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The new exhibition hall of the Hungarian Natural History Museum

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Abstract – The new exhibition building of the Hungarian Natural History Museum, its surrounding and the first permanent exhibitions are introduced on the basis of the visitor's guide. The museum has, for the first time in its history, an own exhibition building in the VIIIth District of Budapest, where a last century Military Academy and its riding school had been and was recently reconstructed for our purposes. Below we shortly introduce the building and its surrounding. With 2 figures.

SIGHTS AROUND THE BUILDING

A green patch: the Orczy Garden and the Ludovika

Some historians believe that one of King MATTHIAS's deer forests extended in this place before. In the late 18th century LÁSZLÓ ORCZY decided to build a park here, the largest and most beautiful one in Pest that time. He also restored the environs of the Illés Well. The park was completed by the beginning of the 19th century and was opened for the public. It soon became a popular excursion place. In 1829 the park was acquired for the education of Hungarian army officers. Between 1830 and 1836 the First Hungarian Military Academy named after Queen MÁRIA LUDOVIKA was built in an area of 37 ha following the plans of MIHÁLY POLLACK. The renewed park also became the property of the Military Academy, where drill and shooting halls, and a riding ground were built. Thus the park was turned into a place of military practices rather than entertainment. Regular education in the Academy started only after the compromise of 1867, in the year 1872. Since 1897 the Ludoviceum was recognized as a higher education institute. The park stretching over 23 hectares after the Second World War had shrunk to 14 ha by the late sixties. The Ludovika building had lost its original function, too. After running restoration works will be completed, the buildings of the former Ludovika Military Academy will house all the collections of the five departments of the Hungarian Natural History Museum.

Stones tell tales – walk around the building

"Stones talk" – goes the saying. They not only talk, but even tell tales. Stone blocks weighting tons are arranged around the museum building to show the geological history hundreds of million years back. Among the rocks displayed in the order of their age, first those from the Palaeozoic are shown: many million years old gneiss from Kópháza, Devonian limestone from Szabadbattyán and Permian sandstone from the Balaton Highlands. The Mesozoic is represented by Triassic Dachstein limestone, Jurassic limestone rich in ammonite and bivalve-bearing Triassic limestone from the Transdanubian Hills. The geological history of the last 65 million years is shown by Eocene limestone from the Bakony Mts, Oligocene sandstone from the environs of Budapest, Miocene andesite from Dunabogdány, Lajtha limestone from Fertőrákos, Pliocene basalt from the Balaton Uplands, and Pleistocene freshwater limestone from Süttő.

SIGHTS IN THE BUILDING

Once upon a time, there was a Manège

Unfortunately, no written record on the history of the first two-storey covered riding school of the Military Academy remained. However, it is certain that the building stood in 1851 already. Since 1872 the Royal Hungarian Army took over the manège for riding school equitation. In the years between the two world wars it served academy officers only. Since the 1960s, the "Alfa" cinema, one of the largest and most popular premire movie house in Budapest, operated in the building for almost thirty years. Under circumstances unclear so far the building caught fire in May 1992 causing severe damages to the building. Following the plans of ISTVÁN MÁNYI and his co-workers the historic building was renovated in 1996 to house the exhibits of the Hungarian Natural History Museum (Fig. 1).

The Széchenyi Hunting Library

ZSIGMOND SZÉCHENYI was an enthusiastic collector of books. He was young when he started to purchase books on games and hunting, thus, establishing the base of his unique hunting library. Unfortunately, the major part of the collection – including splendid trophies – had been destroyed during the Second World War. After the catastrophe SZÉCHENYI started to collect books again by going round second-hand bookstores and buying books often by spending less money on food. The result, a total of 3311 books and journals! Among them are particularly valuable publications, like the writings of ISTVÁN BÁRSONY, ISTVÁN BERTÓTI FRIEDRICH, ISTVÁN FEKETE and KÁLMÁN KITTENBERGER. Among the famous Hungarian travellers, LÁSZLÓ ALMÁSY, MANÓ ANDRÁSY, ISTVÁN CHERNEL, LÁSZLÓ MAGYAR, GÁBOR MOLNÁR, BÉLA SZÉCHENYI and JÁNOS XÁNTUS are represented by one or several books. The library is also rich in the relevant English, German and French literature. Following the death of ZSIGMOND SZÉCHENYI the library was purchased by the Hungarian Natural History Museum in 1968. Current hold-

ings reach 3618 books and periodicals, which may be read on site on Wednesday afternoons.

THE GROUND FLOOR

Touching nature in the Discovery Room

Rules in the Discovery Room opened in 1992 are different than in a usual museum. Everything there may be taken in hand, surveyed thoroughly or even drawn. Only its several hundred kilogram weight prevents the whale mandible, the elephant skull or the stuffed brown bear from being lifted up. In contrast, seeds in the bowl of Cinderella are selected with great pleasure even by the youngest. Lyophilised (freeze-dried) mushrooms appear almost savoury. Birds hanging from the ceiling look as if they would just have a short rest in the mid-air, and could flap their wings again in any moment. Rocks tell stories on millions of years of the past, even presenting creatures leaving no traces to present times. Only morsels of the abiotic and biotic environments are shown on these few square meters, yet all find something interesting from grandchildren to grandparents. Exotic things and less spectacular everyday objects complement each other. Except tasting, all sorts of sensing may be tried in this room.

Fig. 1. The new building of the exhibition hall of the Hungarian Natural History Museum

Never wilting flower garden

The natural environment in the Carpathian Basin is introduced in the exposition organized on the gallery in the new exhibition building of the Hungarian Natural History Museum. Glass cabinets in pillars supporting this floor display a selection of minerals from the Carpathian Region. Like the gallery rests on these fourteen columns, thus the life on Earth builds on chemical elements composing minerals.

About 900 sorts of minerals – one quarter of all the minerals known in the Earth – occur in the Carpathian Region. Minerals brought up from the darkness of mine shafts are crushed, melted and broken down to components to serve man's need for raw materials. The very few "distinguished" specimens escape this fate due to their beauty, peculiarity or rarity. These treasures found temporary shelter only in private collections for centuries. The first public collections in Hungary were founded in the early 1700s. The first mineral samples reached the Hungarian National Museum in 1803, where an ordered display of minerals was opened to the public in 1810.

Miners in the Carpathians call nice crystal groups flowers. Display cases on the stair colonnade show the most beautiful pieces of our "flower garden" from the Carpathian Basin: a bunch of evergreen copper flowers, an edible mineral and many other translucent wonders. Short descriptions reveal that – among other things – which copper ore has the highest gold content, why is the two-hundred-forint-coin chinking, and how the blue of the sky comes below ground. Minerals discovered in the Carpathian Region are also presented. There are more than fifty kinds of minerals that were found in this area first. Twelve of these were detected by former researchers of this museum. JÓZSEF KRENNER, director of the Mineralogical and Palaeontological Collection between 1870–1919, himself described eight new minerals from the Carpathian Basin. One of these was later named *krennerit* after him. The discovery of a new mineral called mrázekit in 1992 reflects that this field holds novelties even today.

THE GALLERY: "MAN AND NATURE IN HUNGARY"

The permanent exhibition on the gallery presents a brief history of the long way that mankind had taken from early humans living in close contact with nature to civilised societies. This is followed on the example of the Carpathian Basin forming an ecological unit. The ways that man made use of natural resources are shown as well as modes he transformed and damaged severely his natural environment. We believe that the lost "harmony with nature" can be restored, but only in that case, if all of us know the possible dangers, the problems, their causes and the ways of their solutions.

Travel in time

Exhibition "time path" starts among plants never seen before. These "trees" lived on Earth 190 million years ago. Neither grasses nor the colourful flowers carpeting today's forest floors existed that time. Walking in the imitation of pre-human environment one may think that the history of the Carpathian Basin was also about to start. These odd plants thrived well before man appeared on Earth. For human standards, it took an im-

mensely long time while the abiotic environment and its natural resources had developed. On the time scale of 4.6 meter full length 1 cm corresponds to 1 million years. Modern man appeared at the very end of the scale, but occupied the Earth – both its surface and depth – with a speed never experienced at any other organism. Several examples show the ways in which mankind makes use of raw materials hidden below ground (e.g. coal, mineral oil, limestone, flint and chalk). All these are the products of plants and animals having lived in the distant past.

Natural landscape changes

The abiotic and biotic environments had changed before the influence of man, as they continue to do so even today. There were times when the area of the Carpathian Basin was covered by sea with islands of various sizes (today's mountains) inhabited by dinosaurs. Footprints and remnants of these creatures had been found at Komló and in Transylvania. With the gradual retreat of the sea, recent lowlands became exposed. The last 2.5 million years also brought substantial changes. In addition to geological events, the climate of the Carpathian Basin had markedly altered. Several periods of glaciation and warming up commenced, causing great changes in the vegetation and fauna. During cold periods (glacials) the plant cover might have been similar to the current taiga formation of Northern Eurasia and the continental steppes of Asia of today. Warm periods interrupted glacials. Today we live in such an interglacial time.

Man appears

Something happened in the late Quaternary that initiated fundamental changes in the Carpathian Basin as well. A new species emerged: the *Homo sapiens*. With the help of faces reconstructed on the base of fossil records, visitors may look human ancestors – including a ca. three-years-old Neanderthal child from the Subalyuk cave – straight in the eye. This is the first reconstruction of this kind in the World. In this work, the shape of a head is determined by the shape and size of the face and the brain case. Muscles are arranged according to the form of certain bones, to the properties of muscle insertion sites, and also considering results of relevant studies on a wide variety of human races. The face of an adult Neanderthal man was made after a skull unearthed in France, since a mere occipital bone remained of this early hominid – nicknamed "SÁMUEL" – discovered at Vértesszőlős. In contrast, the skull of a child from the Subalyuk cave had been preserved in a fairly good shape. It is surprising how the Neanderthal child resembles the child of the modern man. Or it holds true in the other way around?

Substantial prey at the cave entrance

Visitors see in the cave a pregnant Neanderthal woman figure and the remains of her everyday life. In front of the cave a life-size mammoth reconstruction stands (Fig. 2). Mammoth remains have been found at nearly two hundred places in Hungary giving evidence that large herds of this thick-furred, cold-adapted herbivore roamed the vast steppes once. The extinction of mammoth is attributed to climatic changes, although some researchers think that hunting by early man had also contributed to its decline.

Facing the past

Early humans changed little the landscape where they lived. However, after the last glaciation a series of raw materials was known and used for tools. The Neolithic brought agriculture and higher reproduction rate associated with safer life. In the Bronze Age vast areas became deforested as wood was needed not only for heating and everyday life, but for fuelling foundries and building castles. Agriculture and grazing required increasingly larger open land also. Folks dwelling in the Carpathian Basin prior to the conquering Hungarians – probably the Romans – had already changed the landscape markedly. Nearly half of the forests had disappeared.

Walking among people who lived here during the Hungarian Conquest and in the early Middle Ages one may have the impression as if he were in an early mediaeval marketplace. He may also be amazed at the similarity of faces of that time and now.

Bygone wetlands

In the past, wild plants and animals constituted a greater part of people's diet. Nutritive, tasty or medicinal plants, like nettle, thyme and sage were gathered. Knowing their behaviour, man trapped, hunted or collected animals. This is illustrated by a fishing, hunting and gathering man's water side hut and its environment. On display are residues of a killed game, dried, conserved and stored plants, and a wide variety of tools serving successful fishing and hunting.

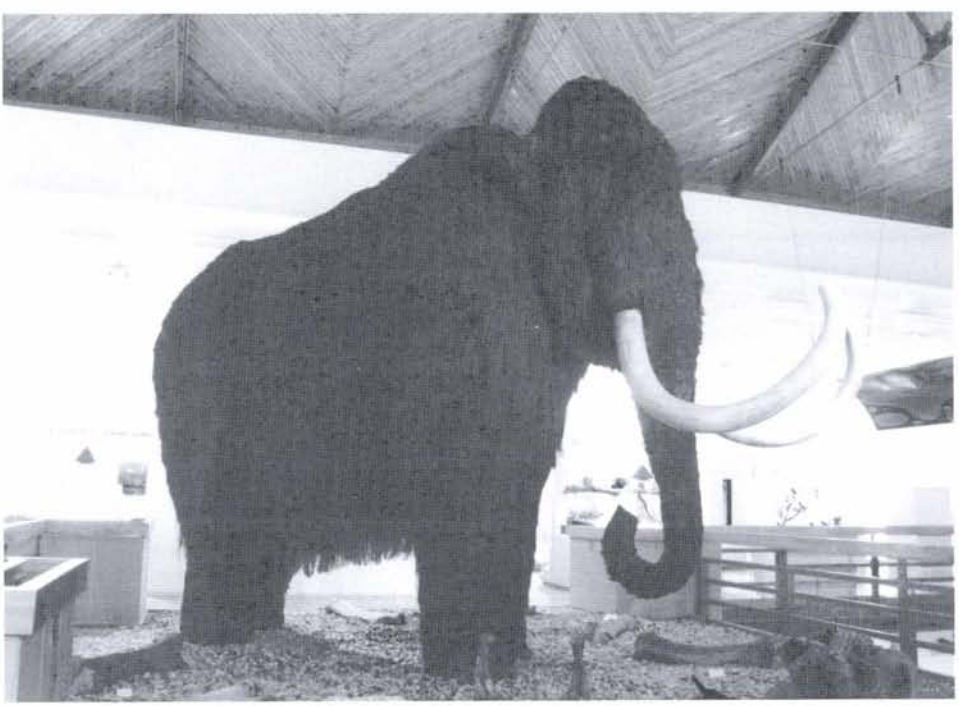

Fig. 2. The life-size mammoth reconstruction in the permanent exhibition

It is often said that mankind "lived in harmony with nature" before the industrial revolution. Thinking over this statement more thoroughly, the idea of harmony should be revised. Our ancestors perhaps found the perishing cold, starvation, epidemics and high infant mortality natural, but hardly harmonious. Had not been dissatisfied with this situation, they would not have sought for greater security and predictability, aims toward which the entire human civilisation proceeds. However, to provide a "safe" life for man, nature had to be altered at a degree far exceeding its regeneration capacity. This is why some think that harmony is over. Although the idea of harmony can be interpreted differently. Nevertheless, it is certain that nature had been transformed greatly and requires protection to preserve its parts less influenced by human activity yet.

Legendary game richness

At the far end of the exhibition building an odd scene awaits the visitor. From left to right a series of spring, summer, autumn and winter pictures is displayed. Taking a closer look at the relief and vegetation, it turns out that spring is presented in a reed-swamp, summer on a Great Plain oakwood clearing, the colourful autumn on a limestone slope, and winter in grim mountains. The scene commemorates the fabled game richness of the Carpathian Basin. The bear and wolf fighting in the scene, the majestic deer stag standing in an autumn landscape, lynx, lanner, imperial eagle, beaver and otter were valued preys before. Most of these games are protected by law, so many of them increases in number today. Lynx, wolf and beaver occur in Hungary again, and several birds of prey are becoming more abundant. The visitor can have a rest at the splendid landscape.

Hausen disappeared

The "Vizafogó" (Hausen catcher) street and housing estate in Budapest were named after a nearby Danube bay, where hausens migrating from the Black Sea up on the river to spawn were diverted to and caught once. Hausen almost never entered the Hungarian Danube reaches since the dam at Vaskapu (Iron-Gate) had been constructed. This large-bodied fish is only an example. Numerous animal species became rare or even disappeared from waters due to human influence like water pollution and canalization of riverways.

Time speeds up

The second part of the exhibit introduces changes that occurred during the last few centuries. In the time of the Hungarian Conquest, 40% of the country's area was covered by water either permanently or temporarily. Canalization of riverways and draining of wetlands changed the hydrology of the landscape dramatically. Agricultural fields of bad or good quality and economically useless inland saline stretches replaced the dried-up swamps. Twenty-two plant species naturally inhabiting mires are shown on paintings by VERA CSAPODY and EMMA VARGA. These plants cannot be photographed in Hungary any more since they became extinct from the country. Hydrological changes influenced not only the natural biota, but also the human population itself. Recently, most of the surface and spring waters are unsuitable for drinking, and groundwater is becoming polluted over increasingly larger areas. Neighbouring countries and practically the whole world have the same problems as well. This is why experts think that shortage of drinking water

will cause serious difficulties in the decades and centuries to come. The model of a lake with reeds presents one way of water purification and emphasizes the need for preserving littoral reed vegetation.

Transformation of forests

Forests also underwent marked changes. In prehistoric times about three-quarters of the country's recent area was covered by forests. Folks dwelling in the Carpathian Basin used wood in an ever increasing quantity. As a result, the conquering Hungarians found only about half of the original forests forming a landscape, thus it was highly appropriate for these seminomadic people seeking land for their huge livestock. Deforestation continued in later centuries. By the Second World War forests covered only 6% of the country's area, but this figure increased to 18% since then owing to intensive plantation works. Unfortunately, a considerable part of these forests is even-aged plantation of alien trees, instead of age-structured multi-species natural stands providing high habitat diversity. Planted forests have far fewer species of flowers and birds than old woods of varied structure.

Farewell to nature?

Habitat had changed not only for flowers and birds, but for man too. Human settlements expanded, cities with roads and later railroads appeared. Food, raw materials and goods had to be transported over greater distances, and the disposal of waste and garbage caused an ever increasing problem. After the industrial revolution human population growth speeded up in developed nations, while in the third world this happens currently. Thus, no one can be surprised on the great velocity with which the last figures of a fourteen-digit counter showing the number of people living on earth change. The growing human population lives in ever-growing large cities. Sixty per cent of Hungary's, and 70% of Europe's population are city-dwellers. In the large block of flats of crowded towns, citizens coexist only with their pets and several – mostly unpleasant – insects. Considering pollen allergy also, it seems that living organism cause only inconveniences. Arriving back to the mammoth on the circular way of the Gallery one can re-examine our ancestors' cave and may meditate on the advantages and drawbacks of the changes having occurred since then.

People may change ...

The exhibition's last section introduces the natural treasures of present-day Hungary worth protecting. Several examples illustrate the biological diversity, including the number of species, the richness of shape, size, colour, chemical composition, sound, habitat and propagule dispersal trick. All these make up only a small fragment of the immense variety shown by the sixty thousand species living in Hungary. Cases are also presented for simple ways of protecting nature. Nowadays more and more people feel the protection of nature and the environment really important.

An old willow tree holding the sun waits the visitor approaching the end of the exhibition. Children's works, like flowers, cover its surface. The children of today grow up with a different way of thinking, thus we can count on them to properly manage Earth's remaining treasures.