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Special Theme: Conservation Science

In this issue, four authors introduce a project *Conservation Science Research on the Establishment of Sustainable Collection Management and Museum Environment*. Naoko Sonoda led this inter-university research project and invited participants to contribute here. Her introductory remarks follow.

Sustainable collection management and museum environment

Naoko Sonoda

National Museum of Ethnology

The project “Conservation science research on the establishment of sustainable collection management and museum environment” is one of the inter-university research projects carried out at the National Museum of Ethnology (Minpaku). These are projects in which Minpaku collaborates with researchers from different disciplines and institutions. In this project, there were 18 research members and one observer, with 12 members from outside Minpaku. The project was originally scheduled for October 2017-March 2021, but a two-year extension was granted due to COVID-19.

The international symposium “Preservation of cultural heritage in a changing world” held at Minpaku in October 2017 was the first symposium held within the framework of Minpaku’s academic forum series ‘Research Trends Round-table’ that started in FY2017. The symposium was organized by members of the Department of Advanced Human Sciences. At the same time, it was the first project meeting and can be considered a starting point for rethinking the role of conservation in museums and other cultural institutions today.

Conservation is guided and constrained not only by social and cultural factors, but also by environmental and technological issues. The project aimed to address new issues common to cultural institutions in Japan and abroad, and to

lay a groundwork for sustainable management of museum collections and indoor climate in ways that meet actual social needs. Subjects included museum collections and audio-visual materials. We also focused on presenting practical conservation conditions and guidelines applicable not only to large-scale museums but also to smaller museums and private collectors with limited facilities, human resources, and budgets.

During the project period, we presented and discussed a wide range of topics based on our own expertise and awareness of issues, while also keeping an eye on trends overseas. Topics treated included museum environment surveys (pest trap investigation, temperature/relative humidity monitoring), insecticidal treatments that do not use chemical agents, pest control measures in postwar Japan, problems faced by small-scale institutions, condition surveys of

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motion picture films, damage caused by the earthquake in Northern Osaka and countermeasures, and examples of sustainable storage facilities in Denmark and the Netherlands.

An online roundtable entitled “Countermeasures for COVID-19 in museums” was held in August 2020, in collaboration with the Japan Society for Conservation and Restoration of Cultural Properties. It consisted of case reports from Minpaku, Nara National Museum, Kyushu National Museum, Tokyo National Museum, Tokyo Metropolitan Museum of Photography, and Hitotsubashi University Center for Historical Social Science Literature, all of which were institutions that had experienced closing and then opening under COVID-19. The edited video was made available on the society website for a limited time and was accessed by Japanese researchers overseas.

Some of the research findings of the project have been already published by Minpaku: *Conservation of Cultural Heritage in a Changing World* (SES102) in 2019, and *Sustainable Collection Management* (SER155) in 2022.

The first volume (SES102) presents a deepening of content presented at the aforementioned international symposium. Society has undergone major transformations in the last 30 years, and the world of cultural heritage is also facing new changes. Changes in environment and media are highlighted. In “Part I: New Environmental Challenges,” a keynote speech on sustainable preservation is followed by specific case studies of the Kyushu National Museum and Minpaku. Further presentations introduce the conservation of photographs in Laos and, a mobile pest control system applicable even to small-size institutions. A supplement to Part I presents the insecticidal treatment facilities at Minpaku. In “Part 2: New Media Changes,” discussion of the changing role of conservation is followed by case studies on continuity and change in the digital era, preservation of digital motion pictures using photographic film, and the utilization of digital images. A supplement to Part II presents four examples of the use of images in Minpaku’s exhibition galleries.

In the second volume (SER155), the current state of sustainable collection management and indoor climate control in museums is introduced with specific case studies. The authors examine possibilities and challenges that emerge in a social context where environmental considerations are becoming more and more important. In “Part 1: Museum Environment,” the authors

analyze actual conditions of museum environment at Minpaku, the Imperial Household Agency Shosoin Repository, the Nara National Museum, and at one small-scale institution, the Minamata Museum of History and Research. In “Part 2: Preservation and Transmission of Motion Pictures and Photographic Films,” topics include efforts to protect photographic works following renovation of the Tokyo Metropolitan Museum of Photography, surveys of the preservation state of motion picture films, and preservation issues in the digital age. In “Part 3: Biological Damage Countermeasures in Museums,” authors present a history of the introduction and establishment of fumigation in museums in postwar Japan, insect trends at Minpaku, X-ray imaging for detecting wood-boring pests, and a training case study at the Kyushu National Museum. Insect damage, once it occurs, can cause extensive damage, so in “Part 4: Biological Damage Prevention Manual for Museums,” we introduce methods that can be applied and practiced even by small-scale institutions and/or private collectors. In “Part 5: Toward Sustainable Collection Preservation,” sustainability in museums is discussed from two perspectives: museum indoor climate control and pest management.

Papers on the damage and response of Minpaku after the earthquake in Northern Osaka, and on measures for COVID-19, were also published in the *Bulletin of the National Museum of Ethnology*, in volumes 44, issue 1 (2019) and 47, issue 4 (2023), respectively.

In this newsletter, the special theme focuses on environmental issues that have become an unavoidable part of conservation practice in museums, particularly in relation to ozone layer protection and global warming. This is followed by a look at technological impacts in the transition from analog to digital media.

The need for global ozone layer protection and subsequent restrictions on the uses of ozone-depleting substances triggered a fundamental review of pest control measures in Japanese museums. In Japan, a mixture of ethylene oxide and methyl bromide was widely used for gas fumigation of cultural properties, since the late 1970s. When methyl bromide became a regulated ozone-depleting substance under the Montreal Protocol, its production in developed countries was to be phased out by the end of 2004. This led museums to begin developing collection management methods rooted in preventive

conservation rather than the short-sighted approach of gas fumigation after damage has occurred (or “just in case” it might occur). Emphasis has shifted to implementation of Integrated Pest Management (IPM). Our contributor Rika Kigawa presents a concrete example of how the Kyushu National Museum has faced the challenges after phasing out use of a fumigant. She describes implementation of IPM policies, use of non-chemical insecticidal treatments for incoming objects, and meetings, seminars and courses for internal staff and for a large audience.

Global warming has prompted museums to make efforts to reduce greenhouse gas emissions. Our country (Japan) relies on fossil fuels for most of its energy needs, including electricity and gas. Energy consumption is directly linked to greenhouse gas emissions, which cause global warming. Museums are faced with the problem of how to reduce energy use while taking care to conserve collections properly. Sustainable solutions are needed. With this perspective, Kaoru Suemori takes up the principle of passive climate control using geothermal heat. He describes low-energy storage methods in Denmark and the Netherlands (two leading countries for such methods), and the example of a Japanese museum.

In terms of technological challenges, the dramatic transition from analog to digital media has brought new preservation concerns. The weakness of digital technology turned out to be in long term preservation, which is the primary goal for most image collections. With the rapid evolution of digital technology, data migration

and budgeting have become urgent and fundamental issues. As digital technology evolves, a wide variety of data is generated, so it is important to know what data to preserve. In addition, in order to reduce preservation costs, it is necessary to consider how stored data will be used. Katsuhisa Ohzeki warns that special efforts are needed to digitize cultural assets recorded on film, and to make long-term preservation of the digitalized assets a national commitment in Japan.

The social context and technologies surrounding conservation science are changing. At the beginning of the project, a major challenge was how to maintain the museum environment in a sustainable manner while taking environmental issues into account and giving due consideration to the conservation of collections. This problem has been exacerbated in recent years by soaring global energy prices. The COVID-19 outbreak in 2020 presented a new challenge of how to properly manage collections while prioritizing infection prevention measures. On the technology side, we are living with the consequences of the dramatic shift from analog to digital media, which generates challenges never experienced before.

Overall, the inter-university research project reviewed here provided an opportunity to share experiences and deepen each researcher’s knowledge of problems, approaches and solutions. Although the project ended in March 2023, each of us continues to conduct research to solve the challenges facing conservation science, from each of our respective standpoints and in new collaborations.

Pest management after phasing out a common fumigant – challenges for museums

Rika Kigawa

Kyushu National Museum

In 2005, the use of a common fumigant, methyl bromide, was banned according to UNEP (United Nations Environment Programme) Montreal protocol, as it is known to

be an ozone layer depleting agent. The fumigant had been used extensively to eradicate insect pests in museums, archives, libraries and historic buildings in Japan. Previously almost

Rika Kigawa graduated from the faculty of science, the University of Tokyo and received her PhD in 1993. She started working at the National Research Institute for Cultural Properties, Tokyo, in the area of biodeterioration and countermeasures such as non-chemical treatments to eradicate insect pests. She also appraised pest control treatments in terms of efficacy and with attention to adverse effects on materials, and has been engaged in large-scale monitoring of wood-boring anobiids (furniture beetles) in structures at the Nikko World Heritage Site, where she helped develop humidified warm-air treatments for historic buildings. In 2015, she joined Kyushu National Museum, and her team is responsible for environmental management including Integrated Pest Management (IPM).

every museum, archive, library had a “fumigation chamber” for the use of this fumigant. So it was quite natural that many people had doubts at that time, and asked, “Is it possible to manage with this new rule?” Japan has a very humid and warm climate, and severe damage in cultural objects has often been caused by museum pests such as termites, anobiids, silverfish, cockroaches and so on.

When we had to face the phasing out of methyl bromide use, a team comprised of the Agency for Cultural Affairs, Japan, the National Research Institute for Cultural Properties, Tokyo (Tobunken), and experienced curators and conservators from several museums cooperated to develop ways to deal with the new rule. As a start, in 2001, the Agency for Cultural Affairs published “a handbook of daily practices to prevent pest damage to cultural properties”. This was an outcome of our collaborative discussions. (The present author was involved in making the handbook as a Tobunken staff member at that time). In the handbook, the importance of Integrated Pest Management (IPM) was emphasized, and examples of daily practices to prevent pest damage were introduced. As a matter of fact, such daily practices already existed and were adopted in our country historically, so the concepts might have been rather familiar for older people. But the handbook also explained IPM policies in a systematic manner, and new measures for insect eradication were introduced.

Thinking about another aspect of the problem, methyl bromide is very toxic for people. If leakage happens during fumigation, it can be fatal. There had been several serious accidents previously. The fumigant can also react with artifact components such as proteins and the chemicals in old blueprints. Converting to safer methods was necessary worldwide, for objects and people.

The National Museum of Ethnology was one of the pioneer museums that adopted the new pest management policy. The Museum established insect monitoring with sticky traps quite early, and was the first museum in Japan to install a carbon dioxide treatment tent to eradicate insects in ethnological objects. Kyushu National Museum opened in 2005, the year that methyl bromide phased out, and was another pioneer museum implementing IPM methods in Japan. The most basic strategy adopted was “thorough house-keeping,” that is, making the environment very clean and removing

any food sources for insects inside the museum.

Staff of the Museum Science division are responsible for IPM activities at Kyushu National Museum. Treatment options for incoming objects include oxygen scavengers, a nitrogen treatment chamber (first photo), carbon dioxide tent (second photo) and the use of freezers at -30°C (a small freezer indoors and a large outside freezer room) (third photo). A moisture-controlled heating strategy was also adopted to treat a festival float infested by wood-boring insects (see photo next page). A heating chamber set at 60°C is used for regular treatment of the cushions employed to protect objects during transportation.



Nitrogen treatment chamber (Rika Kigawa, 2019)



Carbon dioxide tent (Rika Kigawa, 2016)



Inside of walk-in freezer (-30°C) (Rika Kigawa, 2016)



Using humidified warm-air to heat the wooden base parts of a festival float infested with wood-boring insects (60°C) (Rika Kigawa, 2015)

Several years ago, our trap monitoring indicated an escalation in the numbers of silverfish. In order to manage the situation, we used every countermeasure we could think of. Food waste boxes were replaced by metal containers with tight-fitting lids. Corrugated paper protective sheets in the museum were replaced by sheets with insect-resistant materials. Floor tiles were removed for deep cleaning, and we implemented regular deep cleaning of spaces under shelves in storerooms, and under and inside the exhibition cases. Pyrethroid emulsion was injected or applied with brushes along floor and wall boundaries. By removing the insects' food sources, the numbers caught in traps decreased significantly year by year and are now almost back to the initial level.

Our museum holds a public IPM seminar for a large audience followed by a two-day IPM course with exercises and discussions for about 30 participants. We also created opportunities for sharing awareness among other staff at our museum, including curatorial staff and management. The IPM courses for internal staff have been held annually since 2016 and talks for volunteer and cleaning staff, and others such as the

'girls' archaeology' group, are held in a fun-like atmosphere.

Once a month, divisional 'Environment working group' meetings are held with about 20 staff from the sections for curating, facility management and general management. During these meetings, IPM matters are regularly reported and policies related to environmental control in galleries and storage are discussed. A synopsis of the agenda and discussion is reported in curatorial and management meetings in order to share the findings.

Our museum, like other museums in Japan, no longer uses methyl bromide. As alternative countermeasures, many efforts are being made, and honestly speaking IPM is not an "easy" practice. Even so, we now know that we can manage pest problems with keen dedication and great cooperation by all the staff and people involved.

Using geothermal heat to control indoor climate for museum storage

Kaoru Suemori

National Museum of Ethnology

Kaoru Suemori is associate professor at the National Museum of Ethnology, Japan. He specializes in conservation science and has conducted empirical research on museum collection management. In addition, he has studied mural paintings drawn in the Buddhist grottoes of China by applying optical methods to analyze drawing patterns and visual effects of the images. He has also participated in archaeological research in Egypt, Bahrain, and Uzbekistan.

As the issue of global warming becomes apparent, the energy used to control the indoor climate of museums has also received attention. For many museums, storage areas represent the largest indoor areas requiring continuous and stable indoor climate control as well as large energy consumption for conserving collections. Denmark and the Netherlands in Northern Europe have been leading the challenge to realize low-energy museum facilities, especially in storage, by applying passive climate control, and employing geothermal heat from naturally-renewable, underground sources. Recently, the use of geothermal heat has been promoted in Japan as well, and some museums introduced it for indoor climate control.

Low-energy storage models in Denmark. Based on the research on passive climate control by Prof. Jørgen Erik Christensen in 1995, a new concept for museum storage design was developed in Denmark. In 2003, a monumental museum storage facility was completed as a part of the Centre for Preservation of Cultural Heritage in Vejle, on the east coast of Jutland. This facility was shared by 16 regional museums and archives at the beginning, and more than 20 museums/archives have used the facility since its renovation in 2013.

Two years before the construction of the storage facility, staff members, including conservators from the Centre, carried out a comprehensive survey of 12 museums around Vejle. Various problems facing storage facilities were clarified. Requirements or priorities identified included limited building expense, low operation cost, easy access to gate and for loading, easy cleaning, easy monitoring of insect pests, low cost by using inert building materials, sustainable climate for storing mixed collections, easy maintenance and ease of operation, and usage of renewable energy. The new storage building was therefore designed based on the principle of passive climate control, which realizes control of temperature and humidity with minimal usage of mechanical equipment and distant or external energy sources.

Specific characteristics of the Vejle storage facility are that the exterior walls and roof are highly insulated, while the interior floor is not insulated. Also, the building is very air-tight, with a low rate of air exchange. This design allows use of the natural energy of geothermal heat from under the building. Air inside the building is cooled by releasing heat to the underground environment during summer. During winter, heat from the underground environment warms air inside the building. This storage building realized not only stable environmental conditions for museum and archival collections, but also dramatically reduced energy consumption and costs. Subsequently, further storage facilities in Denmark were built or expanded with the concept of passive environmental control: the storage building of the Museum of Southwest Jutland (completed in 2005), and the new storage facilities added at the Centre for Preservation of Cultural Heritage of Vejle (completed in 2013). These super low-energy storage buildings have been titled "the Danish model," which many museums have referred to as an ideal for the design of storage buildings.

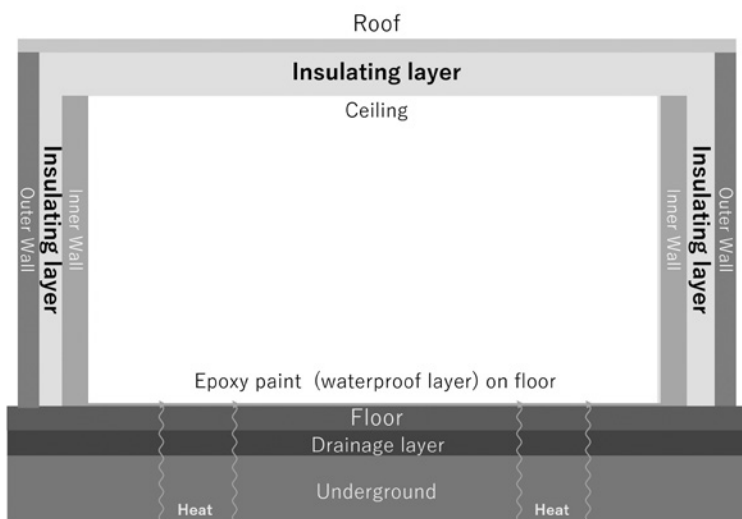


Fig. Schematic drawing of Danish model (drawn by K. Suemori, 2022)

The Collection Center Friesland. In the Netherlands, museum storage facilities have been reconsidered and redesigned since the 1990s, triggered by the Delta Plan for preserving cultural heritage. The project clarified issues faced by museums and allocated a budget for renovating and constructing of storage facilities with climate control systems. There was also a change in policy regarding museum collections, making it a priority to open existing collections to the public instead of collecting and storing new materials.

The economic crisis of 2007 in the Netherlands led to significant cuts in government budgets. This increased the interest of museums in earning income. It became difficult to justify spending money on storage facilities that are inaccessible to visitors, and it became necessary to increase opportunities for public access to stored collections. Off-site storage facilities needed to be more functional spaces, not just closed boxes, so the name changed from "storage facility" to "collection center." Alongside this trend, there was demand for shared storage facilities operated by multiple institutions. In addition, low energy and highly sustainable buildings were needed to respond to the energy crisis and dependence on fossil fuels.

In 2016, the Collection Center Friesland opened in Leeuwarden as a shared storage facility jointly operated by five regional museums. A prior survey indicated that the five regional museums had a total of 30 storage facilities, ten of which were visited only a handful of times each year. Also, it became clear that costs related to collection management had increased, and there were issues in accessing and utilizing collections. A new shared storage facility was designed with reference to the Danish model of using geothermal heat to control indoor climate passively (see above). The climate control policy was set to allow moderate levels of activity throughout the year, while avoiding sudden changes in temperature and

humidity. Mechanical equipment was also installed to cool, heat, and dehumidify air quickly when needed, to satisfy stakeholder demands.

In 2020, Collection Center Netherlands opened in Amersfoort, shared by four museums: the Netherlands Openluchtmuseum, Paleis Het Loo Museum, the Rijksmuseum, and the Cultural Heritage Agency of the Netherlands. The center has three main functions: open access for the public, supporting utilization, and storage. The storage building adopted the Danish model with non-insulated floors to use geothermal heat to control the indoor climate. In addition, pipes with cold and hot water are embedded in concrete ceilings and floors to regulate temperature efficiently.

Using geothermal heat in Japan.

Recently, use of geothermal heat to control the indoor climate has also been promoted in Japan. The passive system using natural heat conduction through non-insulated floors, like the Danish model, is often used in combination with mechanical equipment, especially in small residential buildings. Most large buildings install various active mechanical systems with heat pumps, air circulation, or water circulation.

The Mie Prefectural Museum ("MieMu") reopened in 2014 after renovation, and is one of the first museums in Japan equipped with a geothermal heat pump system. Preliminary research for the renovation indicated that the cumulative annual load for cooling and heating in the storage and exhibition rooms would be roughly the same and the annual heat balance due to reheating and heat radiation to the ground would be well-balanced, at the existing museum location. Also, the museum is surrounded by forest and in a location with relatively shallow groundwater flow. It was therefore decided to install a heat-pump system that employs geothermal heat. Through a heat exchange borehole beneath the parking



Façade of Mie Prefectural Museum with Terracotta Louvers (K. Suemori, 2022)



Heat exchange boreholes are buried under the parking lot of Mie Prefectural Museum (K. Suemori, 2022)

lot, heat is released into the ground during cooling, and is extracted from the ground during heating. Air inside the museum is then regulated with a heat pump. Stable heat exchange with the ground make it possible to operate the air conditioning efficiently throughout the year. Costs are thought to have been reduced by about 60% compared to the previous cost of a combined electricity and gas system without heat storage.

Indoor climate control using geothermal heat varies according to the surrounding environment and building characteristics. In Japan, which

has a variety of climate conditions, there may be many challenges for introducing a super low-energy system using passive heat flow like that used by the Danish model, especially in large buildings such as museums. However, there are possibilities to reduce energy consumption effectively by using geothermal heat, which is also stable renewable energy in Japan. As a public facility, museums will increasingly be required to reduce their energy consumption in order to operate sustainably and gain the understanding of the general public.

Films are waiting for digitization and the digital data need a safe repository

Katsuhisa Ohzeki

Nagoya University

Having graduated at Kyoto University with a MSc in chemistry, Katsuhisa Ohzeki began working for Fuji Film and was engaged in research and development for photographic film. He received his doctorate in engineering at the Tokyo Institute of Technology. After leaving Fuji, he joined the National Film Center at the National Museum of Modern Art, Tokyo (now known as the National Film Archive of Japan, NFAJ) and was involved in research on archival problems related to digital cinema (2014-2017). He is also involved in the development of nuclear emulsion and film for detecting fundamental particles at Nagoya University (2014-). He is a board member of *The Society of Photography and Imaging of Japan*.

Moving images have been shot and preserved on silver halide photographic film for a long time. In 2008, motion picture film stock for screening experienced an abrupt drop of supply because of the digital shift at theaters. Since then, preservation of moving images on photographic film has become difficult. Earlier than for moving images, still images became difficult to preserve with negative film because digital cameras used to shoot stills were developed and spread earlier. People also stopped printing on photographic paper and now mostly enjoy their photos on a personal computer or smart phone, and online via social media.

As a result, most recent moving images are preserved by digital media such as hard disc, optical disc or magnetic tape. However, a weakness of digital technology has been found in the long-term preservation of data, while photographic film has a good track record of durability for more than 100-years of preservation. Hence, some very precious images are still kept on photographic film by the use of a color separation technique, or by recording digital bits with film technology. In the first technique, color images are separated into blue, green, and red (B, G, R) images which are then recorded

on black and white film separately. With the second technique, digital bits are recorded directly on film. This has been done, for example, to preserve digitalized assets of Vatican library. However, these preservation methods are limited because of the cost, recoding density and limited film supply.

Realizing the situation, two reports, *The Digital Dilemma* (2007) and *The Digital Dilemma 2* (2012) were issued by the US Academy of Motion Picture Arts and Sciences as warnings for the long-term preservation of digital images. It became apparent that it was necessary for film archives to digitize their films and establish digital repositories. However, learning the use of digital technology and acquiring the needed funds are difficult challenges. Under these circumstances, the "National Research Project for the Sustainability of Born-Digital Cinema" (2014-2017) was conducted by the National Film Archive of Japan (then known as the National Film Center, at the National Museum of Modern Art, Tokyo). The project conducted research on digitizing film, preserving digital cinema, and the use of digital archives. The project also reported that western countries had reacted promptly and studied how to deal with the digitization of

moving images. Many projects in those countries were conducted by official bodies such as the British Film Institute (BFI, United Kingdom), Le Centre national du cinéma et de l'image animée (CNC, France), EYE Filmmuseum (Netherlands), and the Library of Congress (USA). Furthermore, the European Union and USA moved ahead on digitalization of national assets and the use of digital data, as national priorities. Official stewardship was needed to support the Museums-Libraries-Archives (MLA) community, so organizations such as the EFG (European Film Gateway; EU) and NDSA (National Digital Stewardship Alliance; USA) were established.



A large-scale digital repository using magnetic tape technology for motion pictures (Photo by author, Los Angeles, April 3rd, 2015)

During the second decade of the 21st century, digital technology for moving images evolved rapidly. The number of pixels increased to 8K, displays can show 5-digit brightness (with High Definition Range, or HDR), color gamut exceeded human perception (with the Academy Color Encoding System, or ACES), frame rate and bit depth also increased to 120P (High Frame Rate, or HFR) and 16 bits, respectively. As a result, the amount of digital data to be preserved has increased drastically. Further, many challenges arrived such as techniques to reconstruct original color in film, technology to keep digital data authentically, establishment of efficient data bases, technology to use digital data easily and safely, development of laws to regulate use of moving images (copyright), and so on.

Under these conditions, themes or papers reported at conferences of

the archival community have shifted from traditional preservation of things (hardware) to the preservation of software, and to the establishment and maintenance of digital repositories or databases. Consider the conference series "Archiving" hosted by Society for Imaging Science and Technology (IS&T), for example. Previously, studies on image durability of silver halide photographic film, inkjet print, or electrophotographic toner were mainly reported. Even just after digital shift, many studies concerned the preservation or durability of things, such as optical discs or magnetic tapes. However, the mainstream researcher today studies preservation systems, databases, digital data formats for preservation, standardization, and guidelines related to these matters. Workshops on digitization and color management are held. Case studies on the construction of digital repositories were reported by museums, libraries and archives. Studies on the International Image Interoperable Framework (IIIF) or Linked Data (LD) were recently reported for the better use of digital collections in the humanities.

The challenge of long-term preservation of digital assets is very difficult and more than one archive, especially a small one, can meet. There are high hurdles even for one country acting alone. As mentioned before, the EU and USA realized this early when the digital wave came to the imaging industry. They started EU and national projects to deal with the issue, with big budgets, and provided leadership to acquire and digitize cultural assets in collaboration with the MLA community.

It is desirable that Japan put effort into the issue of digitization of cultural assets recorded on film and long-term preservation of such assets as a national commitment. A huge number of films are waiting for digitization, because film theatres have almost gone. The issue of digitization of film seems to be still serious especially at small MLA organizations, according to a questionnaire during an image preservation seminar hosted by The Society of Photography and Imaging of Japan. In my private experience, I was asked from a library of local city how to deal with their film collections which recorded history of the city. Unfortunately, collective digitization could not start because of the lack of budget. It is worrying that valuable assets on film will be left uncontrolled and lost by the lack of budget and/or technical support. The "Japan Search" portal (jpsearch.go.jp/en/) was opened

in August, 2020, by National Diet Library (NDL), which played a central role in the project. For this project, ongoing organizational support with enough budget is still needed. Small MLA institutions especially are also in need of support, in order to prepare materials and participate. For Japan

Search, an aggregator is needed for moving images, and some organization (preferably public) should take the lead in obtaining data from each MLA community member, and should guide and audit the uploading of data to Japan Search.

Column

Assets for Mongolian Studies at Minpaku

Yuki Konagaya

National Museum of Ethnology

Yuki Konagaya is professor emeritus at Minpaku. She specializes in the anthropology of Mongolia, and has conducted fieldwork mainly in Mongolia, and Inner Mongolia in China, focusing on nomadism. Her interests are wide, from techniques and rituals related to animals to modern history and especially the socialist modernization. She has recorded many examples of the life histories of ordinary women in Inner Mongolia and elite men in Mongolia. She has also made the Museum a center for Mongolian study through her many publications and collaborations with related scholars.

For 36 years, from May 1987 to March 2023, I conducted research at Minpaku. However, during the last ten years, I was deeply involved in academic administration, including serving as a director of the National Institutes for the Humanities and as an inspector general of the Japan Society for Promotion of Science (JSPS). As a result, I was only actively engaged in research at Minpaku for about 30 years.

During those 30 years, I invited many Mongolian researchers and scholars of Mongolian studies from abroad to conduct joint research with Minpaku. From these collaborations, Minpaku could publish a wide range of materials and make them available online. Even after I leave Minpaku, these materials will continue to serve as a valuable research collection for others. Since the Newsletter has given me this opportunity, I would like to introduce the invitees and the results of their efforts.

The first person who should be introduced is I. Lkhagvasuren. In 1992, at the time of Mongolia's so-called democratization, I visited Ulaanbaatar again for the first time since I was a student in 1980. Our first encounter was when he picked me up at the airport. The supermarkets were like empty skating rinks, and when I was invited to his home for supper, he pointed to every dish saying, "This is aid, and this is aid too." and laughing. It was a time of difficult transition to a market economy. He stayed for seven months in 1994 as a visiting professor at Minpaku, and then extended his stay for six months with funds from the Japan Foundation. He stayed again

in 2011, this time for 12 months as a visiting professor at Minpaku. He died of a stroke in September 2022, so it is with condolences that I mention our collaboration here.

Since 1992 researchers from capitalist countries have also been able to do fieldwork in Mongolia, so I and others visited Mongolia every summer from 1995-1997 and could visit almost all parts of the country. For ethnographic purposes, we also collected household materials in Mongolia. At the time, the Mongolian customs office was very strict about the export of wooden products such as those found as parts in the Mongolian tent ger, and it would have been impossible to export them without Lkhagvasuren's help. In 1998, we used the collected materials to organize a large Mongolian exhibition. During the exhibition, an international symposium was held to celebrate the meeting of conventional philology and the newly-possible fieldwork. Results from this symposium were published in Cologne (Konagaya, 2001, *The Changing Paradigm of Mongolian Studies – Between Documents and the Field*, Int. Soc. Study Cult. Econ. Ordos Mongols).

In 2001, we began conducting interviews with Mongolian politicians who led the socialist era, and published their interviews in the Minpaku series, Senri Ethnological Reports (SER) in Japanese (SER 41, 71) and in Mongolian (SER 42, 72). These were eventually translated into English by Mr and Mrs Rossabi, who visited the museum for three months in 2010 (SER 96, 107). They were particularly enthusiastic about translating Simukov's writings into English (SER

154). Simukov left valuable records of his research in pre-socialist Mongolia until he was purged by Stalin. To collect the original material, I invited Simukov's grandson Bayaraa for 12 months in 2005 and we were able to compile a large collection of materials (SER 66, 67, 74, 75, 151).

Lkhagvasuren himself specialized in study of the Uliyanhai people of Western Mongolia and published an ethnography in Russian (SER 101). He had a strong interest in the Oirat in a broad sense, including the Uriyanhai, so in 2011, during his stay in Minpaku, he organized an international symposium on the Oirat and published a collection of his papers (Lkhagvasuren and Konagaya, 2014, *Oirat People: Cultural Uniformity and Diversification*, SER 86). We also went with a Minpaku crew to film the Tuva people, who live in locations across China, Russia, and Mongolia. The resulting program was produced in Chinese, Russian, Mongolian, Japanese, and English – and Lkhagvasuren narrated the Mongolian version.



Meeting Tuva people in Tsengel Hairkhan sum, Mongolia. Author is in the first row at right. (Ando Hazuki, 2012)

Ms Sarangerel (her name means “moonlight” in Mongolian), is a Mongolian of Chinese nationality who accompanied me for the film work, and is one of my valuable female counterparts. She was a visiting professor at Minpaku twice, in 2001 and 2013. In our first work together, we visited the Mongolian community in Qinghai Province in 2000, then published a report on their rituals to celebrate old age (SER 30). In 2002, the Research Institute for Human and Nature (RIHN) in Kyoto started a project entitled “Historical evolution of adaptability to water resources in an oasis region” (known in short as “the Oasis Project”) and I was in charge of human science section. Sarangerel and I recorded the life histories of elderly women at Ejina

oasis, in Inner Mongolia. The results were published in Japanese, vertical Mongolian and Chinese, later adding English and even Cyrillic (Konagaya, Sarangerel, and Kodama, eds, 2018, *An Oral History of Mothers in the Ejene Oasis, Inner Mongolia*, Shokado). While Sarangerel was working at the Central Nationalities University, I often went there to give intensive lectures. Several graduate students from there have studied in Japan, received degrees from Minpaku, and now hold positions in China.

For me, not only moonlight but also sunlight is important. Narangerel (her name means “sunlight” in Mongolian) is a counterpart working at Inner Mongolia University in Hohhot, Inner Mongolia. I trained at the Inner Mongolia Academy of Social Sciences in Hohhot in 1988. Narangerel is the wife of a nephew of Dr Jorong, my mentor at that time. She stayed at Minpaku for ten months in 2009 under the JSPS Fellowship Program, and for 12 months in 2014 as a visiting professor. At that time, I was organizing the huge amount of research materials left by Tadao Umesao (1920-2010), the founder of Minpaku (SER 111, 112). Without her, I would not have been able to revisit sites in Inner Mongolia to compare them with sketches that Umesao made. Narangerel was also able to verify Umesao's research from a native point of view (SER 130).

Overall, I invited 30 scholars to Minpaku, including young scholars. Since we cannot introduce all of them individually here, I present a chronological list of Mongolia-related SER volumes below. Most of them can be downloaded from the Minpaku website and academic repository. The volumes are basic research assets, and I hope that young scholars after me will use them to make Minpaku a sustainable, world center for Mongolian studies.

Senri Ethnological Reports related to Mongolia

2002, SER30. *Materials for Mongolian folk culture in Qinghai region* (in Mongolian). **2003, SER41.** *The Twentieth Century in Mongolia: Interviews about the way to Socialism* (in Japanese). **2003, SER42.** *The Twentieth Century in Mongolia: Interviews about the way to Socialism* (in Mongolian). **2007, SER66.** *A.D.Simukov Works about Mongolia and for Mongolia vol.1* (in Russian). **2007, SER67.** *A.D.Simukov Works about Mongolia and for Mongolia vol.2* (in Russian). **2007, SER71.** *The Twentieth*

Century in Mongolia (2): Political Life in Socialist Mongolia (in Japanese). **2007, SER72**. *The Twentieth Century in Mongolia (2): Political Life in Socialist Mongolia* (in Mongolian). **2008, SER74**. *A.D. Simukov Works about Mongolia and for Mongolia vol.3-1* (in Russian). **2008, SER75**. *A.D. Simukov Works about Mongolia and for Mongolia vol.3-2* (in Russian). **2009, SER88**. *Annotated Catalogue of Archival Materials on Buryat Shamanism of Center of Oriental Manuscripts and Xylographs of the Institute of Mongolia, Buddhist, and Tibetan Studies* (in English). **2011, SER96**. *Socialist Devotees and Dissenters Three Twentieth-Century: Mongolian Leaders* (in English). **2012, SER107**. *A Herder, a Trader, and a Lawyer: Three Twentieth-Century Mongolian Leaders* (in English). **2013, SER110**. *Mongolian State-run Farms* (in Japanese and Mongolian). **2013, SER111**. *Umesao Tadao's Mongolian Fieldwork Sketchbook* (in Japanese). **2013, SER112**. *Development Trajectories for Mongolian Women*

in and after Transition (in English). **2013, SER114**. *An Oral History of the Torgud People Stories from Mr. Noostai of Khovd Province, Mongolia* (in Mongolian and Japanese). **2013, SER115**. *The Twentieth Century in Mongolia (3)* (in Mongolian, Japanese and English). **2014, SER119**. *Oral Histories of Buryats in China Their Transborder Experiences* (in Mongolian and Japanese). **2014, SER121**. *Mongolia's Transition from Socialism to Capitalism: Four Views* (in English). **2014, SER122**. *Umesao Tadao's Cards of Romanized Japanese; Fieldwork in Inner Mongolia, 1944-45* (in Japanese). **2014, SER123**. *Some Archaeological findings of the Mongolian-Soviet Expedition led by S.V. Kiselev* (in Russian). **2015, SER130**. *The Verification of Umesao Tadao's work* (in Japanese). **2021, SER151**. *Explorer of Mongolia A. D. Simukov: Letters, Diaries, Documents* (in Russian). **2022, SER 154**: *Master of Mongolia, A. D. Simukov: His Life and Works* (in English).

Exploring relationships between hunters, gatherers and farmers

Kazunobu Ikeya

National Museum of Ethnology

Kazunobu Ikeya is professor at the National Museum of Ethnology. He specializes in environmental anthropology and cultural geography, and his research focuses on hunter-gatherers in the world, especially Africa and Asia, from prehistory to present. He is currently organizing a collection exhibition entitled "The Hunter's View of the Earth" (July 6 - August 8, 2023).

My main focus in recent years has been on hunting practices and culture in different societies around the world and also inside Japan. My early PhD research, from 1983 to 1988, was a study of fern gathering in a mountain farming village in Japan. Since then, my interests expanded to hunting and gathering activities globally, using historical and ethnographic approaches. I also became interested in the material culture of hunters and gatherers, and especially their body ornaments and beads. After organizing a major exhibition "Beads in the World" in 2017, I am now working on an exhibition on hunting and associated material culture (see Forthcoming Exhibitions, this issue).

In addition to research and exhibition activities, I have organized numerous workshops and conferences. The two books introduced below are the result of two conferences. The first conference was "Human Relationships with Animals and Plants: Perspectives

of Historical Ecology" (Minpaku, March 2018) and was part of a Minpaku Special Research Project ("Historical Ecology of Biocultural Diversity: Use and Conservation of Endangered Animals, Plants, and Habitats"). The second conference was held at Doshisha University in 2016 as part of the eighth World Archaeological Congress (WAC8, Kyoto).

The first conference resulted in publication of the book *Advances in East Asian Agricultural Origins Studies: The Pleistocene to Holocene Transition* (Pei-Lin Yu, Kazunobu Ikeya, and Meng Zhang, eds.), a special open-access issue of the journal *Quaternary*. Scholars from China, Taiwan, and Japan evaluated Paleolithic cultural influences on the transition to Neolithic adaptations. The broad range of habitats and deep time of human occupation in East Asia have led to many explorations of variability in agricultural origins, transfers and

adoptions.

In this volume, we considered diverse evolutionary scenarios across time and space, new archaeological data, legacy data, new perspectives on paleoclimate and environment, and ethnological records of hunting and gathering peoples and small-scale cultivators. Our main focus was on approaches to understanding the East Asian transition from foraging to Neolithic agriculture, during a period of dramatic climate and environmental change from the late Pleistocene to early Holocene. In Japan, this period corresponded approximately to the transition from the Palaeolithic to Jomon cultural periods that are known primarily through archaeological studies. Hunters and gatherers of the Jomon period also cultivated small range of crops, and were eventually replaced by Yayoi agriculturalists growing rice on a large scale. My particular interest has been in how transitions such as this take place. For the example of Japan, my contribution to the book was development of a dynamic model of relationships between hunter-gatherers and farmers, based on archaeological sequences and also ethnohistorical records from the Edo period in Japan (1603-1868). During the Edo period, small-scale upland, slash-and-burn farming communities depended substantially on hunting and gathering, but came into increasing contact with expanding lowland communities of paddy rice farmers.

The second book I would like to introduce is *Global Ecology in Historical Perspective: Monsoon Asia and Beyond* (K. Ikeya and W. Balée, eds., 2023, Springer Nature). In this volume we examined human-animal and human-plant interactions in the diverse environments of southeast, central and eastern Asia, including Japan. Case studies from the Americas (whales in the Arctic, sea turtles in the Caribbean, and plants in the Amazon) were also included. The book illustrates local and regional diversity in human-animal and human-plant interactions in Asia, and expands the framework for understanding animal/plant/human relationships globally.

My contribution to this volume was a study of changing mountain landscapes in Japan, and interactions between wild bears and humans. In the past, and until recently, bears were a source of food and many other useful products, and were hunted by specialist hunters called *matagi*. Today they are mainly hunted for sport or

because they pose a nuisance (raiding crops, or attacking people) (see photo). Black bear populations survive on the large islands of Honshu and Shikoku, and appear to have become extinct on Kyushu (larger brown bears are still found in Hokkaido). Iwate prefecture in northeast Honshu has large areas of forest and a relatively large bear population. There, I looked at the history of damage by bears and other wild animals, bear ecology, changes in landscape and human activities in forests, especially in the *satoyama*, or managed secondary forests where wild chestnuts and persimmons are common (see photo). Declining use of *satoyama* forests by humans has encouraged bears to visit such areas more frequently, bringing them closer to human settlement areas.



Hunters scan mountain slopes in Spring to observe black bear movements (K. Ikeya, Iwate Prefecture, 1985)

As I mentioned in the introduction, I first began my research on post-hunter-gatherers in Japan and then expanded it to the study of hunter-gatherers in the world, but I found that there are few examples of such studies in monsoon Asia. The two books I introduced here contribute to understanding of the transition from hunter-gatherers to agriculturalists in East Asia, and the characteristics of nature-human relations in monsoon Asia within the world. Although both books are mostly ethnographic studies of small-scale societies, they will be helpful in constructing dynamic models of the relationship between nature and animals, and nature and plants, from prehistory to the present. The Earth's population now exceeds eight billion people. The question that is being posed to us is how humans can coexist with nature and other societies in the future world.

Exhibition

Maritime People and Art of Their World: Material Culture in Southeast Asia and Oceania

*Thematic exhibition
September 8–December 13,
2022*

In this thematic exhibition, we introduced the history of human migration across the islands of Southeast Asia and Oceania and the lifestyles of maritime people in those regions. In particular, we introduced the maritime culture of canoes, fishing gear, major fish species used as food, shell ornaments, and ceremonial goods. The exhibition highlighted the beauty and artistic aspects of maritime material culture. Together with about 300 museum objects, we also presented video movies related to fishing and craft making in Southeast Asia and Oceania.

The exhibition had five parts: (1) introduction, (2) fishing, (3) shellfish and shell ornaments, (4) maritime transport, and (5) the maritime spiritual world. As introduction we presented an overview of human migration from Taiwan and the islands of Southeast Asia to the entire region of Oceania, a movement that started about 4,000 years ago during the Neolithic period. People speaking languages of the Austronesian language family spread throughout the islands of Oceania.

In the second part we displayed beautiful examples of fishing gear, and specific fishing methods. Technical knowledge and detailed understanding of the fish were indispensable for human life in the maritime world. As modern humans, we have used great ingenuity to develop fishing gear according to the habits of the fish and other marine organisms. The exhibition showed how relationships between humans and living marine creatures can be seen through fishing gear.

The third part presented beautiful shell ornaments and



Exhibition entrance
(Ono, 2022)



Workshop: Making
pandanus-leaf craft
(Minpaku, 2022)

designs from across Southeast Asia and Oceania, and illustrated the diverse roles of marine resources in the lives of maritime peoples.

The fourth part displayed canoes and paddles, which were necessary tools for human life in the island world. Canoes and other boats were important for fishing and transportation from island to island. Tools used to build boats and canoes in Southeast Asia and Oceania were also displayed and included shell, stone and iron adzes. These also had fine artistic qualities.

The last part of our exhibition introduced the spiritual world of people as symbolized by boats and shells. Boats and canoes are symbols of life, and at the same time they are symbols of the worlds of death, taking dead people to heaven or another world after life.

For public education, we also held workshops (making pandanus-leaf craft), Minpaku seminars, and weekend salons with guided tours of the exhibition. Mini-lectures to introduce the exhibition were also presented during visits by

elementary, junior high and high school students.

Rintaro Ono
National Museum of Ethnology

Information

Award

Itsushi Kawase

*Associate Professor, Center for
Cultural Resource Studies
National Museum of Ethnology*

His film, "Singer Poets—The Feast of Voices" won the first Runner-up Grand Prix in the Anthropology and Ethnographic Film Competition at Tokyo Documentary Film Festival 2022 (December 16, 2022). It is awarded for his stable camera work of 17-minute one-cut, capturing the outpouring daily critical spirit of Azmari (a player of the stringed instrument Masinko in Ethiopia) and showing intimate relationship between the Ethiopians and the film director.

Kenji Kuroda

Assistant Professor, Department of Globalization and Humanity National Museum of Ethnology

Received the 18th Incentive Award from the International Institute for the Study of Religions (February 18, 2023) for his book, *Memory of War and the Nation: A Returning Soldier's View of Martyrdom and Oblivion in Contemporary Iran* (Sekaishisoshia, 2021, in Japanese). It is awarded for its rich description on religion and politics in Iran and insight into contemporary religious revivals.

In memoriam

With regret we note the following:

Tomoaki Fujii

Professor Emeritus. An ethnomusicologist specialized in Asian music. He was awarded the Order of the Sacred Treasure, Gold Rays with Neck Ribbon in 2014. Deputy Director-General of Minpaku 1993–1996. Minpaku 1974–1996 (d. March 24, 2023)

Yoshitaka Terada

Professor Emeritus. An ethnomusicologist specialized in performing arts of Asia, especially in Indian music. He led the special research project “Performing Arts and Conviviality” (2018–2023). Minpaku 1996–2020 (d. March 29, 2023)

Hiroshi Shoji

Professor Emeritus. A linguist specialized in immigrant languages and multilingual phenomena in Japan and Northern Europe. In 2004 he organized the special exhibition ‘Multi-ethnic Japan: Life and History of Immigrants’. Minpaku 1980–2015 (d. May 4, 2023)

New Staff**Shinichi Fujii**

Assistant Professor, Department of Cross-Field Research



Fujii specializes in cultural anthropology and peace research, with a particular interest in the dynamic relationship between peace and violence. He has been conducting field research in Solomon Islands, especially north Guadalcanal since 2009. He received his PhD in Human Sciences from Osaka University in 2019. From 2017 to 2020, he was a JSPS Postdoctoral Fellow at Minpaku, and then he was a visiting researcher at Minpaku until March 2023. Based on his field research over about 10 years, he published *An Ethnography of Peace Generated: “Ethnic Tension” and Ordinariness in the Solomon Islands* (Osaka University Press, 2021, in Japanese). In recent years, he has investigated material aspects of gift exchange for restoring relationships after conflict.

Eriko Kawanishi

Assistant Professor, Center for Cultural Resource Studies



Eriko Kawanishi specializes in anthropology and religious studies, with particular interests in contemporary paganism, alternative spirituality, spiritualism, sacred landscapes, and spiritual tourism. She conducts her fieldwork mainly in Glastonbury, UK. She was granted her PhD at the Graduate School of Human and Environmental Studies at Kyoto University in 2013, and worked at the Butsuryo College of Osaka (2016–17) and the Professional Institute of International Fashion (2019–23). Her main published works are: *Goddesses in Glastonbury – Ethnography of Alternative Spirituality in UK* (2015, Hozokan, in Japanese), “After Fieldwork: Vestiges in/from a Fieldworker” (in G. Kajimaru et al., eds, *An Anthropology of Ba: Place and Performance Co-emerging* (2021, Kyoto University Press, pp.158–176),

and “Overview of *Majo*, Western Witches, in Contemporary Japan” (2022, ASRR 13: 211–224).

Kota Suzuki

Assistant Professor, Department of Modern Society and Civilization



Suzuki specializes in Japanese folklore and folk performing arts research, especially the religious performing art called Kagura. He studies the activities of Kagura performers and historical transitions in performers' organizations, using fieldwork and historical materials. Recently, he is interested in the transformation of Kagura under the influence of political power during modernization. In 2020, he received his PhD in Japanese History at the Graduate University for Advanced Studies. Before taking his current position, he was an assistant researcher at the Department of Intangible Cultural Heritage, Tokyo National Research Institute for Cultural Properties.

Publications

Online at: www.minpaku.ac.jp/en/research/publication/research-publications

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Issue 2: H. Kawai (ed.), “Special Theme: The Reshaping and Non-shaping of Hakka Ethnicity: Perspectives from Anthropology”; C. Hirano, “Ways to Avoid Trouble: A Case Study of Anangu Liquor Hunting in the Central Desert of Australia”

Issue 3: J. Akamine, “An Introduction to the Political Economy of Japanese Modern Whaling: Edible Oil Competition and the Rise and Sink of Whale Oil Production”, K. Yoshida, “Revisiting ‘Images of Other Cultures’: Impact

of the 1997 Exhibition and Beyond”

Issue 4: M. Fukuma, “Transnational Exchange of Yaqui”, S. Hidaka, “Museum Operations during the COVID-19 Pandemic: Initiatives Taken by the National Museum of Ethnology”, H. Wada, “Trend Analysis of the Number of Visitors Occupying a Special Exhibition Room to Verify Effects of Numbers of Visitors on Exhibition Room Environments”, T. Nobuta,

“The Minpaku Sama-Sama School Challenge: Special Needs Education and Lifelong Learning for People with Intellectual Disabilities”.

Senri Ethnological Studies

Vol. 112: Y. Seki (ed.), *New Perspectives on the Early Formation of the Andean Civilization: Chronology, Interaction, and Social Organization*. 354 pp. (English).

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M. F. Olarte-Sierra, G. U. Razzini, D. Garces and S. R. Vitta, “Forensic Tales: Embodied Peace and Violence in Colombian (Post) Armed Conflict”; I. Karataş, “Analogue Practices in Digital Landscapes”; N. Willimann and M. Arai, “The gift exercise / Invitation 6: Sihlwald - Letter to / from a barkbeetle”; M. Dietrich, “The Politics of Visibility and Visuality in Camera-Based Research”; A. A. Shelton, “The Future is Unwritten: A Year of Living in the Pandemic”
URL: trajectoria.minpaku.ac.jp

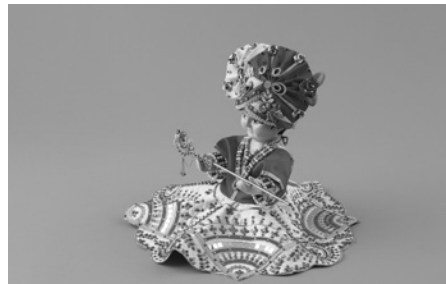
Forthcoming Exhibitions

National Museum of Ethnology, Osaka

Special Exhibition

Divine Affection: Enchanting Images of Hindu Deities

September 14–December 5,
2023



Bal Gopal with flute H0327017

Thematic Exhibition

Screen Prints of Canada's Northwest Coast Peoples

September 7–December 12, 2023



The Shn'em (Medicine man) H0117604



Raven finds mankind in a clamshell
H0117705

Collection Exhibition

The Hunter's View of the Earth

July 6–August 8, 2023



Water bottle
made from
giraffe
stomach
H0204777



Blowgun
and quiver
H0224591-
H0224598

MINPAKU Anthropology Newsletter

The Newsletter is published in summer and winter. “Minpaku” is an abbreviation of the Japanese name for the National Museum of Ethnology (*Kokuritsu Minzokugaku Hakubutsukan*). The Newsletter promotes a continuing exchange of information with former visiting scholars and others who have been associated with the museum. The Newsletter also provides a forum for communication with a wider academic audience.

Available online at:
www.minpaku.ac.jp/newsletter

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