

MUSEUMS OF KAZAKHSTAN AS CENTERS FOR PRESERVATION AND POPULARIZATION OF PALEONTOLOGICAL COLLECTIONS

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Abstract: The relevance of the research is conditioned by the necessity of studying and preserving the sites of natural and cultural heritage as well as scientifically describing and presenting it in museums. In many countries, it is museums that become centers for revealing, studying, preserving and popularizing the monuments of nature, history and culture. With regard to this, the paper is aimed at revealing, studying and analyzing the complex of historical materials, literary and museum sources that allow validly setting out the question under study. The leading approach used for investigating the problem is the historical and systemic one. The work of museums on acquisition of paleontological collections was studied using the methods of quantitative and qualitative analysis of the information gathered. Paleontological methods were used for studying the fossil materials. The paper describes some aspects of museum activity in presenting the paleontological collections, exhibitions and other forms of work with collections, with difficulties of forming and keeping the museum collections and of presenting them at museums detailed. The role of museums in developing the cultural and educational activity has been revealed and that of museums as scientific centers for studying, preservation and popularization of paleontological collections has been justified. The materials of the paper are of practical use for museologists, culturologists, teachers, and research workers of natural science profile museums.

Keywords: Museum, paleontological collections, cultural heritage, display.

INTRODUCTION

Globalization, economic crisis and social transformation taking place in the world since the early 21st century have changed the attitude of the society to heritage. One of the main social and cultural institutions designed to take care of preservation of heritage are museums. The relevance of this research is confirmed by the fact that in many countries it is museums that become centers for revealing, studying, preserving and popularizing the monuments of nature, history and culture.

Museums are a special communicative system that is a part of the country's cultural space; they can play the part of a mediator in the "dialogue" of contemporary

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cultures, which speaks about the importance of studying the cultural heritage stored in museum funds (Patrusheva, 2001).

The specific character of display and exhibition work of museums having paleontological collections is based on the scientific and research activity the result of which is presenting the genuine evidence of development of the nature. In this case, display acts as the principal communication channel.

The historical and local lore museums of Kazakhstan have paleontological displays reflecting the biological history of the region in line with a certain scientific concept. As a rule, they rely on the own materials of a museum and on materials received from other collections.

The museum exhibitions are organized according to the thematic principle depending on the type of materials displayed (ones of funds, of other collections, complex ones) and on the location. Temporary exhibitions demonstrate the direction of scientific research, scientific achievements in study of certain problems and results of field expeditions. Quite frequently, the museums technical equipment level does not allow showing all this in a stationary display, so the temporary exhibitions are attractive for visitors. They evoke interest for the museum and promote the development of museum communication.

As of today, the problem of display demonstration of collections is very relevant for many Kazakhstan museums. A paleontological display turns into a special information system reflecting the phenomena of the historical process via the museum items (exhibits) as sign components. The display is constructed by its authors through comprehending the exhibits with an eye to the perceiving subject's understanding them in a certain way (Arzamastsev, 1989). Recently, the problem of creation of paleontological display complexes has been at the discussion stage. This problem is quite important and timely for the contemporary museology of Kazakhstan, so a further analysis of this problem range and discussion of it in scientific, historical, and museological environment is essential (Nurpeisov, 1997).

LITERATURE REVIEW

The scientific institutions and local lore organizations of Russia have the practice of holding paleontological museum colloquia "Paleontology in museum practice". Over forty specialists – museologists, scientists from the universities of Russia, Mongolia, the Ukraine and other countries – take part in them annually (Naugolnykh, 2014).

Museums of Russia have a great experience of presenting the natural history collections. It is important to note Yu.A. Orlov Paleontological museum (Paleontological Institution of the Russian Academy of Sciences) which is one of the world's largest natural history museums, Saint Petersburg museum (the museum of

Zoological Institution of the RAS), museums in Moscow (Moscow State University Museum), Kazan (Kazan State University Museum) and others.

The Natural history museum of Great Britain carefully preserves and uses for outreach and educational purposes its numerous collections, also employing them actively within the system of scientific, business and other kinds of tourism (Hudson & Nicholls, 1987).

The US Smithsonian Museum of Natural History is widely known for its research and training programs including lectures, scientific discussions and communication with museologists.

The mission of the University of California Museum of Paleontology (at Berkeley, California, USA) is presenting the paleontological collections and studying the history of development of the organic world and diversity of biota of the Earth. Annually, the Museum arranges various scientific courses. Among the most recent ones, there was “A new look at old bones: Insights into dinosaur growth, development and diversity”. Such courses are a perfect way for attracting the public audience, in particular, the teachers interested in paleontology research (<http://www.ucmp.berkeley.edu/about/index.php>).

In Amsterdam museum of nature, photographs of rare or extinct animals that are of scientific interests are preserved, and the work experience of the museum includes using these pictures. In covering the problems of ecological and cultural environment, a great role is vested in “eco-museums” that perform the functions of estimating and keeping the cultural and natural heritage also by creating the open-air park museums – natural reserves (Volkova, 1989).

Terra Amata museum (Nice, France) focuses on studying and presenting the objects belonging to prehistoric times. For work with visitors, they use the traditional lecture-excursion (for senior schoolchildren) and an active visit (for younger schoolchildren). In it, after a brief introductory part, the children see the display by themselves, with a guide following them and answering questions, if there are any. After seeing, the guide gathers the children to find out the results of their independent research. Each schoolchild gets a booklet containing a brief description of everything they have seen. Senior students take a mini-exam: they have to identify to which well-known excavation site the images in the photographs or slides of objects belong. The method was highly appraised by the Ministry of Education of France. The museum also has got special workshops where children can learn the equipment and technology of excavations and play scenes of prehistoric life (Goudet, 1988).

The museum of Aquitaine (Bordeaux, France) presents the prehistoric period from the viewpoint of paleontology, geology and biology. In its work with schoolchildren, the museum offers them to study its “Prehistoric period” collection.

The children are handed out questionnaire cards with questions, keywords, figures to fill out or with the task to make up the text for a picture of a prehistoric plot. Topics on prehistoric pangolins are studied by children aged 8-12 at “Amuseum” club of young naturalists founded at the museum. For adults, there are scientific movies demonstrated in four European languages giving the main information on osteology, evolution of species, and the habitat of the primitive human (Memoire, 1988).

A special place in the paleontological collections presentation practice of foreign museums is occupied by exhibitions. Goethe National museum in Weimar has a special exhibition “Thuringia fossils of Goethe collection”. The exhibition familiarizes the visitors with the poet’s hobby – collecting natural history items. Fossils are presented against the background of the historical documents on paleontology and the contemporary geological images. The five systems of geological temporal scale of the most frequently occurring fossil groups some of which are yet to find within Thuringia are visualized (Kahler et. al., 1990).

In the Geological museum of the National scientific and nature study museum of the People’s Academy of Science of the Ukraine, alongside with the monographic paleontological collections that are the national scientific assets and state reference of international importance, there are also old collections stored that are unique by their historical, scientific value and impossibility to gather the samples again – these are the old Krantz in Bonn collections (Germany). In the 1930s, a part of this collection was handed over to museums of Austria and France (Anfimova, 2010). The scientific importance of the collections is beyond doubt as they can act as comparative scientific material. Owing to the excellent preservation, the collection is representative, attractive and it can be put on display. It is not only in the very object that its museum value consists but also in the information pertaining to it (Guthe, 1964).

The information value and good presentation of paleontological museum collections are an indispensable prerequisite for attracting the tourists to the museums. For instance, the members of Transylvanian society “Siebenbürgischen Vereins für Naturwissenschaften zu Hermannstadt” founded a Natural history museum in which over one million objects on the region’s natural history are displayed, including the items on paleontology (Ciobanu & Stoica, 2005-2007).

The University of Saragosa Museum of Natural Sciences houses one of Spain’s most significant collections of fossils. This is a new museum in which the fossil collections of the Paleontological museum of Saragosa University are united with the historical collections of the university. All materials are indexed in File Maker database and are available for consulting to any researcher addressing them (Canudo, 2017).

METHODOLOGICAL FRAMEWORK

The analysis of the museum as a research object is based on the historical and systemic approach. The latter being currently the most widespread direction of the scientific cognition methodology and social practice orients to revealing the integrity of the object, its mechanisms, finding out the diverse bond types of the object and bringing it into a united theoretical picture.

The research was conducted within the time span from 2004 up to 2016 with an objective to historically reconstruct the process of revealing, scientifically describing and interpreting the paleontological collections in museums of Kazakhstan and other countries.

For studying the fossil materials, the methods of paleontology based on analyzing the successive change of animal and plant complexes over time were used, as well as surface pickup, excavations, mechanical and chemical preparation, polishing, identification of remains of the fossil animals. With participation of the authors, historical reconstruction, conservation and restoration of skeletons of the fossil animals were performed.

The study of the museums' work on acquisition of paleontological collections was conducted using the methods of quantitative and qualitative analysis of the information gathered.

When acquiring the material which formed the basis of the research, the empirical methods of sources and information collection were also used. Special scientific literature was studied in order to determine the scientific significance of collections.

Data processing and the analysis of paleontological collections available in museums were performed by studying the paleontological literature and the museum sources. Such approach has been in use for the recent 200 years. As new computer technologies associated with the contemporary databases (digitization of collections, statistics) appeared, the new forms of visual presentation allow passing to employment of new techniques and expand the opportunities for research considerably (Sepkoski, 2013).

RESULTS AND DISCUSSION

Proceeding from the analysis of development of museology (in particular, based on the way how paleontological collections are presented) in various countries, it can be noted that the experience of museums of Kazakhstan is quite comparable with them. Further on, some aspects of Kazakhstan museums activity in this direction are described.

Northern Kazakhstan regional historical and local lore museum has had a new display of the department of nature since 2005. The paleontological exhibits

are presented in the “Emergence of life on the Earth” hall. Of all the museums of Northern and Eastern Kazakhstan, it is only the display of Northern Kazakhstan regional historical and local lore museum that has got a map of paleontological locations of the region. The paleontological exhibits are presented against the background of panoramic landscape panels that reflect the appearance and habitat of the fossil animals.

In Kokshetau regional historical and local lore museum, the principal paleontological exhibits of especial value are placed very low (on a podium reaching only 15 cm from the floor level), which is uncomfortable for adults so the designed impression works for children only. Such “presentation” of, say, the Etruscan rhinoceros skull markedly depreciates the importance of this find which is so rare for Kazakhstan. However, this is due first of all to the lack of display rooms. The point is that this display was constructed with particularities of the hall allocated for paleontology borne in mind, so if the paleontological exhibits had been raised to a high podium, the space for demonstrating other paleontological finds that are not less interesting would have been scaled down considerably.

For a long time, Eastern Kazakhstan museum had had no room to set up its work. It was only in 1967 that the regional museum was granted a new building and this is where it is situated nowadays. Its total area amounts to 1200 sq. m., with 800 sq. m. being the display area. Yet the paleontological display of the museum (given its rich paleontological funds) is not presented in a complete way. First of all, this is due to the lack of an expert paleontologist and to the nature department employees being keen on studying the contemporary flora and fauna.

It was only in 1937 that Kustanai regional historical and local lore museum was granted a permanent building for the museum. At the brick wall in the yard, mass shootings of the Communist party, Soviet workers, and Red partisans were conducted. The wall has kept bullet marks until nowadays. To commemorate the fallen fighters for the people’s cause, in 1938 the building was handed over to the museum for permanent use with all the outbuildings as a monument of historical and revolutionary importance. Then, a stationary display on the nature and history of the region was opened at the museum, and exhibition work was active too. At the museum, they kept a nature corner and an experimental ground where rubber-bearing plants were grown and agronomical recommendations could be received. In 1937, three departments were organized at the museum: the department of nature, the history one, and that of the region’s contemporary history. Such concept of a regional and local lore museum was inherent in the majority of museums of Kazakhstan for a long time.

Currently, of all the local lore museums of Northern and Eastern Kazakhstan, it is only one (Kostanai museum) that has got no permanent display of ancient nature. The practice of work of this museum includes the development of a scientific

concept of nature study display in the specific exhibition display of paleontological rarities “The remote past of the Earth”. The paleontological materials are exhibited that have never been displayed before. The correlation of the exhibition with the curricula and the unique character of the material displayed guaranteed it being in demand with schoolchildren and students. It should be pointed out that holding a paleontological exhibition was a very valuable work experience as a result of which the museum gained a high rating in work in this direction among the culture and leisure institutions. The museum has got its own technique of exhibition work as well as equipment for organizing the exhibitions. Institutions, organizations, and private collectors concerned provide the museum with the required objects, collections, documentary material which later supplements the funds of the museum.

The paleontological hall of Pavlodar regional historical and local lore museum named after G.N. Potanin creates a picturesque and bright impression of the world of ancient animals (Islyam, 2003). Two great skeletons of fossil animals – mammoth and megaloceros – are not only the pride of the museum but also its brand identity. In the museum display, paleomaterials are presented that originate from the unique paleontological monument of nature “Gussinyi perelet” (lit. Geese passage) – a skeleton of Hipparion, a fragment of jaw of ancient hyena, a skull of *Chiloterium* rhinoceros and other equally interesting exhibits (Aliyassova et. al., 2014).

The paleontological collections of regional historical and local lore museums of Northern and Eastern Kazakhstan amass important materials on the fossil flora and fauna of the region under study. The importance of preservation and creation of conditions for accessibility of the paleontological material for developing various directions of biological and geological sciences as well as the educational process of the future generations is evident.

The study the paleontological materials took place simultaneously with advanced study of remains of organisms belonging to individual systematic groups. Such an approach promotes qualified taking inventory of the museum funds, studying the previously accumulated collections and reviewing of taxons set earlier. This has allowed discovering and describing a new species of fossil elephant (Shpansky, 2005), conducting the research and making more precise the time of Siberian *Elasmotherium* living (Shpansky et. al., 2016).

One of the main problems in creating a paleontological display is the majority of Kazakhstan museums being housed in buildings that are not fit for presentation of paleontological exhibits (in most cases, the museum buildings are monuments of history and architecture). First, it is quite challenging to maintain such buildings and they need restoration works virtually every five years. Second, the inner structure cannot be rebuilt in any way, so the displays of museums are designed with the existing building halls layout borne in mind. Thus, the displays have to be constructed while fitting them into the rooms available, which is not only uncomfortable but also at times prevents the display designer’s idea from being

completely embodied. Generally, paleontological finds are less attractive when merely presented as a display. Meanwhile, they are more representative when they are set up as reconstructed skeletons of fossil animals, which is not always possible given the small areas, height and width of halls adapted for displays.

Most museums group and interpret their paleontological material according to the historical and chronological principle of display construction. In line with the principle, the paleontological materials are displayed according to the chronology accepted in science. As any museum is a historical one in its essence (be it the history of the society, nature, art and so on), the application of the principle is far not limited by the historical profile museums. The same principle underlies the design of Moscow Paleontological museum, many halls of the Polytechnical museum, biographic parts of displays of the memorial museums etc. (Kaulen, 2005). The historical and local lore museums of Kazakhstan are no exception as well.

Keeping and constructing its displays in an ancient building makes the museum a sight of culture and leisure, tourist sphere of the city. Such buildings being monuments of history and architecture are themselves exhibits within the city landscape. Given the content of the display, the order of grouping and organizing the paleontological materials in regional historical and local lore museums of Northern and Eastern Kazakhstan, two displaying methods can be singled out: the systematic and the landscape one.

Systematic demonstration places the paleontological materials according to the geochronological scale (Voitkevich, 1984) which is based on a certain combination of fossil organic forms corresponding to the strata of various ages. This fact is a proof of continuous change in the development of life on the Earth, which is what allowed deciphering the stone chronicle of the Earth's crust. The systematic demonstration of paleontological materials was used when constructing the display at Pavlodar regional historical and local lore museum named after G.N. Potanin and at Eastern Kazakhstan regional historical and local lore museum.

As for the landscape method, here the most frequently used technique is that of panoramic demonstration. In the landscape panorama, landscape is an auxiliary means for highlighting the place and time of living of a fossil animal the bone remains of which are displayed in the foreground. This method was used in constructing the display in Semipalatinsk regional historical and local lore museum and in Northern Kazakhstan regional historical and local lore museum.

It is important to mention that even J. Cuvier (1769-1832), the founder of paleontology, pointed out the necessity of submitting the paleontological finds to museums with covering information ranging from the circumstances of their being picked up in a field up to publications as engravings with explanatory text (Rudwick, 2000). When preparing the paleo-landscape panoramas in museums, display designers make images of fossils, restored plants and animals, as well as environmental restorations in dioramas, graphs and sculptures. Such scientific

illustrations are quite popular in children's textbooks, books on paleontology, and on collections of museums (Davidson, 2008).

CONCLUSION

Thus, the majority of historical and local lore museums of Northern and Eastern Kazakhstan containing nature departments in their structure have paleontological exhibits on display. The presentations of paleontological collections of the region under study can be upgraded if the work experience of foreign natural science museums in this direction is investigated. Local lore museums and natural history museums offer a realistic experience attracting the public to paleontology and thus improving the literacy in this field as well as awareness in questions of natural heritage preservation (Reis et. al., 2014).

Museums perform an important culturological function in a particular idiom which is inherent only in them. They enrich and form historical consciousness, memory, sense of patriotism and inclusion into the world and regional heritage. The contemporary technical advance (computers, video and audio recordings) allow expanding the educational functions of museums (Sapanzha, 2005).

Communication processes taking place at museums are multi-dimensional. They encompass both the processes of specifically museum way of information processing that is implemented in main directions of museum activity (funds, display, educational and other types) and the ones that allow involving the museum communication into the general cultural communication processes associated with preservation and interpretation of the historical and cultural heritage and its inclusion into the range of the contemporary culture (Kulemzin, 2002).

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