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NATURE MUSEUMS AND THEIR ACTIVITIES FOR ENVIRONMENTAL AND FOREST EDUCATION

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ABSTRACT: The aim of the article is to show the specificity of nature museums and their functions in the field of natural and forest education. The paper presents the idea of nature museums in Poland and their functions (eg. educational, informative, fun). Discusses the activities of museums with collections of natural and isolated from this collection of museums typically forest museums. The analysis and the results show the diversity of these institutions on many levels: location, content of collections (the specifics of collection), the presentation of collections, educational activity.

KEY WORDS: nature and forest education, nature museum, functions of nature museums, forms of education

Introduction

Education is a universal value and a basic human right. Within the framework of it should be taken actions to support the full development that will prepare him to the unremitting efforts, increase its capacity for autonomy and personal responsibility. The main task of education is a multilateral development of the personality of the young generation, active in three areas: knowing the world and changing it, and live the values (Paško 2009). According to UNESCO, a man twenty-first century should use all possible opportunities to update, deepen and enrich their knowledge and adapt to the changing world (Delors 1998).

Education can be realized in the process of formal and informal. Formal education (schools, universities, etc.) has a specific curriculum, the associated plan of activity and defined content. Students have the chance to meet the need for competence only partially, rarely able to demonstrate in action. For the young audience a sense of purpose and meaning of science can thus be disturbed, the presentation of the topics can not be linked either to the interests of the student, or the surrounding reality (Okoń 1998).

In many cases, the formal education system for various reasons do not meet all the educational needs of young people. The opposite of this type of education is informal education, in which the individual uses the educational impact of the environment in which he resides, collecting observations and experience. Basically learns from family, friends, neighbors, colleagues etc., casually absorbing the things heard, seen repeated, what is important to her, new, interesting. Non-formal education has no purpose, structure or plan (Okoń 1998, Anderson et al. 2002). Often this category are included classes on wheels interests or in museums, science centers, art galleries, theaters, botanical gardens and zoos. Such activities already at school level can give the opportunity to develop an integrated, attractive to recipients and effective environmental education. The place of this type of activities can be nature museums, where the activities for environmental and forest education is an issue taken up in the present work. Although the literature on museums is quite extensive, there are no studies on the polish museums that collect natural history. The knowledge about the specifics of these museums and their activities is small compared with other countries, eg. Denmark and the United Kingdom (Kordowska 2015). Problematic is also an indication of the number of museums of natural history and a clear distinction of this type. According to the GUS (2015) in 2015 in Poland functioned 843 museums, 30 of them defined as natural. The Base Museum National Institute of Museology and Protection of Collections of National distinguishes 13 nature museums, and the portal of all the existing museums in Poland (www.museo.pl),

identified 37 such facilities. These differences may be caused by discrepancies in the definition of museums of this type by various institutions and organizations.

Research methods

For the purpose of the work we analyzed a variety of information on the nature museums. They were Central Statistical Office of Poland (GUS) statistics and data of the available publications and other numerical combinations. For the purpose of the work the authors have tried to define the nature museums. For them, the nature museum is an institution whose main activity is focused on the acquisition, preservation, collection and sharing collections of a live or dead specimens of nature. Its non-core functions can be educational activities in this field, as well as research activities and publishing.

Nature museums and their role in education

The authors identified in Poland 56 nature museums. They are distributed throughout the country, but the largest number of them is in the Malopolska province – 10 units (figure 1). In the area of the province also it operates the largest number of museums in total – 119 objects (www.stat.gov.pl). Regions with a significant number of institutions of this type were, moreover Mazowieckie and Podlaskie.

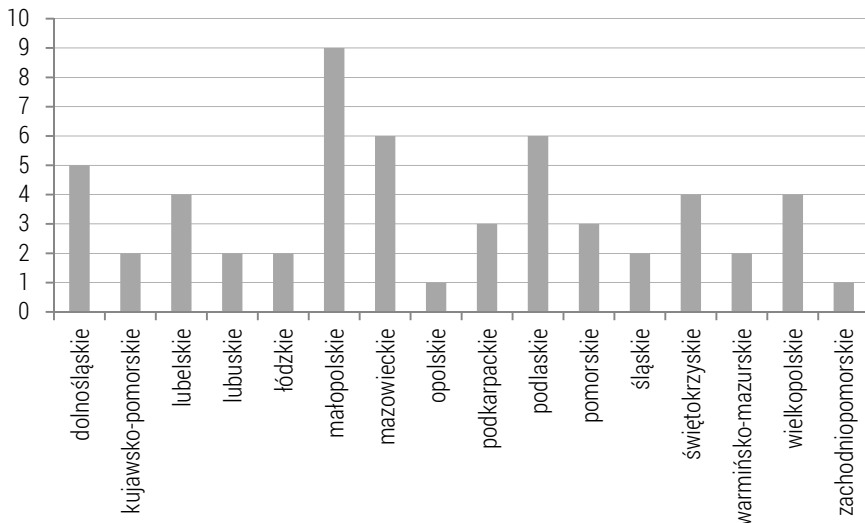


Figure 1. Nature museums by provinces in Poland

Source: author's own study.

The smallest number of museums of natural history recorded in the Opole province, Podkarpackie and Śląsk – 1.

From the point of view of maximizing the number of visitors it is advisable location of the museum in interesting regions in terms of nature. It is then the possibility of extending the educational offer of workshops directly in the natural environment. This element is valuable because of the variety the most cameral museum lessons. Important functions perform museums located in areas or near national parks or scenic – the hour drive (Kordowska 2015). In the area of valuable natural area operated 26.7% analyzed institutions (figure 2).

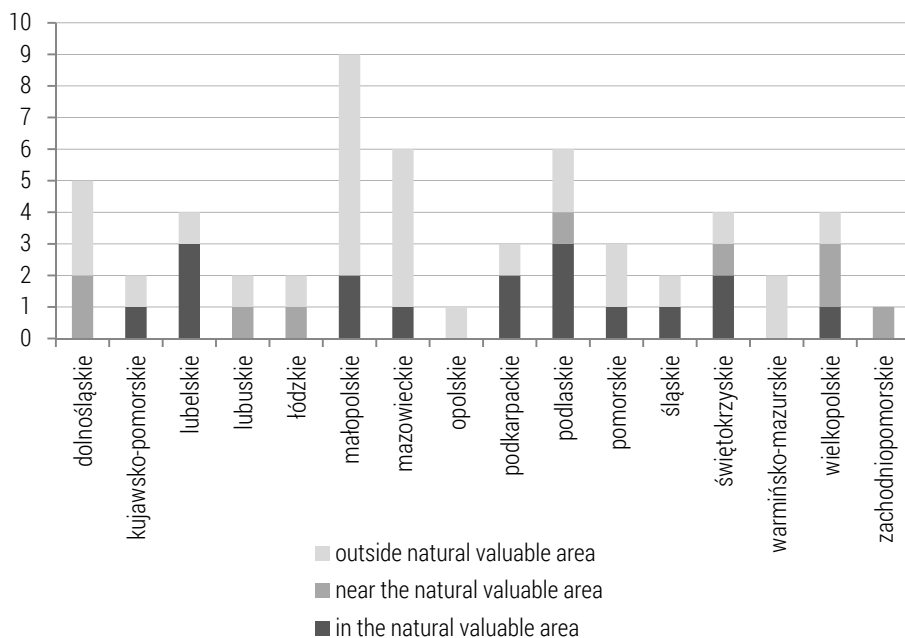


Figure 2. Location nature museums of terms of nature valuable areas

Source: author's own study.

Nature museums besides valuable natural areas, eg. In urban areas, have a more difficult task. In order to make offer more attractive in these facilities you can build interesting nature trails at the museum building or acquire attractive dioramas (Stasiak 2000). Besides valuable natural areas it recorded 55.3% of this type of museums.

Presentation of collections in nature museums

The nature museums are presented a variety of natural history collections. In about 70% of the analyzed objects dominated zoological collections (dermoelastic or dissected preparations of mammals, birds, fish and reptiles, horns and antlers, entomological collections). There were less numerous museums, which presented mostly botanical collections (herbaria and driers, sections of trees, exhibitions of vegetation). In addition, for a more attractive offer education in nature museums can meet collections paleontological, geological, and entomopaleontological.

Against the background of nature museums in Poland stand out facility with the living "exhibits" for example Museum of White Stork in Kłopot (Lubuskie), where there are currently more than 30 stork nests. In the museum you can see an exhibition dedicated to the stork and embark on a tour of the area educational path. Another distinctive building is the Meadow Museum in Owczary possessing exhibition devoted to Polish and grassy ecosystems of the world.

The Museum Missionary-Ornithological in Kodeń you can see the ornithological exhibition, containing the collections gathered by Kazimierz Kozicki – a collection of birds' eggs of Polish species.

Most often in museums collections presented in the traditional way. Specimens can be seen, not touched, they are arranged at a distance from the visitor (table 1). In turn, the interactive form of sharing collections of exhibits is a presentation using modern multimedia techniques, eg.: multimedia presentations, film science, visualization, as well as replicas or models that can be touched.

Table 1. Examples of presenting collections of nature museums

Presentation of the collection	Examples of exposure	Museum facility
Traditional	Designed exhibitions and exhibits	Museum of Natural History, Ethnography and Art in Srokowo
Interactive	Kiosks with touch screen	Ojcow National Park Museum, Poleski National Park Museum, Nature and Forest Museum, Bialowieza National Park
Virtual	Presentation of the exhibition is available in the form of on-line or other digital media; virtual tour of the museum	Museum of Natural History, University of Wrocław

Source: author's own study based on the data contained on the websites of selected nature museums.

Computer technology now allow to explore the museum in a virtual way – exhibits are made available via the Internet. These resources can occur in two forms: as a museum entirely virtual or supplement the traditional museum.

The importance of nature museums in environmental education

The most extensive museums function seems to be the educational function. This activity mainly includes educational activities and exhibition, accepting the form of museum lessons, leadership, cooperation with schools and publishing (Kordowska 2015, Munley 2012, Folga-Januszewska 2010, Nyhart 2001, Suarez, Tsutsui 2004, Ponder et al. 2001). The most common form of activity are permanent and temporary exhibitions, museum lessons, educational workshops, screenings of nature films, seminars, conferences, lectures. Often these are integrated into classes (eg. a combination of a multimedia presentation with practical exercises) to make their form the most attractive (table 2).

In addition to the permanent exhibitions important function in the education act temporary exhibitions. Sometimes in museums take place several temporary exhibitions a year, so tourists can visit the same facility several times. Temporary exhibitions concern, among others the presentation of the art of painting (The opening of “Culture Lomza painted with brush” at the Museum of Nature in Drozdowo, exhibition of photographs (eg. photographic exhibition “Palace of the tsar in Białowieża” at the Museum of Białowieża National Park, a photographic exhibition by Andrzej Waszczuk “One hundred views of Warmia” the Museum of Nature in Olsztyn, “tropical forest”, “exotic pets” at the Natural History Museum in Krakow), presentations of interesting exhibits of flora and fauna, or travel reports (“South America through the eyes of naturalists” – Natural History Museum in Krakow). Sometimes during the presentation temporary exhibition in the museum presents live specimens of plants and animals.

The nature museums are also made available library collections. The vast majority of the volume at the broad nature. Within the department of natural stands library collections devoted to: botany, zoology and nature of the region.

Table 2. Types of educational activities at the Natural History Museum in Wrocław

Type of classes	Form of classes	Examples of topics	Recipients
Museum lesson	Power Point presentation	Threatened and endangered species in Poland and in the world (CITES)	Junior high school, high school
Museum lesson	Exercise: Exhibit Museum (2 x 1 hr. for the group)	Threatened and endangered species in Poland and in the world (CITES)	Junior high school, high school
Museum lesson	Presentation (PowerPoint) 1 hr., exercise – based on the work card, visit exhibitions Museum – 2 hours.	Earth – Water Planet Water – environment fish life	Primary school, middle school
Workshops	Workshop – 2 hours. (Among others about how they look, what they eat, how they hunt owl, barn owl, tawny owl)	The mysteries of the life of owls	Primary school, middle school
Classes integrated	Presentation (PowerPoint) 1 hr. + Classes at the large exhibition hall 1 hour. (For 2 groups of 15 people); Exercise: exercises room 1 hour + Classes at the large exhibition hall 1 hour. (For 2 groups of 15 people)	Morphological characteristics of molluscs (snails, bivalves, cephalopods, chiton) and examples of the most unusual.	Primary school, middle school
Practical work in the field	Fieldwork (one trip)	Insects around us	Junior high school, high school
Guided tour	Story	Nature around us	Kindergarten groups, students in grades 1-3 elementary school

Source: author's own study based on www.muzeum-przyrodnicze.uni.wroc.pl.

Museums of forest

Among the museums of nature can be divided into those whose collections relate to issues of forestry and the forest environment. In Poland, it was awarded 9 of its kind museum (table 3).

An interesting example is the Museum of Forest and Wood in Rogów where educational needs prepared mock exposing three forms of land use: forest reserve, an area of relative biological balance and the area of ecological threats. In this museum are available the following exhibitions: "Meeting the forest", two dioramas forest, the exposure of forest species from the "Polish

Red Book". An interesting exhibit is a collection of 18 historical "books of wood" made of wood various species of trees and shrubs from the beginning of the nineteenth century . the spine of each book is made from the bark of different species of trees, and cover with a cross-section of the tangential wood.

Table 3. Types of educational activities in selected museums of forest

	Name of museum	Subject	Educational activities
1	Museum of Forest and Wood in Rogów	Collections represent different disciplines forest, zoological, entomological and ornithological	Conduct museum lessons and chamber music field
2	Forest Museum in Forest District Spychowo	Ornithological collection, historic hall	Educational activities with a forester
3	Forestry Museum – Cultural Centre Forest in Gołuchów	Exhibitions "Culture-the role of the forest" and "History of forestry in Poland", "Forest machinery", "Forest protection".	Educational activities with a forester, a virtual walk
4	Spruce Istebna Museum in Jaworzynka	History Beskid spruce stands, and research into, and the cycle of growth spruce Istebna, aviary grouse.	–
5	Private Museum of Nature and Hunting "Łuczakówka" in Krynica-Zdroj	Zoological exhibition, a collection of complementary exhibits African fauna.	–
6	Museum of Hunting and Horsemanship in Warsaw	Polish hunting room at the turn of the century; dioramas zoological Powozownia namely Zbigniew Prus-Niewiadomski.	Museum lessons, conducted by teachers of content in an attractive setting museum exhibitions, virtual walk
7	Nature and Hunting Museum "Knieja" in Nowosiolki	Exciting and interesting hunting trophies, "Kabarga" – hunted in Siberia "reindeer" (antlers) from Lapland "brown bear" coming from the Siberian taiga with a deep, beautiful wildlife. Very popular is the Carpathian deer, which has become a symbol of the Carpathian Landscape Parks. For the purpose of teaching are presented forms of development antlers and roe deer.	Guide
8	Natural History Museum of Hunting in Uzarzewo	Exposure to natural collection of birds' eggs with nearly 200 species.	Activities and museum lessons, educational events
9	Nature and Forest Museum, Białowieża National Park	Exposure to natural, dioramas.	Activities and museum lessons, educational events

Source: author's own study.

Another interesting example is the Museum of Forestry in Forest Culture Center in Gołuchów, which has two permanent exhibitions: "Culture-the role of the forest" and "History of forestry in Poland".

Another example is the Museum of Nature and Forest Białowieża National Park in Białowieża, where are presented exhibitions botanical, zoological and cultural heritage. At the exhibition you can admire the pieces of the ecosystem Białowieża Forest and scenes from the life of animals, for example prey of wolves. In the museum you can see the phase of wood decay and other ecological processes. The creators of exhibitions took care of setting the full sound and light exposure, so visiting the various exhibitions we are accompanied by the sounds of animals, singing birds and other sounds of the forest.

As part of the cultural exhibition shown how the historical use of the forest over the centuries (haymaking, bee-keeping, processing of wood turpentine and charcoal). All issues of nature are presented in program blocks through realistic dioramas depicting animals, fungi, plants in their natural environments.

Conclusions

The museum as an institution established to collect, study and care for objects having artistic or historical protective functions, educational and aesthetic. Their popularity is determined not only the value of collections, but the effective promotion and creating a positive image. We recommended to continue research in this area.

It is worth noting that the natural history museum in the modern world meets the many needs of young people, such as the need for aesthetic experiences, satisfying curiosity, deepening knowledge, forming worldview, search patterns and ideals of life, the need for a pleasant and valuable leisure time.

To museum objects changed their image from inaccessible exhibitions on objects attractive for modern-day tourists, it is an innovative approach to ways of presenting their exhibits and exposure. An important issue seem in this aspect may be activation of visitors during a visit to the museum building and creating the opportunity to hold a variety of workshops, courses and field exercises. Very important it is also the use of technological innovations, eg. multimedia and interactive exhibitions. Analyzing the offer of museums in the field of environmental education can distinguish several attractive, interesting and innovative educational solutions. These are: – interestingly organized classes and workshops museum using multimedia and interactive computer technology (eg. Natural History Museum in Krakow); sharing collections online through the organization of the so-called. e-museums (eg. Natu-

ral History Museum in Wrocław); – offering children and young people activities through participation in the creative process and cognitive (eg. Museum of Nature and Technology, Ecomuseum John Pazdur in Starachowice, Museum of Nature in Olsztyn); – offer for disabled children and youth (eg. Natural-Forest Museum of the BNP, the Museum of Natural History – ISEZ-PAN, the Museum of Natural Wolin National Park). In the modern world the museum is one of the most important institutions operating in the sphere of culture, because it is difficult to imagine a school trip without visiting museums.

However, as follows from the analysis, museums are not only treasuries luxuries, but actively participating in the development of science and culture, have become tourist attractions, and are an important factor in the development of tourism. One of the most important segments of the tourism market is young people and children, so the above analysis can be useful for many establishments museum in the preparation of appropriate educational offer for young travelers.

The analysis offers nature museums in Poland proved that, despite the common opinion about museums as individuals inflexible, proposing stiff and not very attractive program of sightseeing in discussed in the pages of this paper museums observe a significant change in the way of executing cognitive-educational. This is particularly noticeable in relation to the parts of the young visitors.

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The contribution of the authors

Conception: Jan Zawadka (50%) Joanna Pietrzak-Zawadka (50%).

Literature review: Jan Zawadka (50%) Joanna Pietrzak-Zawadka (50%).

Acquisition of data: Jan Zawadka (50%) Joanna Pietrzak-Zawadka (50%).

Analysis and interpretation of data: Jan Zawadka (50%) Joanna Pietrzak-Zawadka (50%).

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