

## REVIEW

# What is Natural History?

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## ABSTRACT

The Korean government has recently announced its plan to establish the first National Museum of Natural History. However, the Korean word for natural history, *jayonsa*, is not a very familiar term to some academics as well as the general public. This article discusses the definition and history of natural history, describes the functions of natural history museums, and makes suggestions to the establishment of our National Museum. Modern natural history is no longer an art of 'stamp collecting'. It is a comprehensive scientific endeavor pursuing to enlighten the history of the planet Earth and the diversity of natural objects it contains. Natural history museum must have two museums within the museum: the *outer museum* for exhibition and general public education and the *inner museum* for research and specialist education. I hope that our National Museum of Natural History will be a place where we all get to know about Nature and thus to love her.

**Key words:** Conservation, Inner museum, National Museum of Natural History, Natural history, Outer museum, Research collections, Teaching collections

## INTRODUCTION

Recently, the Korean government has announced that it would establish the first national museum of natural history. As many scholars, Professor Byung-Hoon Lee in particular, has repeatedly pointed out, it has been a national shame for a country looking to join other world leaders not to have any natural history museum. Countries like Uganda and Rwanda, two of the most underdeveloped countries in the world, have nine and three natural history museums, respectively. Even North Korea has one. The only museum in this country that may be considered as natural history museum is the small but beautiful museum in Ewha University, thanks to the dedicated efforts of Professor Boon Jo Rho and her colleagues. In this sense I am certain that every "natural historian" in this

country must be delighted with the Government's belated but ambitious plan for the National Museum of Natural History.

But, what is natural history? What kind of museum are we planning to build? Understanding the history and academic boundary of natural history is crucial to developing a sound scheme for our first national museum of natural history. In the following account, I review the history of the definition and scope of natural history as academic discipline. Then, I will comment on what an ideal national museum of natural history should be.

## DEFINITION AND SCOPE OF NATURAL HISTORY

The Korean word for natural history that we use nowadays, *jayonsa*, is not a very familiar term to some academics as well as the general public. Almost all English-Korean dictionaries translate 'natural history' as *pahkmulhahk*. Korean-English dictionaries also translate *pahkmulhahk* as 'natural history' and do not even have the word, *jayonsa*. One Korean-English dictionary I found translates *jayonsa* as 'natural death'.

Random House The American College Dictionary describes natural history as "the science or study dealing with all objects in nature." According to Dell The American Heritage Dictionary, natural history is "the study of natural objects and organisms and their origins and interrelationships." It means that natural history includes such academic disciplines as evolution and ecology.

Natural history got its name and scope from the first century Latin encyclopedia, *Historia Naturalis*, by Pliny the Elder (Porter 1991). As a busy Roman official, Pliny somehow found time to search through 2,000 books on various aspects of nature and described 20,000 facts in more than 37 volumes. During the first 100 years that followed Columbus' grand voyage of circumnavigation, natural history as intellectual endeavor flourished in full blossom. Rich and noble men in Europe during the 16th century Renaissance had the time, the means, and the intellectual curiosity to gather together objects of all kinds to build impressive personal collections mainly to show off to friends who had similar interests and level of intellect (Colbert 1961).

During the late 18th century, France, Britain, and Holland embarked on massive foreign explorations that eventually gave rise to the establishment of some of the largest national museums of natural history. The impact of such grand-scale explorations was crucial to the rise of the National Museum in Paris. The museum considered already one of the finest in the world at that time held 463 bird specimens in 1793, but the number increased by 3,000 within the decade (Farber 1977). The unearthing of large fossil animals also encouraged the study of natural history (Simpson 1942).

However, this almost blind effort of massive collecting and cataloging inevitably gave natural history, and taxonomy to certain extent, the look of an art of "stamp collecting" rather than analytical science. In 1940, Webster's New International Dictionary defines natural history as: "Formerly, the study, description, and classification of animals, plants,

minerals, and other natural objects, thus including the modern science of zoology, botany, mineralogy, etc., insofar as they existed at that time: now commonly restricted to a study of these subjects in a more or less unsystematic way." The eminent British ecologist, Charles Elton (1927), also discriminated natural history by calling ecology "the scientific natural history."

Modern natural history has a new meaning and implications. It is no longer a mere servant to other academic disciplines with the ending, *-logy*. No longer it should be translated as *pahkmulhahk*. It is the scientific endeavor pursuing to enlighten the history of the planet Earth and the diversity of natural objects on it. Doing research in natural history now requires not only observations and collecting specimens but also highly analytical techniques of physics, chemistry, and molecular biology. The best and the largest natural history museums in the world now have the finest facilities of analytical science as well as specimen cabinets.

## HISTORY OF NATURAL HISTORY MUSEUM

In 1594, Sir Francis Bacon wrote: Things for which a man might want to strive are, first, "...a most perfect and general library...;" second, "...a spacious and wonderful garden...;" third, "...a goodly, huge cabinet, wherein whatsoever the hand of man by exquisite art or engine has made rare in stuff, form or motion; whatsoever singularly, chance, and the shuffle of things hath produced; whatsoever Nature has wrought in things that want life and may be kept; shall be sorted and included. The fourth such, a still-house, so furnished with mills, instruments, furnaces, and vessels as may be a palace fit for a philosopher's stone" (Impey and MacGregor 1985). Bacon's characterization of the nature of the museum in the late 16th century remains largely unchanged in the modern era. Museums are still in the business of storing and cataloging the products of man and nature.

The museum, as we know it now, had its origins during the Renaissance. As discussed above, early European museums were in general the private collections of the aristocracy and wealthy patrons of the arts and sciences. These personal 'prizes' were kept and displayed in large trophy rooms (Neal 1987). The furniture in the rooms was for both exhibit and storage (Eri 1985). Museum objects were stored and displayed together in cabinets or on shelves with little or no scientifically sound organization until the 19th century. These cabinets of curiosity were often considered short of an essential part of the house of learning (Lintz 1991). Descartes despised the whole business of curiosity. There was also much doubt in the academy itself (Impey and MacGregor 1985).

Stemming from a new concept of public education, a new and revolutionary change occurred in the history of museology in the United States in the late 19th century. Along with the triumphant introduction of a new educational approach emerged a sense of responsibility to the public and a new approach to the purposes of museums (Eri 1985). Mu-

seum exhibits were separated from storage collections and display objects were ordered in context with one another. Modern museums attempt to use their objects to illustrate organized story lines. This type of object arrangement is called 'interpretive exhibit'. Specimens are displayed in the settings of their particular environment or habitat, often with the aid of audiovisual technology.

Exhibition for the general public itself was not new, however. The Duke of York was the first to open the collections of the private museum to the public in 1683. It was the birth of the Ashmolean Museum of Art and Archaeology at the University of Oxford (Lintz 1991). Other museums began to open their doors to the public as well from the late 17th century. In 1753, the British Museum was founded and their exhibits were made available to the public. But, the separation of exhibit objects from scientific collections is an important event for the development of the modern concept and organization of museums.

A comprehensive and full-service museum must comprise two museums: an inner scholarly museum and an outer public museum. The *inner museum* or *research museum* consists of the collections and the people who study them. It is a scholarly institute where all the approaches - traditional and new - in evolutionary biology, botany, zoology, anthropology, and geology are used to characterize the diversity of nature and the processes responsible for it. Whereas research and education of professionals or specialists are the functions of the *inner museum*, those of the *outer museum* or *exhibit museum* are exhibition and education of the general public (Humphrey 1991).

A comprehensive and full-service natural history museum serves two publics. A lay or general public is served through the exhibitions and educational programs of the outer museum and the inner museum serves the specialized public or the international scientific community of systematic biology and evolution (Humphrey 1991). The finest and the most successful natural history museums in the world such as the Natural History Museum in U. K., the U. S. National Museum of Natural History, and the American Museum of Natural History, to name a few, display some of the most spectacular and heuristic exhibits largely because they maintain the highest quality of research in the inner museum.

## **THE FIRST NATIONAL MUSEUM OF NATURAL HISTORY IN KOREA**

The 28 March 1988 issue of *Newsweek* magazine published the results of a public poll conducted by Louis Harris and Associates on how Americans spend their leisure time. Second only to VCR sales, museum attendance increased by 24% since 1984. Having spent most of my time directly or indirectly in relation to natural history museums all through my academic career in the United States, I can certainly attest that Americans, especially young children, love to visit natural history museums. Many times have I led a group of elementary school children through the corridors of wonder, and heard and felt their curi-

osity. Once the National Museum of Natural History opens its door in this country, it is certain that there will be a long line of visitors - men and women, young and old, nature-buff and nature-ignorant, etc. The National Museum must be properly equipped to satisfy the needs of all these people.

How can we accomplish this? The most important thing is the balance between the two museums within the museum. The success of the outer museum depends on the strength of the inner museum. Good exhibits that can enthrall and thus educate the public can be put together only when we have solid research team and facilities in the inner museum. Without the constant support from the inner museum, educated museum-goers will be easily disappointed. A good portion of our population have had chances to travel abroad and a better part of that portion have been to one or more world finest museums. Living in the globalized world today, our museum can no longer sit back and relax with an elementary level of public display. The outer museum must constantly strive to show the visitors something to learn. If we wish to have a world-class exhibits, we must first have a world-class research.

The foundation of natural history museums is the collections, the real objects upon which not only the museum's research but also education and exhibitions ultimately are based (DeMars 1991). The best and the most famous natural history museums in the world contain the largest collections of specimens, related data, and most of all, the first-class researchers. The museum curators and researchers provide both the exhibit material and theoretical background behind it. They, not the carpenters in the exhibition museum, are the one who ultimately educate the lay public. They must also communicate with the international community of curators and systematic researchers. Providing biological information for the specimens and loaning specimens for systematic research are among the most fundamental duties of curators. In order to compete against and cooperate with other natural history museums, the most crucial ingredient we must have in the National Museum of Natural History is none other than human resources.

The museum researchers also have duties to educate new scholars in the field, namely, postdoctoral fellows, graduate students, and undergraduate and even high school students. Since the individual universities do not have resources to manage their own university natural history museums in our country, the National Museum must also assume the role of university museums. It should set aside the teaching collections in addition to the Noah's Ark collections. The teaching collections must be made available to classes at universities and high schools so that students can learn various fields of natural history using real specimens not just looking at the pictures in the book or display specimens in the exhibit museum. Some of the best university museums, e.g., the Museum of Comparative Zoology at Harvard University, the Museum of Zoology at the University of Michigan, and the Museum of Vertebrate Zoology at the University of California, Berkeley, to name a few, all have excellent teaching collections and sometimes make them available to classes in other universities. I understand that our National Museum will

have its hands full just trying to obtain its own research collections, but I also urge that it must make some of them available for the education of the next generation of natural historians.

In addition to the collections in the usual sense, the natural history museum must store a great deal of related information. Speaking of the zoological collections, for instance, the following data must also be preserved either in the form of permanent records or actual objects: collections, casts, or at least photographs of the animal architecture such as nests, spider webs, galls, tracks, etc.; recordings of the animal vocalization in the form of audiotapes or sonagrams; films of animal behavior such as courtship displays. Museum research will be enhanced greatly if the museum is connected to aquarium, terrarium, insectary, aviary, or arboretum that permits the study of living species. In addition to the collections of whole objects, material for physico-chemical, anatomical, histological, cytological, and/or molecular analysis must also be available (Mayr and Ashlock 1991). Only then, the National Museum can carry out all the component academic disciplines that make up modern natural history-systematics, evolution (including geology), comparative biology, ecology, behavior, and conservation biology.

A well-known proverb says, "Ignorance is bliss." Another one says, "What you don't know can't hurt you." I personally do not like these proverbs. I believe that if you have a perfect knowledge of someone or something, you can understand that person or thing completely. Francis Bacon once stated, "Knowledge is power." I wish to propose a new one, *Knowing is loving*. I know many biologists who used to fear snakes or spiders but learned to like them once they began studying them. I too have a personal experience of becoming so affectionate of those creepy parasites like ticks, mites, and fleas after having looked at them under the microscope day after day. We the natural historians must teach the general public to know more about animals, plants, minerals, etc., and thus to love them. Knowing is loving! When a man loves Nature, he can do no wrong that might possibly hurt her. Conservation starts with the love of Nature. The National Museum of Natural History should be a place where all of us become totally naked and absolutely humble before Nature.

## 적 요

최근 우리 정부가 우리나라 최초의 국립 자연사 박물관을 건립한다는 계획을 발표했다. 그러나, 우리말로 '자연사'는 일반 대중은 물론 몇몇 학자들에게도 그리 친숙한 용어가 아니다. 따라서, 이 글에서는 자연사의 정의와 역사를 논의하고, 자연사 박물관의 역할을 서술하며, 우리의 국립 자연사 박물관의 건립에 대해 몇 가지 조언하고자 한다. 현대 자연사란 더 이상 '우표수집'과 같은 것이 아니다. 자연사는 이 지구의 역사와 지구에 존재하는 자연물의 다양성을 밝히는 종합과학이다. 자연사 박물관은 그 안에 두 개의 박물관을 가져야 하는데, 하나는 전시와 일반 대중의 교육을 위한 '겉박물관'이고 다른 하나는 연구와 전문가의 양성을 위한 '속박물관'이다. 우

리나라 최초의 국립 자연사 박물관은 이 “겉”과 “속”을 모두 훌륭히 갖추어 우리들 모두가 자연에 대해 알게 되고, 또 그래서 자연을 사랑하게 되는 곳이 되길 바란다.

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