

ICOM NATHIST

VIRTUAL CONFERENCE 2021

THE OLDEST NATURAL HISTORY
COLLECTIONS AS A CHALLENGE OF
RESEARCH AND PUBLIC PROGRAMS

September 13 – 15, 2021



PRIRODOSLOVNI
MUZEJ SLOVENIJE
200 LET



NATHIST



PROGRAMME
&
BOOK OF ABSTRACTS

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WELCOME ADDRESS

Dear participants of the ICOM NATHIST 2021 virtual conference

As both Director of the Slovenian Museum of Natural History and board member of ICOM NATHIST, responsible for organizing the conference, it gives me great pleasure to welcome you to the conference.

The ICOM NATHIST 2021 conference (the International Council of Museums Committee for Museums and Collections of Natural History 2021 conference), held in Ljubljana, Slovenia, from 13 to 15 September 2021, is hosted by Prirodoslovni muzej Slovenije / Slovenian Museum of Natural History. As the Slovenian Museum of Natural History - with founding collections of the first Slovenian museum - celebrates its 200th anniversary in 2021, a ceremony marking this special event is scheduled to take place during the conference.

At the conference, a number of experts present the latest achievements related to THE OLDEST NATURAL HISTORY COLLECTIONS AS A CHALLENGE OF RESEARCH AND PUBLIC PROGRAMS. In addition to two keynote lecturers, participants have the opportunity to present their work in oral presentations and short oral poster presentations. The contributions show that we are very proud of our oldest collections. We are willing to help others to recognize the value of natural history collections in order to improve the attitude to nature and nature history collections and, last but not least, acquire sufficient financial resources for our precious collections.

On behalf of Prirodoslovni muzej Slovenije / Slovenian Museum of Natural History I would like to thank you for your contributions leading to this successful conference.

Yours faithfully,



Breda Činč Juhant

Director, Slovenian Museum of Natural History

ICOM NATHIST Board Member



COMMITTEES

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Breda ČINČ JUHANT, Slovenian Museum of Natural History

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Shih-Yu HUNG, National Taiwan Museum, Taipei, Taiwan

Atsushi YABE, National Museum of Nature and Science, Tokyo, Japan

Dacha ATIENZA, Natural Sciences Museum of Barcelona, Barcelona, Spain

KEYNOTE SPEAKERS

Eric Dorfman

Eric Dorfman is the Director and CEO of the North Carolina Museum of Natural Sciences. He has written a number of books on popular science and museum theory, and is co-host of Love Nature: The Biophilia Podcast, covering people's personal relationships with the natural world.



Anita Hermannstädter

Anita Hermannstädter is an historian, exhibition curator and science manager. She has been head of the Humanities of Nature department at the Museum für Naturkunde Berlin since 2012, and she is also involved in the strategic development of the museum.



Monday, 13 September 2021

Time UTC + 0 (Ljubljana: UTC + 0 + 2 hours)

13:00	13:15	Opening		
13:00	13:05		Breda Činč Juhant	Slovenian Museum of Natural History
13:05	13:10		Dorit Wolenitz	ICOM NATHIST
13:10	13:15		Kaja Širok	ICOM Slovenia
13:15	15:20	Museums as a challenge of research & Collections as a challenge of public programs and museum education Chairpersons: Hui-shih (Phaedra) Fang & Shih-Yu Hung		
13:15	13:45	Keynote lecture Old Things – New Insights. Approaches from the Humanities and Arts	Anita Hermannstädter	Museum für Naturkunde Berlin
13:45	14:05	Deciphering the history of a natural history collection using museum labels: A case study on Darüßsafaka High School's natural history collection	Ozge Hazar	Istanbul University- Cerrahpaşa
14:05	14:20	Break		
14:20	15:20	Collections as a challenge of public programs and museum education Chairpersons: Hui-shih (Phaedra) Fang & Shih-Yu Hung		
14:20	14:40	Interpretation aids for collections: feedback from the National Museum of Natural History in Paris	Agnès Parent	Muséum National D'histoire naturelle
14:40	15:00	Challenge: planning of successful museum interpretations in critical conditions	Staša Tome	Slovenian Museum of Natural History
15:00	15:20	Old zoological specimens as the backbone of Natural History Museum exhibitions in Montenegro	Andrej Vizi	Natural History Museum of Montenegro
15:20	15:30	Break		
15:30	16:15	Short oral-poster session Collections as a challenge of research Chairpersons: Dacha Atienza & Jesse Rodriguez		
15:30	15:36	Oldest botanical collections in the National Museum of the Philippines: then and now	Catherine Enriquez	National Museum of the Philippines
15:36	15:42	Investigation on the old reconstruction of the holotype of the Naumann Elephant <i>Paleoloxodon naumanni</i> by X-ray CT	Satoshi Maruyama	Natural History Museum And Institute, Chiba
15:42	15:48	The "dry garden" of Josef Kalasanz von Erberg	Špela Pungaršek	Slovenian Museum of Natural History
15:48	15:54	Fossils of Slovenia	Tea Kolar-Jurkovšek	Geological Survey Of Slovenia
15:54	16:00	New information of ichthyology collection in Natural history museum in Split	Josip Boban	Prirodoslovni muzej i zoo vrt
16:00	16:15	Questions		

Tuesday, 14 September 2021

Time UTC + 0 (Ljubljana: UTC + 0 + 2 hours)

12:00	13:30	Annual General Meeting Chairpersons: Dorit Wolenitz & ICOM NATHIST board		
13:30	14:00	Break		
14:00	16:40	Collections as a challenge of research Chairpersons: Christel Schollaardt & Lynda Knowles		
14:00	14:30	Keynote lecture Natural History Collections at the Core of Research: History, Ethics and the Future	Eric Dorfman	North Carolina Museum of Natural Sciences
14:30	14:50	The oldest geological collection of NMNS—its roles in early geological studies in Japan	Atsushi Yabe	National Museum Of Nature And Science
14:50	15:10	Changes of SROI of natural history museums by Digitalization of activities under COVID-19 - case of Osaka Museum of Natural History -	Daisuke Sakuma	Osaka Museum of Natural History
15:10	15:20	Break		
15:20	15:40	Collections of the department of geology as a research environment	Mirijam Vrabec	University of Ljubljana, NTF, Department of Geology
15:40	16:00	Research on Coleoptera Collection of Dr. Eduard Karaman (1849-1923)	Bože Kokan	Prirodoslovni muzej i zoo vrt
16:00	16:20	Naturalias from the 18th century in the museums of Le Mans	Nicolas Morel	Musées Du Mans
16:20	16:40	Understanding and preventing discoloration of botanical wet collections	Elodie Granget	Haute Ecole Arc Conservation- restauration

Wednesday, 15 September 2021

Time UTC + 0 (Ljubljana: UTC + 0 + 2 hours)

17:00	18:00	Ceremonial Event		200th Anniversary of Slovenian Museum of Natural History
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ABSTRACTS

Old Things – New Insights. Approaches from the Humanities and Arts

Anita Hermannstädter

Natural history museums are very special places with an entangled history. Their specimens connect people across time and space. Seen from this perspective, historical collections not only provide valuable material for scientific research, but also serve as portals into the past. Whether they are dinosaur skeletons, whale models, fragments of meteorites or mounted animals, natural history objects are embedded in webs of political and social practices, global encounters and conflicts, scientific and public interests, aesthetic preferences, and specific historical circumstances. It is the multi-faceted nature of these specimens that gives them the power to attract and move many different people and communities – locally and globally.

These social, cultural and political dimensions of natural history collections need to be unpacked, discussed and represented in public spaces in order to create new knowledge, critical reflection, diverse experiences and international connections. When we deal with our own past, we have the opportunity to learn more about natural history museums as societal agents, to see objects and collections from new perspectives, and to engage with various research fields and diverse communities. In my keynote speech, I will discuss how approaches from the humanities and arts can broaden the impact and relevance of natural history museums.

Author

Anita Hermannstädter is an historian, exhibition curator and science manager. She has been head of the Humanities of Nature department at the Museum für Naturkunde Berlin since 2012, and she is also involved in the strategic development of the museum.

Natural History Collections at the Core of Research: History, Ethics and the Future

Eric Dorfman

The roughly 1 billion specimens housed in natural history collections around the world make up an incomparable scientific resource. Since the 16th century, when people assembled their treasures into cabinets of curiosity, natural history specimens have been objects of fascination. In recent times, people have used biological and geological objects to elucidate an enormous variety of scientific questions. They are used for understanding taxonomic relationships among species to build an understanding of the evolutionary tree of life. They can provide evidence of geographic variation and ecological relationships among taxa. Now, in the age of global climate change, the Anthropocene, and the Sixth Extinction, researching researchers are finding innovative ways to use natural history collections to measure human impacts on biodiversity. The variety of uses and their importance of their contexts also offers many ethical questions. Issues of cultural patrimony, decolonization, data sharing, protection of vulnerable species, and human remains are bound up in the considerations in these collections. Emerging conversations in this area are also beginning to center on the definition of natural history objects, from purely organismal specimens to a broader perspective. Tissue collections prevent the need to store or collect an entire animal and leverage new sophistication in genomics. Photogrammetry, sound recordings and other data sources mean that valuable information can be collected without even having seen the animal. Whatever the source of these specimens, or how they are used, as the world slips closer to the brink of environmental disaster, natural history collections - and the information they provide - have never been more important.

MONDAY, 13 SEPTEMBER 2021

ORAL PRESENTATIONS

Deciphering the history of a natural history collection using museum labels: A case study on Darüşşafaka High School's natural history collection

Özge Hazar¹, Gönenç Göçmengil²

¹Istanbul University, History of Science Department, Istanbul, Turkey, ²Istanbul University-Cerrahpasa, Geochronology and Geochemistry Laboratory, Istanbul, Turkey

INTRODUCTION:

In a natural history collection, the label of a specimen mostly records the core information about the specimen such as its name, family or genus, provenance, acquisition date, collector, and physical properties. In this study, we investigate the museum labels of a late 19th century natural history collection kept at the Darüşşafaka High School (DHS), Istanbul, Turkey to evaluate where, when and by whom the specimens were acquired throughout its evolution.

MATERIALS AND METHODS:

DHS natural history collection contains specimens of minerals, rocks, fossils, and vertebrates in formaldehyde mostly collected from late 19th on to early 20th century. Museum labels show different languages such as German, French, Russian, Ottoman Turkish (in Arabic or Latin alphabet). All the labels are investigated according to their typography and compared with the known museum label databases and historical documents.

RESULTS:

The data extracted from museum labels and historical documents indicate that the first portion of the collection have been bought from Félix Pisani (1820-1831), a French chemist and mineralogist while later acquisitions came from a mineral company in Germany. As teaching was in Ottoman Turkish in the DHS, museum labels in Ottoman Turkish were also found on specimens donated by Ottoman bureaucrats on those acquired possibly by field work in the 1880s. After the alphabet reform in Turkey (1929) labels were written in Turkish with Latin letters. Thus, some specimens have presently three or four labels written in various languages/alphabets and these labels display the multifaceted evolution of the museum collection.

CONCLUSION:

Because few historical documents are available about the museum of the DHS, its labels are of crucial importance to establish the history of the school's museum and its natural history collection. Typographic resemblance with other labels and historical accounts on its donators show that specimens collected by purchasing, donation, and field studies.

MONDAY, 13 SEPTEMBER 2021

ORAL PRESENTATIONS

Interpretation aids for collections: feedback from the National Museum of Natural History in Paris

Agnès Parent¹

¹Muséum National D'histoire naturelle, Paris, France

INTRODUCTION:

Collections, and particularly old collections, are the nerve centre of natural history museums.

The National Museum of Natural History in Paris is a veritable conservatory of nature (67 million specimens in its collections - 20,000 presented in its various galleries and museums).

Collections have an evocative power, which is the basis for the vast majority of our mediation activities.

MATERIALS AND METHODS:

But taking the collection as the main medium of discourse is not incompatible with the use of various technologies. These media can help to develop the link between visitors and collections: to show what is too small, to explain concepts...

Varying the proposals for experiments is also an opportunity for us to broaden our range of audiences, with the aim of raising awareness of Natural History among as many people as possible.

RESULTS:

The Paris Museum was the first to permanently install a virtual reality cabinet to complement the visit to the Gallery of evolution.

In the room of endangered or extinct species, which contains many historical specimens, a new augmented reality tour brings eleven animal species back to life.

Next autumn, a large immersive exhibition will offer a unique multi-sensory experience to discover the biodiversity of nine ecosystems.

Less „technological“, this winter we will install in the Jardin des Plantes the 3rd edition of the Illumination festival which will present 500 million years of life on earth, highlighting species often presented in the form of fossils in our paleontology gallery.

CONCLUSION:

In this paper, we propose to give our feedback on the implementation of devices or exhibitions that accompany the more traditional presentation of specimens in our galleries. We will give the first results of the impact on our visitors and if these new propositions changed the range of our visitors (extracts audience studies).

MONDAY, 13 SEPTEMBER 2021

ORAL PRESENTATIONS

Challenge: planning of successful museum interpretations in critical conditions

Staša Tome¹

¹Prirodoslovni muzej Slovenije, Ljubljana, Slovenia

INTRODUCTION:

Slovenian museums have lately made great progress in the field of heritage interpretation theory. As early as 2005, the Slovenian Museum Associations organized training sessions for museum workers with John Veverka, the acknowledged American expert in heritage interpretation. The heritage interpretation is a regular topic at the meetings of Slovenian museum workers. Nevertheless, examples of good practice are rarely seen in our country (Tome, 2016). There are too many exhibitions and public programs that do not follow the basic principles of museum interpretation, too little attention is paid to deliberate planning of uniform message and clear goals that would define what the visitor is to learn, how the exhibition is to affect his emotions and behaviour. Only when the exhibition and any other interpretation achieve such goals can we claim that it is successful (Veverka, 1994).

MATERIALS AND METHODS:

On the basis of years of observations and online surveys of various Slovenian museums, we tried to record the reasons for this situation.

RESULTS:

There are several reasons:

1. Inadequate staff
2. Inadequate work organization
3. Inadequate funding
4. Inadequate basic working conditions

CONCLUSION:

Although similar challenges are faced by most of our museums, the situation in our museum is so poor that it can be described as critical. In spite of it all, we have made great progress in the last 20 years and have received several awards from the professional and lay public. We have achieved this with much enthusiasm, ingenuity and ability to adapt. In the long run, however, it is not possible to operate in such conditions. We will present the challenges we are faced with, as well as the ways we are dealing with them, suggest possible solutions and share experiences with other participants.

MONDAY, 13 SEPTEMBER 2021

ORAL PRESENTATIONS

Old zoological specimens as the backbone of Natural History Museum exhibitions in Montenegro

Andrej Vizi¹, Suzana Malidžan¹, Čeda Ivanović¹

¹Natural History Museum of Montenegro, Podgorica, Montenegro

INTRODUCTION:

Although mostly from recent years, some collections of Natural History Museum of Montenegro (NHM) predate the existence of the institution itself. The goal of those pioneer collections was to bring new cultural and scientific content to a developing country. Although largely damaged and without proper documentation, the old collection became the staple of natural exhibitions since the first one in 2000.

MATERIALS AND METHODS:

Materials used for this review include any form of documentation available for old collections: taxidermist's notes, tags, exhibition catalogs, pictures and interviews. Methodological approach was to determine at least the age and origin of old specimens and to review their exploitation at museum's exhibitions since 2000.

RESULTS:

Oldest collections of Natural History Museum of Montenegro (NHM) have been inherited from the former Natural collection of the Institute for Protection of Nature of Montenegro. Although largely destroyed and damaged due to 1979 earthquake and poor storing afterwards, the old collection became the core of the newly formed Natural History Museum. The oldest zoological specimen (originates from 1956). The documentation of inherited material is largely incomplete and imprecise due to the fact they were not originally collected as museum specimens, but rather for popular exhibition purposes. However, these specimens are still of great value and irreplaceable, representing either extinct, rare, major or just well-prepared individuals. In addition, they carry the knowledge and memory of today non-existing natural landscapes and objects. They represent the monuments of human intervention towards nature, whether for great success or total failure. For that reason, old specimens are still heavily exploited at numerous biodiversity exhibition of NHM.

CONCLUSION:

Old specimens, despite their museological drawbacks, are of great educational and scientific value and should be treated with precaution.

MONDAY, 13 SEPTEMBER 2021

SHORT ORAL-POSTER PRESENTATIONS

Oldest botanical collections in the National Museum of the Philippines: then and now

Catherine Enriquez¹, Jhaydee Ann Pascual¹, Maileen Rondal¹

¹*National Museum of the Philippines, Ermita, Philippines*

INTRODUCTION:

The National Museum of the Philippines manages and develops the country's reference collections in the areas of cultural heritage and natural history. One of the repositories is the Philippine National Herbarium (PNH) that houses ~280,000 herbarium specimens. The value of these herbarium collections for biodiversity research has been greatly emphasized in recent studies. However, limitations in utilizing old collection data have been a hindrance in conservation strategies due to its geographic gaps, ad hoc collections, and biased sampling. Thus, it is necessary to revisit the oldest collections to analyze the data associated with these specimens.

MATERIALS AND METHODS:

The list of the oldest botanical collection were identified through the database of specimens in the PNH, with criteria that include the oldest date of collection and completeness of the herbarium label. A literature review was done for species distribution and conservation status. Present and past distribution maps from these collections were created using Q-GIS Software.

RESULTS:

Ten notable collections were noted in this study that include eight endemic specimens collected from 1854-1884 from provinces in proximity to Manila. Discrepancy on past and present distributional records of the species had been noted which may have been due to the advent of industrialization resulting in forest denudation in the past century as well as biased sampling methods. Moreover, insufficient information on these collections has caused limited assessment of its conservation status and the status of the areas to conserve.

CONCLUSION:

Natural history museums are repositories of reference material that contains valuable data on the historical and present patterns of biodiversity. The advancement in technology enables us to further unlock these significant data. However, threats to the survival of the species are rising and intensive research must be done to fill in the gaps in the knowledge on its abundance and geographical distribution.

MONDAY, 13 SEPTEMBER 2021

SHORT ORAL-POSTER PRESENTATIONS

Investigation on the old reconstruction of the holotype of the Naumann Elephant *Paleoloxodon naumanni* by X-ray CT

Satoshi Maruyama¹, Hiroshige Matsuoka²

¹Natural History Museum and Institute, Chiba, Chiba, Japan, ²Department of Geology and Mineralogy, Faculty of Science, Kyoto University, Kyoto, Japan

INTRODUCTION:

Old fossil collections containing many type specimens are stored in Kyoto University. Among them is the holotype specimen of the Naumann elephant, one of the most famous vertebrate fossils in Japan. This specimen was collected in 1921 and was first described as *Elephas namadicus naumanni* by Makiyama (1924). Not long after the description, the mandible and incisor (originally fragmented) of this specimen were reconstructed in plaster. Recently, we examined the three-dimensional internal structures of them non-destructively, especially on the morphological validity of these plaster reconstructions.

MATERIALS AND METHODS:

The mandible (Department of Geology and Mineralogy, Faculty of Science, Kyoto University) and the incisor (The Kyoto University Museum) from this holotype. Using a medical CT scanner, these specimens were scanned. These DICOM data were then reconstructed using software such as Amira.

RESULTS:

Internal cracks were observed in the mandible. On the right side, a plaster was formed up to the posterior margin of the mandibular angle. The right and left molars are supported by the plaster base. Nevertheless, the biological morphology seems to be fairly well restored, we thought. The incisor was built badly in plaster. Makiyama (1924) described that „The curvature of the incisor is approximately equal to that of a logarithmic spiral with a constant angle. There is only a slight tendency to rotation. ...“ but in reality, the evidence of twisting original shape for this incisor was observed. The original description might be based on the wrongly reconstructed shape and misjudged the characteristics of the incisor of this species.

CONCLUSION:

X-ray CT imaging revealed that the old reconstruction of the holotype of the Naumann elephant was partly wrong from the original shape of the animal.

MONDAY, 13 SEPTEMBER 2021

SHORT ORAL-POSTER PRESENTATIONS

The „dry garden“ of Josef Kalasanz von Erberg

Špela Pungaršek¹

¹Slovenian Museum of Natural History, Ljubljana, Slovenia

INTRODUCTION:

First herbaria were made in the 16th century and were formed as herbarium books. They were known as »hortus siccus« or dry gardens. The Slovenian Museum of Natural History keeps three herbarium books, besides the oldest known herbarium in Slovenia made in 1696 by Janez Krstnik Flysser, also two herbaria owned by Josef Kalasanz von Erberg (1771–1843). In the Herbarium vivum Lustthalense from year 1798 Erberg gathered mostly ornamental plant species, that prospered on his property in Dol near Ljubljana. There he arranged a park, that was a real botanical garden with exotic plants. His second herbarium is a collection of plants, that are decorated by glued yellow and red vases.

MATERIALS AND METHODS:

We investigated the natural distribution of the plants in Erberg's herbaria and to which plant families they belong. Therefore we made a list of species from both herbaria and added them new names and plant families according to recent nomenclature using www.theplantlist.org. We assigned them their distribution that was published on plantsoftheworldonline.org.

RESULTS:

The plants in the Herbarium vivum Lustthalense, are mostly non-indigenous in Slovenia and naturally prosper in America, the Mediterranean region, South Africa and Asia. One half of the species belongs to four plant families: Compositae, Fabaceae, Geraniaceae and Malvaceae. Erberg's herbarium with vases doesn't comprise just vascular plants, but also mosses. Most of the collected species are native to Slovenia, but all don't prosper in the vicinity of Dol, as there are also some alpine species.

CONCLUSION:

As typical for renaissance, Erberg didn't focus just on the special plants growing on his property, but also wanted to know the names of common plant species. He gathered all of them in his herbaria.

MONDAY, 13 SEPTEMBER 2021

SHORT ORAL-POSTER PRESENTATIONS

Fossils of Slovenia

Tea Kolar-Jurkovšek¹, Bogdan Jurkovšek

¹*Geological Survey of Slovenia, Ljubljana, Slovenia*

INTRODUCTION:

Our new book *Fossils of Slovenia* presents a selection of fossils that are important for the understanding of time in which a large part of the Slovenian sedimentary rocks were formed. It is a comprehensive overview of fossils, which are also an important part of our geological natural heritage.

MATERIALS AND METHODS:

The work is based on an extensive review of publications by numerous Slovenian and foreign geologists and paleontologists, from the earliest beginnings of paleontological research in Slovenia to the present day. It contains more than 400 citations of published works. Fossils and original reconstructions of the paleoenvironment are shown for individual geological periods. All illustrated macrofossils are from the Paleontological Collection Jurkovšek, which has been registered with the Slovenian Museum of Natural History.

RESULTS:

The book was intended to boost general knowledge about paleontology and fossils in Slovenia as well as to popularize paleontology. Therefore, macrofossils are mainly presented that can be seen with a naked eye. The presented fossils are important documents on the mode of life of former organisms, their associations in relation to the environment as well as the conditions at the time of their death and subsequent fossilization. Parallely, key geological events are also presented, from local and regional to global, that have directed the evolutionary pathways of the living world to the present day.

CONCLUSION:

The book *Fossils of Slovenia* has been completely translated into English. It comprises 263 pages and is richly illustrated, containing 33 plates with exclusively Slovenian fossils. It is a comprehensive presentation of the diversity of Slovenian fossils and at the same time it raises the question of what the future may hold for us, especially in relation to climate change. Therefore, it also has a meaningful subtitle: *Looking to the past to reflect on the future.*

MONDAY, 13 SEPTEMBER 2021

SHORT ORAL-POSTER PRESENTATIONS

New information of ichthyology collection in Natural history museum in Split

Josip Boban¹

¹*Prirodoslovni muzej i zoo vrt, Split, Croatia*

INTRODUCTION:

Natural history museum in Split is founded on 19th March 1924. Ichthyology collection is one of the oldest collections of the Museum.

MATERIALS AND METHODS:

Some specimens collected before 1990 lack the data of collecting. Only 113 of 279 inventory numbers of the collection have a year of collecting (40,5%).

RESULTS:

From all the known data we can deduce that fish specimen, originally recorded as *Tetrodon fahaka* Hasselquist, 1762 collected in 1881 originated from the South Adriatic Sea was misidentified twice and although, it is the most probably *Ephippion guttifer* (Bennett, 1831), due to the damage of the specimen we can't exclude that it can also be a member of genus *Arothron* (Muller, 1841).

CONCLUSION:

This specimen may be the first record of that species for the Adriatic Sea, but there is no solid evidence of its origin. In further work, DNA analysis is required to precisely identify the species and radiocarbon dating is needed to find where and when the specimen was caught.

TUESDAY, 14 SEPTEMBER 2021

ORAL PRESENTATIONS

The oldest geological collection of NMNS—its roles in early geological studies in Japan

Atsushi Yabe¹, Naoki Ikegami²

¹National Museum of Nature and Science, Tsukuba, Japan, ²Mifune Dinosaur Museum, Mifune, Japan

INTRODUCTION:

The National Museum of Nature and Science (NMNS) is the oldest natural history museum in Japan, established in 1877; 10 years after the onset of new era (Meiji Period). Japan has shut its door during most of the previous Edo Period and establishment of modern museum was tightly linked to the influence of foreign cultures since the last stage of the period. We started to explore relationships between our oldest geological collection and early geological studies during that time.

MATERIALS AND METHODS:

Geological collections of NMNS, especially focused on paleobotanical collection, is studied based on specimen labels, writings on the specimens as well as published historical literatures.

RESULTS:

The oldest natural history collection in NMNS is those collected in 1872, one year before Vienna World's Fair in 1873. They were aimed to be collected partly for the exposition and partly for museum establishment. Mr. Yoshio Tanaka, the museum founder and officer of the Japanese government has requested local governments in January 1872 to collect and send them by the end of June.

First 25 specimens of NMNS paleobotanical collection were revealed to be collected in this activity. Localities of each specimen distribute throughout the territory at that time, some of which were further studied in the first paleobotanical paper by Swedish paleobotanist and geologist, Alfred Gabriel Nathorst, in 1888.

CONCLUSION:

Unlike botany and zoology that were imported much earlier in middle of the Edo Period, geology and/or geological specimens were still not familiar with Japanese at that time. This first national activities may have contributed to people's recognition as well as to subsequent geological studies made by foreign researchers who have visited Japan since 1870s. A case study at forgotten locality in Kyushu area will be presented.

TUESDAY, 14 SEPTEMBER 2021

ORAL PRESENTATIONS

Changes of SROI of natural history museums by Digitalization of activities under COVID-19 - case of Osaka Museum of Natural History -

Daisuke Sakuma¹

¹Osaka Museum of Natural History, Osaka, Japan

INTRODUCTION:

Like in many other places on the Earth, Japanese Museums suffered Covid-19, and we had to close our museum 5.5 months in total during Feb. 2020 to June 2021 period, and 7 or more months of absence of educational activities of indoors and outdoors.

MATERIALS AND METHODS:

During lockdown, our staffs focused on many digitization works, not only specimen data, but also exhibitions, educational and communication activities. But that makes change in many points the way of museum affects people in society.

RESULTS:

1. Exhibition. Many museums had applied VR-exhibition on the web, as people could not access to the real exhibition rooms. It promoted wider range of people to access the museum in geometry, but in case of our museum, our VR mostly reached to natural history-fans, not to the wider range of interests. We should have other kinds of promotion activities on to the VR exhibition.

2. Indoor education. Gallery-talks and Symposium had moved to the Zoom and YouTube from gallery and lecture hall. The numbers of real time attendees were ranged from 50s to 200s and viewer numbers of recorded programs raised to hundreds or thousands. Lectures via web have obviously have advantage in geographically-free and time-free of access. Again, it enabled to many people to access museum, but was the „impacts“ of the experience really equivalent?

3. Outdoor education. We could not provide virtual-outdoor tours. Instead of that we provided self-guide leaflets usually we provide in the programs. And some YouTube instructions. But compared to the usual programs, it lacked many chances of participatory learning of attendees.

CONCLUSION:

People learn not only from museum staffs, but also other participants, including amateur biologists, longtime museum friends and so on.

Digitization liberated museums from geographic and time bind, but possibly in the expense of the chance of participatory learning.

TUESDAY, 14 SEPTEMBER 2021

ORAL PRESENTATIONS

Collections of the department of geology as a research environment

Mirijam Vrabec¹

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INTRODUCTION:

The Department of Geology has managed to create one of the most important natural history collections of minerals, rocks, ores, fossils and bone material. The collection was established in 1920 by Dr. Karel Hinterlechner, who at that time was the head of the Department of Mineralogy and Petrography. He was aware of the exceptional importance of a quality collection and its role in the good study of geology. Therefore, he intensively procured samples from various sources. Today, the collection includes 14,727 specimens of minerals, rocks and ores, 8,719 specimens of fossils, 437 stratigraphic specimens and 733 specimens of bone material.

For many years the collection was divided thematically and placed in different locations. Since 2018, it is united and located on Aškerčeva 12 on three levels, between which a direct transition is possible.

MATERIALS AND METHODS:-

RESULTS & CONCLUSION:

The collection offers a very diverse range of specimens, rare and unique specimens, some of which can only be found here. Often it happens that we want to expose certain specimens from the collection to individual types of analysis for various reasons. The question therefore arises, when and to what extent it makes sense to carry out such analyzes, not to reduce the value of an individual specimen. Some of the samples are unique, coming, for example, from parts of shafts that are now already closed and are actually evidence of past workings to which we will never again have access. How do we assess the value of such samples and does it even make sense to expose them to any potentially destructive analysis? How one determines the true value of such samples and the effectiveness of individual research remains an open question and is more or less in the hands (or conscience) of the individual.

TUESDAY, 14 SEPTEMBER 2021

ORAL PRESENTATIONS

Research on Coleoptera Collection of Dr. Eduard Karaman (1849-1923)

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INTRODUCTION:

The Coleoptera Collection of Eduard Karaman, MD (1849-1923) is stored since 1924 in Natural history museum in Split, Croatia. It consists of 30.814 pinned specimens identified to 8.872 species or lower taxa.

MATERIALS AND METHODS:

Each specimen of the collection is numbered, digitized and the data are analysed. Taxonomists interested in the collection had access to specimens, in the museum.

RESULTS:

The lower taxa belong to 1.496 genera and 92 families of beetles. Almost cca 40% of specimens are lacking labels with locality data. Some 30% of labelled specimens were collected in Split vicinity by Dr. Karaman himself. Other specimens originate from numerous localities across the Europe, Mediterranean basin and even Central Asia. The entomologist Petar Novak (1879-1967) managed the collection and rearranged it according to A. Winkler's catalogue leaving original nomenclature intact. He entered local faunistic data from the collection into his catalogue of 'Adriatic' coleopteran species that he published (1952). Some specimens, including holotypes sent to specialists were lost due to the 2nd WW (*Ceutorhynchus karamani* Müller, 1921) or some uncertain circumstances (*Pselaphus salonitani* Karaman, 1940, *Trimium karamani* Reitter, 1913). Dr. Guido Nonveiller (1913-2002) discovered almost forgotten museum holotype *Anemadus karamani* Ganglbauer, 1899 in 1997 and Dr. Michel Perreau confirmed taxonomical status of the specimen in 2004. Specialists that studied their target beetle group (*Pselaphinae*, *Leiodidae*, *Dasytidae*, *Malachiidae*) found our collection to be very complete in faunistic way. They noticed a few inaccurate identifications and Dr. Claude Besuchet confirmed in the material a pselafid specimen with provisional name *Pygoxion spalathrense*, as a new holotype of a species not yet described.

CONCLUSION:

The Coleoptera Collection of Dr. Eduard Karaman has scientific and historical value. Taxonomical revision of each specimen is to be done and it is necessary to invite specialists who could conduct the research in the museum.

TUESDAY, 14 SEPTEMBER 2021

ORAL PRESENTATIONS

Naturalias from the 18th century in the museums of Le Mans

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INTRODUCTION:

The first museum in Le Mans (Sarthe, Pays de la Loire, France) opened on 21st June 1799. It is one of the oldest public establishments in western France.

MATERIALS AND METHODS:

During the first half of the 19th century, this museum focused its collections on natural history. It acquired two particularly ancient ensembles, made up of objects mainly collected at the end of the 18th century:

RESULTS:

- A donation from Muséum national d'Histoire naturelle de Paris in 1799, of which 61 specimens have been preserved. These include fossils of fish from Monte-Bolca seized by the French army in Verona (Italy) in 1797, a mammoth tusk brought back from Siberia in 1747 by Joseph Deslile (1688-1768), two birds attributed to the collections of the Stadtholder of Holland seized in 1795 in the Netherlands, bryozoans, corals, gorgonians as well as minerals and ores, including a native silver from Kongsberg (Norway) donated in 1770 by Christian VII to Louis XV.

- The purchase of Louis Maulny's (1758 -1815) natural history cabinet in 1816. A total of 298 specimens have been preserved from the collection of this naturalist born in Le Mans. The mineralogical catalog kept by Maulny included 1398 numbers of which 272 have been identified to date, which represent 19.5% of his collection of minerals. Coming from all over Europe, they were acquired through exchanges with scientists such as Déodat Gradet de Dolomieu (1750-1801) and through personal collecting. They are representative of mining extractions from the end of the 18th century.

The rest of the Maulny collection consists mainly of osteology, including 13th century walrus tusks from Greenland that illustrate the ivory trade in the North Atlantic during the Middle Ages.

CONCLUSION:

All these naturalias are today kept in the Musée Vert, natural history museum of Le Mans.

TUESDAY, 14 SEPTEMBER 2021

ORAL PRESENTATIONS

Understanding and preventing discoloration of botanical wet collections

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INTRODUCTION:

The discoloration of botanical specimens preserved in fluid is a well-known recurring issue for many collections of natural history museums and universities. Two projects addressed this issue through experimental research: FLUIDIS (2019) and LIQUOR (2021-2022).

MATERIALS AND METHODS:

Various types of specimen (flowers, leaves, fruits, roots) were selected to prepare mock-ups in different fixatives (formaldehyde, FAA, none) and preservatives (formaldehyde, ethanol, white rum, glycerol). These mock-ups were monitored regularly for 3 months and again after 18 months from the preparation. Imaging, colorimetric (CIELAB) and UV-Vis spectroscopic techniques were used in order to understand how the discoloration process was unfolding.

RESULTS:

These data showed that discoloration is happening in different fluids and at different rates depending on the specimen. Colorful pigments, such as chlorophylls, carotenoids, betalains and flavonoids, tend to leak quickly in alcohol-based preservative independently of the fixation process. Those same pigments degraded inside the fluid after 18 months. In comparison, tannins leaked more after being in contact with formaldehyde. When preserved in glycerol, all the specimens showed less discoloration.

Other changes such as softening, stiffening or shrinkage of the tissues have also been observed. They seem to be fluid-dependent. For instance, alcohol-based preservatives seem to stiffen all specimens, whereas glycerol seems to cause shrinkage in fleshy specimens (i.e. fruits) and softening in thinner tissues.

CONCLUSION:

FLUIDIS showed the importance of adapting the preservation protocol to the specimen and the conservation goals. Based on those results, the ongoing LIQUOR project aims at finding ways to reduce the discoloration process. It follows a similar experimental methodology and tries out historical and modern recipes to either fix the dye inside the specimen or slow down its leaking and degradation inside the preservative fluid. First results are expected by the end of 2021 and will be presented at the conference.

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