteers. The National Archives of Japan receiving government financial support, continues using Toubunq system for recovering local government archives of Northeast areas by employing local people. We hope that this approach will be established well to propagate among affected areas of North East Japan and supporting organizations across the country.

The system has been introduced into 22 locations in Tohoku region and other regions who accepted taking over damaged documents from Tohoku to undertake recovery works by many volunteers and others (Figure 20).

Finally, we would like to thank Mr. Gerhard Banik and Ms. Irene Glück for their paper on Air-Stream Drying method which has been pivotal to developing our recovery system. This paper has been translated into Japanese by us. We would also like to thank for conservators, conservation scientists, librarians, and archivists around the world who provided comments on handling of irradiated materials in Fukushima Prefectures. We received many responses from the U.S. and European countries with words of deep condolence and sympathy. Unfortunately, more than two years after the nuclear power plant disaster at Fukushima, these irradiated paper based record materials have still been left in the contaminated area.

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URL & mail address:

Toubunq: Tokyo Document Recovery Assistance Force <http://toubunq.blogspot.jp/toubunq@gmail.com>

Shiryō Hozon Kizai Co., Ltd.: Archival Conservation & Enclosures Co., Ltd.
<http://www.hozon.co.jp/index.html>
mail@hozon.co.jp

News from IFLA-PAC Regional Center for Korea: Sook-Hyeun Lee appointed as PAC Director

Sook-Hyeun Lee, a director of the Library Service Department, the National Library of Korea, was appointed Director of the IFLA-PAC Regional Center for Korea, successor to Mr Guiwon Lee.

She started her library career in 1979 at the National Library of Korea (NLK). Since then Ms. Sook-Hyeun Lee has been involved in the field of collection management. She was appointed as a director of the Library Service Department in 2011, and one of her responsibilities includes preservation and management of printed collections. She received an M.A. in Library and Information Science from Yonsei University.

From 2006, she was the Director General of the National Library for Children and Young Adults. She dedicated herself in better preservation and library service for children and young adults' materials in Korea. Moreover she launched library outreach programs for the underprivileged children and families from multicultural backgrounds. And, in close cooperation with public libraries and school libraries, she raised the importance of children's reading.

She has been involved in the International Federation of Library Association and Institutions (IFLA): she served as a member of the standing committee on the Acquisition and Collection Section and as a member of the Literacy and Reading Section. She has contributed various articles to the library journals and newspapers focusing on reading education and literacy and she has actively participated in international conferences on library and information services.

Ms. Lee also worked as a member of the National Organizing Committee for the 2006 World Library and Information Congress (WLIC) which took place in Seoul, Korea. She played a leading role in successfully holding the IFLA annual congress and pre-conferences of Acquisition and Collection Development Section and Libraries for Children and Young Adults Section.

She highly values international cooperations and relationships in libraries. Her long-time work with IFLA and many experiences in collection management will lead the Korean center to move one step further.

News: some Asian documentary heritage recommended for inclusion in the Memory of the World Register in 2013

Maha Lawkamarazein or Kuthodaw Inscription Shrines, submitted by Myanmar

The Stone Inscription is a collection of 729 stone slabs on which are inscribed the whole of the Buddhist scriptures whose religious and social significance is important for Asia.

Susrutamhita (Sahottartantra) manuscript, submitted by Nepal

A 1134 year old palm leaf manuscript, considered as the oldest document in the field of Ayurveda medicine, a systematic and formal tradition of healing that became South Asia's principal medical system and has profoundly influenced all cultures surrounding South Asia including Tibet, Central Asia, China, South-East Asia and the Middle East.

Kanjur written with 9 precious stones, submitted by Mongolia

Large collection of over 1600 works on ten great and small sciences of traditional Buddhism (philosophy, technology, logic, medicine, philology, astrology, model dance, poetics, Abhidharma, composition) created by ancient Indian and Tibetan scientists and panditas. It is the world's only copy and an important part of intellectual heritage of humanity, which demonstrates remarkable traditional methods of Mongolians to create books by using precious stones.

Nāgarakrētāgama or Description of the Country (1365 AD), submitted by Indonesia

The Nāgarakrētāgama gives testimony to the reign of a king in the fourteenth century in Indonesia in which the modern ideas of social justice, freedom of religion, personal safety and welfare of the people were held in high regard. It also testifies to the democratic attitude and openness of authority before the people in an era that still adhered to the absolute rights of kingship.

Midokanpakuki: the original handwritten diary of Fujiwara no Michinaga, submitted by Japan

Original diary written by Michinaga and an early transcription of it produced in the second half of the 11th century. Michinaga was the most influential person in the Japanese imperial court from the late 10th to the early 11th century. He achieved great wealth and prosperity with his political and economic power. It is the world's oldest autographic diary and a personal record of a historically important person. It includes vivid depictions of political, economic, social, cultural, religious and international events and matters at the centre of power during a time in the Heian period (794-

1192) when Japan's court culture reached its peak, making it an extremely significant document for both Japanese and world history.

Nanjung Ilgi: War Diary of Admiral Yi Sun-sin, submitted by Republic of Korea

Handwritten journal of Admiral Yi Sun-sin, written during the Japanese invasions of 1592-1598. It consists of seven volumes of notes written almost daily from January 1592 through November 1598, until the days before Yi Sun-si was killed on the cusp of a decisive victory, in the last sea battle of the war. The diary is without equal in world history as a commander's battlefield accounts. Written as a personal journal, it describes in detail the daily combat situations, the admiral's personal views and feelings, observations on the weather, topographical features of battlefields and the lives of common people.

Publications

Historical Perspectives on Preventive Conservation, Edited by Sarah Staniforth, A GCI Publication

Sarah Staniforth (Ed.). 2013. *Historical Perspectives on Preventive Conservation*. Readings in Conservation. Los Angeles: Getty Conservation Institute. 456 pp. ISBN 978-1-60606-142-8 \$70.00

This is the sixth volume to appear in the Getty Conservation Institute's Readings in Conservation series, which gathers and publishes texts that have been influential in the development of thinking about the conservation of cultural heritage. The present volume provides a selection of more than sixty-five texts tracing the development of the field of preventive conservation from antiquity to the present day.

The volume is divided into nine parts: Philosophies of Preventive Conservation, Keeping Things, Early Years of Conservation in Museums, Relative Humidity and Temperature, Light, Pests, Pollution, The Museum Environment and Risk Management, and Future Trends. Writings by such well-known figures as M. Vitruvius Pollio, John Ruskin, and Rachel Carson are complemented by selections from diverse sources including early housekeeping books,

eighteenth-century archivist manuals, and Victorian novels. Other seminal texts include John Evelyn's seventeenth-century tract on air pollution in London and the founding manifesto of the Society for the Protection of Ancient Buildings by William Morris. There is also a wide-ranging representation of recent scholarship, including writings from non-Western traditions such as India and Japan. Each reading is introduced by short prefatory remarks explaining the rationale for its selection and the principal matters covered. There is also a bibliography.

Intended especially for students, this volume will also be of interest to conservators, museum curators, collection managers, and others involved in caring for collections and objects.

Sarah Staniforth is museums and collections director at the National Trust in London.

Purchase at: http://www.getty.edu/conservation/publications_resources/books/historical_perspectives.html

Preservation, Digital Technology & Culture (PDT&C) Released; Long-established Academic Journal Gets New Title, Editor-in-Chief, and Focus

The first issue of *Preservation, Digital Technology & Culture* was recently published by De Gruyter Saur. With the new editor-in-chief, Dr. Michele V. Cloonan, a long-time preservation scholar and educator, comes a new title, and a stronger focus on the intersection between technology and culture. The journal plans to focus on preservation in several types of heritage institutions, with an increased emphasis on international activities. The new editorial board also reflects a greater international focus of the journal.

Originally established in 1972 as *Microfilm Review*, the journal has tracked the progression of projects and technical developments that contributed to preservation in libraries and archives. Though the journal originally emphasized microforms, the focus has shifted over the past forty years to embrace the proliferation of new technologies.

In its new manifestation, *PDT&C* treats the practical and theoretical issues of preserving digital content. It will provide a timely forum for refereed articles, news, interviews, and field notes from around the world.

The first issue under the new name, volume 42, issue 1, contains articles concerning the contemporary preservation landscape, digital imaging error in HathiTrust, the preservation of data about the Occupy Movement, and social reading. De Gruyter Saur is the publisher.

We invite your contributions. Contact the editor at michele.cloonan@simmons.edu. More information and free online access is available at www.degruyter.com/view/j/pdte.

Les archives dans la cité, Architecture d'archives, 2004-2012

Édité par le Service interministériel des Archives de France, entre autres par France Saïe-Belaïsch, qui a contribué à maintes reprises aux activités du programme PAC, notamment à travers l'article «Sustainable Development and Archives Buildings in France», publié dans le numéro 44 de la revue *International Preservation News*.

Avant-propos par Aurélie Filippetti, ministre de la Culture et de la Communication, et introduction par Hervé Lemoine, directeur, chargé des Archives de France. ISBN: 978-2-911601-54-5

Ce nouveau livre sur les bâtiments d'archives en France témoigne d'un élan constructif toujours renouvelé pour ce type d'édifices car, soit les plus anciens sont devenus obsolètes, soit leurs espaces de conservation sont arrivés à saturation. Il apporte des réponses à des questions récurrentes souvent posées sur le coût d'un bâtiment, les surfaces des différents espaces, les matériaux employés, en présentant de nombreuses constructions neuves ou des extensions avec réhabilitation. On trouvera également, en annexe, les règles réactualisées pour la construction ou l'aménagement d'un bâtiment d'archives. Outre ces éléments techniques, il propose une présentation dynamique et critique des évolutions architecturales et techniques intervenues ces dernières années, tant du point de vue des principes constructifs et des normes de conservation que des usages renouvelés des bâtiments d'archives, avec la transformation de leurs publics et l'élargissement de leurs missions, sans oublier la prise en compte du développement durable.

This new book on archival buildings in France bears witness to the spirit of constant renewal and improvement in this type of construction, either because older buildings have become obsolete or because records storage facilities have reached the saturation point. It brings new answers to oft-repeated questions – about building cost, surface areas of different facilities and the choice of construction materials – through the case study of a number of new buildings or extensions accompanied by renovation. The reader will also find in the appendix up-to-date regulations for the construction or fitting-out of a new archives building. Beyond these technical details, this book propose a dynamic and critical analysis of the recent architectural and technical developments – changes in building and preservation standards, new uses for archival buildings, a changing public, an even-broader mission for archives, not to mention the increased concern for sustainable development.

Events

Announcements

About IFLA 2013

International Summit of the Book, "A Book By Any Other Name", 16 August, 2013, Singapore

The National Library Board Singapore is pleased to welcome the International Summit of the Book, which will take place on 16 August 2013, in Singapore, with the theme "A Book by Any Other Name".

The Summit brings together thought leaders in academia, libraries, culture and technology to discuss the future of the book. The shift from page to pixel is merely one of the issues to be discussed during this summit. Other questions to be explored include:

- How will stories be told?
- How will the form of the book evolve?
- How will reading, writing and publishing change?

Registration

The 2013 Summit is free to attend, but registration is by invitation only.

More information at: <http://blogs.nlb.gov.sg/booksummit2013>

IFLA WLIC Conference 2013, "Future Libraries: Infinite Possibilities", 17-23 August 2013, Singapore

The 79th International Federation of Library Associations and Institutions (IFLA) World Library and Information Congress will be held in Singapore, from 17th to 23rd August 2013.

Full programme and booking details at: <http://conference.ifla.org/ifla79/>

Several sessions will be devoted to preservation and conservation, such as:

- "Preserving for the future: integrating physical and digital preservation", organized by the Information Technology with Preservation and Conservation, Rare Books and Manuscripts and Library and Research Services for Parliaments Sections, 20 August 2013, 13:45 - 18:00.

<http://conference.ifla.org/ifla79/calls-for-papers/preserving-for-the-future>

- "Cultural Heritage Preservation in Asia: Innovation in Cooperation", organized the IFLA Core Activity on Preservation and

Conservation (PAC), 21 August, 2013, 13:45 - 15:45, with the following programme:

- Introduction: Challenges of cooperation in Preservation in Asia
Christiane Baryla (Director, IFLA PAC, Paris, France)
- Preserving the digital culture of two nations: National Library of New Zealand and National Library of China work towards a shared perspective on digital preservation
Bill MacNaught (National Librarian, National Library of New Zealand, Wellington, New Zealand) and Sun Yigang (Assistant Director General, National Library of China, Beijing, China)
- World Digital Library in Asia
John Van Oudenaren (Director, World Digital Library, The Library of Congress, Washington, USA)
- Keep this loose bond for disaster preparedness and response: innovation in cooperation after the Great East Japan Earthquake
Naoko Kobayashi (IFLA PAC Regional Director, PACASIA, Tokyo, Japan)

Contact: christiane.baryla@bnf.fr

More information in IFLA Annual Conference website: <http://conference.ifla.org/ifla79/programme-and-proceedings>

IFLA WLIC 2013 Satellite Meeting, "Creating the future: preserving, digitizing and accessing all forms of children's and young adults' cultural heritage", 14-15 August, 2013, Bangkok, Thailand

The conference is organized by IFLA Section Libraries for Children and Young Adults and IFLA Core Activity on Preservation and Conservation (PAC), in collaboration with the Thai Library Association, Thailand Knowledge Park and the Thai Section of IBBY. The conference will be held in Bangkok (Thailand) on August 14 and 15, 2013, just before IFLA Conference in Singapore.

Children's and young adults' culture exists in multiple forms and media, from nursery rhymes and oral storytelling to videogames, from printed books to eBooks... Libraries play a key role in preserving this cultural heritage and in giving access to it. How are they doing this? What must they do now so that this heritage is not lost and cultural diversity is preserved? How are they giving young people access to their cultural heritage?

Pre-conference Venue
The Arnoma Hotel Bangkok, Thailand

Expected audience
The expected audience is likely to include children and young adults' librarians, National Libraries, libraries serving indigenous people, librarians working in audiovisual and multimedia, storytellers and other performers for children, other professionals working on children's and young adult's reading, students and university professors and partners of libraries in joint reading promotion programmes.

Registration
The registration rate before July 10, 2013 is 4,000 Baht (Thai Currency) per person.

Programme
The full programme is on line at: <http://ifla-bangkok2013.tkpark.or.th/agenda.html>

Website
<http://iflabangkok2013.tkpark.or.th/index.html>

Sponsors
IFLA Section Libraries for Children and Young Adults
Chair: Viviana Quiñones, viviana.quinones@bnf.fr
IFLA Core Activity on Preservation and Conservation (PAC)
Director: Christiane Baryla christiane.baryla@bnf.fr

IFLA WLIC 2013 Satellite Meeting, "Disasters and Libraries: Prevention, intervention, reconstruction of the paper and digital collections and infrastructures after a disaster", August 14-15, 2013, Singapore

The main purpose of this satellite conference is to present the solutions found in the libraries and archives to deal with disaster focusing on the use of the new technologies to limit the damages, the role of the regional and international cooperation for prevention, intervention and reconstruction with a special part dedicated to the Asia Pacific situation.

This satellite meeting will have a half day workshop on how the nanotechnologies can help to deal with disasters in libraries and archives. It will also have a panel discussion around the register@risk section project in relation with the IFLA key initiative 4 and the international cooperation during and after disasters.

Venue
Nanyang Academy of Fine Arts, Singapore

Registration
Admission is free, but a registration form has

to be completed and sent back to Danielle Mincio (Danielle.Mincio@bcu.unil.ch).

Programme
Detailed programme available at: <http://www.ifla.org/events/singapore-2013-satellite-meeting>

Sponsor
IFLA Preservation and Conservation Section
Chair : Danielle Mincio danielle.mincio@bcu.unil.ch

iPRES 2013, 10th International Conference on Preservation of Digital Objects, 2-5 September 2013, Lisbon, Portugal

The tenth annual iPres conference on digital preservation will be held at the IST (Lisbon Technical University) in the Congress Center of the campus Alameda.

- Topics
- Innovation in Digital Preservation;
 - Systems Life-cycle;
 - Governance;
 - Business Models and Added-value of Digital Preservation;
 - Theory of Digital Preservation;
 - Case Studies and Best Practices;
 - Training and Education...

More information on the programme and registration at <http://ipres2013.ist.utl.pt/>

Local Organization
INESC-ID Lisboa
Técnico Lisboa

Sponsors
Data Archiving and Networked Services
Biblioteca nacional de Portugal
University of Toronto, Faculty of Information

Contact: ipres2013@ist.utl.pt

British Library Preservation Advisory Centre Conference, "Evolution or revolution? The changing face of collection care", 14-15 October 2013, British Library, London

The British Library Preservation Advisory Centre, in consultation with IFLA, is hosting a two day conference in October 2013 examining the nature and perception of the collection care department in the modern and increasingly digital environment. In particular, are the career paths of collection care practitioners sign-posted well enough

to attract the right skills and offer the right opportunities to develop, lead and engage? Collection care departments are operating in increasingly dynamic environments – not only in respect of resources, but also of technology, information, learning and publishing. Technology is constantly defining and re-defining trends in information and content – what is created and how; how it is acquired; and how it can be accessed and experienced. For collection care departments, there are new technologies to understand, new risks and benefits to be weighed up, new approaches to be learned; and yet there remain vast, physical collections to be protected, preserved and cared for. We invite you to join us to discuss the effect of such changes on collection care strategy and practice – now and in the future. What does an effective collection care department actually look like in an increasingly digital environment? What is its purpose, its responsibilities; its business model? Does this represent an evolution or a revolution in practice?

More information on the programme and registration at: <http://www.bl.uk/blpac/evolution.html>

Contact: sandy.ryan@bl.uk

**International conference,
“Cultural Heritage Conservation
Science & Sustainable
Development :experience,
research, innovation”,
23-25 October 2013, Paris, France**

The Centre de recherche sur la conservation des collections (CRCC) will organize an international conference about cultural heritage conservation science and sustainable development. This present-day field has undergone much development recently; furthermore, it has been developing at a very fast pace since the late 20th century. It is now imperative to take ecological, economic and social aspects into consideration when looking at the solutions that scientific research brings today. By taking these new obligations into account, one can re-evaluate a certain number of best-practices and develop new studies in the field of conservation.

Topic

Through the use of examples and case studies, this conference will present the latest developments in conservation as well as in preservation, such as:

- Environment and climate
- Materials & conservation treatments
- Material conservation of intangible heritage
- Cultural Heritage and communities

Programme

Preliminary programme available at: <http://crcc50.sciencesconf.org/>

Venue

Grand Auditorium BNF - François Mitterrand

Languages

English and French (simultaneous translation)

Registration

Registration deadline: 15 September 2013
Register here: <http://dr03.azur-colloque.cnrs.fr>

Contact

Contact chairs at crcc50@sciencesconf.org
Website: <http://crcc50.sciencesconf.org/>

Sponsors

ARSAG (Association pour la recherche scientifique sur les arts graphiques)
LRMH (Laboratoire de recherche des monuments historiques)

Report

Hurricane Sandy and the Art of Cultural Recovery

“If the cultural industry has a SWAT team for visual art, it is the AIC’s Collections Emergency Response Team.”

Pia Catton, *Wall Street Journal*, Nov. 18, 2012

Hurricane Sandy struck the American Northeast at the end of October, 2012 and combined with other weather patterns and high tides to form a “Super Storm”. It caused an enormous amount of damage and loss of life. The storm was equally disastrous for the arts and culture community. Requests for assistance quickly came in through the AIC Collections Emergency Response Team (AIC-CERT) hotline and from Alliance for Response New York City (AFRNYC). Many collecting institutions throughout the region were affected, but small galleries and individual artists were especially hard hit in the low-lying neighborhoods of New York City.

AIC-CERT: the “SWAT¹ Team for Art”

Before the storm hit, AIC-CERT had already begun preparations. Media releases on October 26 encouraged emergency preparedness and provided institutions with the AIC-CERT hotline number (202-661-8068). As of December 4, 2012, FAIC’s Collections Emergency Response Team (AIC-CERT) hotline had received over 120 requests for assistance, and all have been followed up with appropriate phone, email, and in-person visits by volunteers. Fourteen AIC-CERT members from across the country responded to the initial calls, organized by Beth Antoine (the AIC-CERT Coordinator), who was working overtime to meet the demand. In addition, FAIC contracted with Cynthia Albertson, a conservator at MOMA, to coordinate the many professionals in the New York area who wished to assist. Twenty-eight local volunteers worked with AIC-CERT in the initial response. Some of the larger projects included the Martha Graham collection; individual artists at the Westbeth Artists Residence; and various artists and galleries in Chelsea and Brooklyn. Multi-day power outages in lower Manhattan and other neighborhoods, subway line closures, and area gas rationing complicated the response.

The Cultural Recovery Center

To address the need for further assistance, FAIC opened the Cultural Recovery Center (CRC), an 18,000 square foot space in Brooklyn, to provide space, equipment, supplies, and volunteer expertise to assist artists and owners of damaged works to clean, decontaminate, and stabilize their works. FAIC took possession of the space on December 10, and begin providing services to its first artist on December 13. Opening the facility not only required physical preparation, but administrative support as well. Policies and procedures for the facility were developed; phone numbers and email addresses organized, and so on. The Studio Manager, Anna Studebaker, former-

1. SWAT (“Special Weapons And Tactics”) is a commonly-used proper name for law enforcement units, which use military-style light weapons and specialized tactics in high-risk operations.

FAIC Responds to Cultural Disasters

Founded in 2007, the AIC Collections Emergency Response Team (AIC-CERT) is comprised of conservators and other museum professionals trained to respond to disasters affecting cultural institutions.

Managed by the Foundation of the American Institute for Conservation (FAIC), AIC-CERT volunteers have provided assistance and advice to dozens of museums, libraries, and archives in the wake of natural disasters including tropical storms, floods, hurricanes, and even the 2010 earthquake in Haiti.

In 2007 and again in 2010, FAIC received funding from the Institute of Museum & Library Services to support an advanced training program that resulted in a force of 107 “rapid responders” adept at assessing damage and initiating salvage of cultural collections after a disaster has occurred.

ly manager of the objects conservation lab at the Metropolitan Museum, began work on December 18. She coordinates the work at the CRC, including scheduling artists, signing volunteers in and out, making sure volunteers are working safely, maintaining records of the work, ensuring supplies are in stock, and keeping in communication with the volunteer coordinators and FAIC staff. The overall project is managed by Eric Pourchot, FAIC Institutional Advancement Director.

In the first month of operations, the CRC worked with seven artists on 555 works, including paintings, works on papers, photographs, textiles, and multi-media works. Twelve conservators volunteered 22 days of time working with artists at the Center.

Several artists are still in the queue to bring to the Center their works which are at risk because of toxic deposits and potential mold growth. The Cultural Recovery Center will remain open through March 1st in order to handle the requests for services.

This would not have been possible without

Initial funding for the response and recovery efforts, including initial costs for the Center, was provided by a leadership gift to FAIC from Sotheby's. A grant from the Andrew W. Mellon Foundation allowed the Center to remain open through March 1. Industry City at Bush Terminal provided the space rent-free. Rapid Refile set up containment tents and air scrubbers to prevent the spread of mold from incoming objects

to cleaned objects. Collector Systems has provided free use of its web-based collection management system. The Smithsonian Institution and a grant to Heritage Preservation from the New York Community Trust, as well as support from TALAS, have enabled purchase of supplies. The Center has also been outfitted with supplies from Materials for the Arts, a creative reuse program managed by the New York City Department of Cultural Affairs. Additional donations to FAIC have come from PINTA, The Modern & Contemporary Latin American Art Show; Tru Vue; Aon Huntington Block Insurance; Aon Foundation; members of AIC; and others. The American Museum of Natural History and MoMA have also provided key in-kind support for recovery efforts and establishment of the CRC.

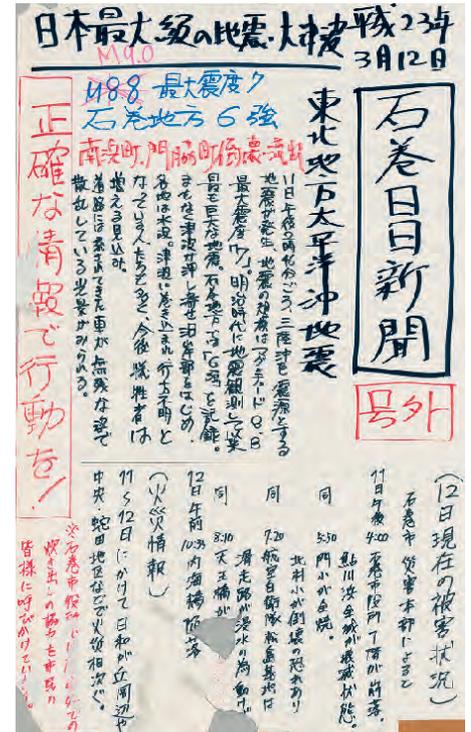
AIC-CERT Remains on Alert

Even though the response for SuperStorm Sandy was unprecedented for FAIC, AIC-CERT members continued to be ready to respond to other emergency situations. During December and January, even while staffing the CRC in New York City, AIC-CERT members assisted the Osage Historical Society in Oklahoma, which suffered from soot damage after a fire, and responded to soot damage from a furnace puff-back at the Oakham Historical Museum in Massachusetts.

More information about FAIC, AIC-CERT, and the Cultural Recovery Center can be found at www.conservation-us.org/disaster or by sending an email to info@conservation-us.org

**"Newspaper in Crisis",
paper presented at the IFLA 2012
Newspaper Pre-Conference,
9 August 2012, Mikkeli, Finland**

By Naoko Kobayashi, Senior Librarian, National Diet Library, Director, IFLA PAC Regional Center for Asia



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On the screen, you can see a handwritten newspaper published on March 12, 2011, the day after the Great East Japan Earthquake. This "Ishinomaki Hibi Shinbun" (*Ishinomaki Daily Press*) is the only newspaper that the National Diet Library has digitized until now.

Ishinomaki is a name of a town which was severely damaged by the earthquake and tsunami. *Ishinomaki Daily Press* is a daily local newspaper. It was first published 100 years ago. When the Great East Japan Earthquake struck, the office building was blacked-out and flooded, the rotary press was under water. Everything was damaged but some rolls of blank paper survived. Members of the IDP vigorously produced an extra edition using the blank paper.

They published a wall newspaper, handwritten in marker-pen, with the help of flashlights for six days, from 12th to 17th March. They posted the wall newspapers on the walls of six shelters to inform the survivors of the lifeline situation and other necessary information for their survival. On March 18, they re-started printing and delivered newspapers to the people in the shelters. They never stopped publishing their newspaper.



Deeply impressed by this story, the Newseum in Washington D.C. asked them to donate seven sheets of the wall newspaper. The Newseum promised to preserve them eternally. As the IDP kindly lent us the wall newspapers published from 12 to 17 of March 2011, we have digitized them and now you can see them on the website of the National Diet Library.
<http://dl.ndl.go.jp/info:ndljp/pid/2623226>

Report "Digital Library of Today and Challenges of Tomorrow", 24-25 January 2013, Jagiellonian Library of Krakow, Poland

By Philippe Vallas,
Deputy Director, Preservation department,
BnF, Paris

The Jagiellonian Library of Krakow, partly responsible for the legal deposit in Poland, keeps about five million of documents, including very rich patrimonial collections. 200 librarians, archivists and digitization experts attended the conference, which was organised as a closing event for the program building the "Digital Library Jagiellon" (2010-2013).

The construction of the Jagiellon/BNJ digital library, and the conservation strategy elaborated in this context, were detailed by several speakers: projects of digitization were elaborated at the end of the catalogue's computerisation (1994). A first project sadly failed, which was launched in the framework of a national cooperation; each of the main Polish institutions choosing to develop its own digital library. Since then the cooperation was followed up for the documents selection and the formats as the computing Centre in Poznan is also a shared digital repository. Moreover, BJ cooperated with convents in medieval manuscripts digitization.

The budget – about 2 million Euros – is issued from the European Union. The preservation of precious and deteriorated collections is the strategic priority; it consumes the biggest part of expenses and involves 40 of the 45 people working on the project.

Priority was given to the newspaper collections (80% of pages, and about 2000 volumes) and to the Library's treasures (like Beethoven and Copernic's manuscripts). Last but not least, the BNJ hosts several thousands of theses, audiovisual supports.... Digitization was mainly made in situ by the BNJ. The workroom hosted 5 scanners A0 to A2 (from Zeutschell, looking to give satisfaction). They work 12 hours per day, (3 times x 4 hours – the BJ noticed a lack of productivity beyond 4 hours of work). The BJ purchased also a COM production system and most of the digital files were preserved as safety microfilms were made and stored in situ (except for the files duplicating iconographic documents in colour). A team of 10 people, located in the same space, do the postproduction (linked to the scan operators). The catalogue's data (in Marc 21) were automatically converted in Dublin Core on the occasion.

The digitization, is made in TIFF format, for archiving (3 copies are made on magnetic tapes and stored in 3 different places). To be put on-line, files are compressed in DJVu, a format considered better than JPEF 2000 for the image quality, the speed of uploading, and the lighter weight of data; it needs still to be adapted to the mobiles. The whole line is under "D Libra" software.

This digital production line is only one part of a very comprehensive set of preservation measures concerning the documents:

- for every document, a computerized survey is made detailing its physical aspect before digitization; a biological activity research is even led if necessary;
- if needed, a minimal preparation/repair is made;
- after their digitization, acidic documents are all de-acidified in-house, and they may be re-boxed (permanent cardboard boxes at the requested format);
- some precious documents could be more heavily processed: cleaning, restoration (repairing of many passe-partouts).

The BNJ workshop (called « Paper Clinic ») is highly supporting this project which "conservation" part is an explicit and priority one. Alexandra Szalla-Kleeman, Head of Conservation Department, was happy to

observe that this programme allowed a better evaluation of the state of conservation of the most damaged and precious collections of the library.

The end of the program was scheduled in April 2013, with 190 000 digital documents. This digital library is the most important in Poland. However, the BJ will have to go on more slowly because of cost-saving measure.

Jasper Faase (KB, La Haye) presented digitization in Nederland: an impressive effort was conducted through public-private partnerships and the national program *Métamorphoze*: for 4 years (2009-2013), about 10% of Dutch patrimonial funds were digitized, half of them by Google; the management of digital collections is the new challenge, through a national (centralized digitization) and European (research) cooperation; the two collections maintenance costs could be accepted by limiting efforts for physical conservation. This policy seems to be in opposite to the BJs.

Philippe Vallas presented BnF strategy and explained the institution's policy which combines digitization and physical preservation of heritage documents.

A visit of the ten-years-old JL mass deacidification unit (Bookkeeper system) was organised. It treats books and newspapers and could be combined with a Nieschen machine that allows simultaneously deacidification and reinforcement by re-sizing of the sheets. Since the end of the national program (2008), the production has had to decrease for economic reason (from 30 to 15 tonnes of documents per year).

Thanks to a lot of conferences and training organised during the program life, deacidification is a treatment well-known by Polish librarians and archivists, and many institutions are BJ customers (for instance, Archbishopric of Krakow has requested the treatment for Cardinal Wojtyła's personal archives).

More information at
<http://www.bj.uj.edu.pl/>

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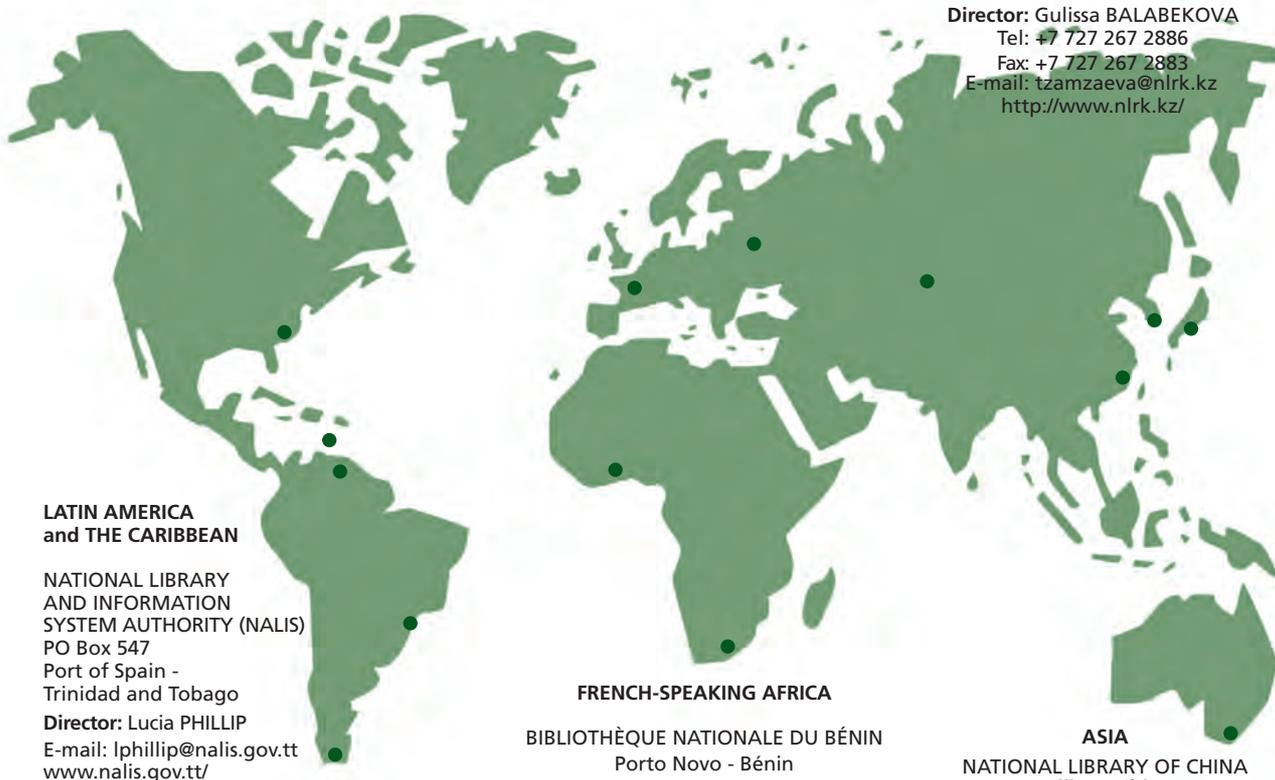
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