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The new layout of the Zoology Museum of the University of Catania (Italy) one year after its opening

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ABSTRACT On 9 July 2021 the Museum of Zoology of the University of Catania (Italy), the oldest Sicilian zoological museum whose foundation dates back to 1853 by Prof. Andrea Aradas, reopened to the public with a new layout, which involved the elimination of all the showcases in which the specimens were displayed. The new project instead envisaged that all the vertebrate specimens present in the main room, around 170, are arranged on open platforms and grouped according to systematic or biogeographical criteria. An emotional museum was thus created in which the elimination of the showcases and the possibility to walk among the exhibits without barriers or limitations increase the emotional and emphatic involvement of the visitor, helping the transmission of information on biodiversity and the relationship between man and nature.

KEY WORDS Museum of Zoology; museology; exhibition; biophilia.

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INTRODUCTION

On July 9 2021, the historic Zoology Museum of the University of Catania reopened to the public with a new exhibition layout. The museum, founded in 1853 by Prof. Andrea Aradas, first professor of Zoology at the University of Catania, had its initial nucleus composed of zoological materials donated by members of the Gioenia Academy of Natural Sciences and those collected in the cabinet of Prof. Aradas (Sichel, 2005).

Over time, the museum's collections expanded through donations and acquisitions, making it necessary to move from the narrow rooms on the second floor of the rectorate in University Place to a new structure built in the 1920s in Art Nouveau style (Fig. 1), located on the inside the University building in via Androne 81, where it still resides (Viglianisi, 2022). The structure consists of a large room of 230 m^2 on the ground floor, a balcony of 80 m^2 on the first floor, and two small rooms used as a warehouse and laboratory.

Among the museum's collections are notable donations, including the Mediterranean shell collection of the Benedictine monks, the ornithological collection of the Catania Hunters Club, and the Auteri collection of exotic birds, the latter consisting of over 900 specimens donated by noblewoman Angelina Paternò Castello. Subsequently, the museum received the entomological collection of Enrico Ragusa from the Experimental Institute of Citriculture in Acireale, which includes more than 5,800 specimens of European Lepidoptera, just under 8,500 specimens of European Coleoptera and about 18,000 specimens, including numerous types and typical series of Sicilian Coleoptera (Zanetti & Sabella, 1998). Other significant acquisitions include about a hundred specimens of non-European mammals, funded by the regional

province of Catania, as well as the ornithological collections "Baglieri-Benanti" and "Baglieri", including more than 500 Sicilian specimens and the coleopterological collection "Briganti" (more than 30,000 specimens of Coleoptera Staphylinidae).

Among the museum's most captivating specimens are a small African elephant (*Loxodonta africana*) called Menelik from the name of its donor, as it was the gift that the Emperor of Ethiopia Menelik II gave to the King of Italy Umberto I on 20 August 1889. Additionally, the skull and some vertebrae of a Sperm whale (*Physeter macrocephalus*), found washed up on the beaches of Sciacca in May 1916, are of great interest (Insacco et al., 2014).

There have been various installations and ostensive criteria that have been used over the course of the Museum's more than one-hundred-year history. Among the latest installations we remember the one created at the beginning of 1990 by Prof. Marcello La Greca, who purchased numerous species of European and non-European vertebrates as well as numerous casts of skulls belonging to the various species of the genus *Homo*. Noteworthy among the non-European mammals there were a large Polar bear, a Huge elk, a magnificent Tiger, and various other medium to large-sized mammal species, many of which are endangered.

This exhibition, partially updated in 2001 as part of the Catania-Lecce project, included 14 thematic showcases on the ground floor which represented the main terrestrial biomes and exhibited some of the most significant vertebrates of each biome (Fig. 2). This setup also resisted the change in use of the museum room which for some time also served as an auditorium with around eighty seats and two large screens. Only in 2016 did the Museum return to its original function.

Figure 1. The layout of the hall of the Zoology Museum of Catania University (Italy) in 1934 in the University Citadel of via Androne.

THE NEW EXHIBITION

In 2017, for the third time in the museum's life, the building and its roof suffered damage due to heavy rainwater infiltration from the terrace. Similar issues with the roof had occurred in 1924 and 1951 (ASUCT, 1919-1960), necessitating repairs. The museum was closed in October 2018 for necessary building renovations, completed in the summer of 2019. Once the structure had been restored from a building perspective, the planning of the new layout began. The project, signed by the architects Sebastiano Pulvirenti and Barbara Carfì, was developed according to the exhibition lines requested by authors. They imagined a contemporary exhibition, in which the linear narrative of the previous exhibition was replaced with a complex and multidimensional environment, which went beyond the classic didactic approach and promoted a new contact with the zoological specimens on display, markedly emotional and empathetic.

The intervention first involved the elimination of all the display cases with the exception of one, twenty centimeters wide and seven meters long, used to display the over two hundred specimens of Hummingbirds from the Auteri collection. Subsequently, platforms imagined as floating rafts or islands on which to ferry or secure animals were created and installed. In particular, these were two large oval-shaped multi-level platforms, separated by a corridor. The animals of the savannah are exhibited on the smaller one (Fig. 3), while the larger one is used for the display of the large Cetartiodactyla (Fig. 4); in the corridor that separates the two platforms the three different species of bears owned by the Museum are exhibited.

A narrow crescent-shaped platform was created to display specimens of Italian fauna. Two corners of the Museum were used to expose, following

Figure 2. The layout of the hall of the Zoology Museum of Catania University (Italy) in the years 2001–2017 as seen from above.

Figure 3. The new 2021 exhibition of the Zoology Museum of Catania University (Italy).
The oval platform where the animals of the African savannah are exhibited.

Figure 4. The new 2021 exhibition of the Zoology Museum of Catania University (Italy).
The oval platform where the large Cetartiodactyls are exhibited.

systematic criteria, and on multi-level platforms, the Reptiles on one side, and the specimens belonging to the Carnivora Order on the opposite side. In the remaining two corners, on the first side specimens from the American fauna and Australia were showed above the platforms according to geographical criteria, while on the other side the phylogeny of Primates and the human evolution were illustrated.

To exploit the volume of the museum room, in its upper half and anchored to the ceiling with transparent wires, light metal structures similar to perches were installed to display various European and non-European birds of prey. In the other half of this room, at a height of about four meters, the skull of a Sperm whale is exposed, with some vertebrae connected by a metal structure (Fig. 5).

No changes have yet been made to the museum's first-floor exhibits. The ancient showcases from the beginning of the 20th century still display, following a systematic criterion, marine and terrestrial invertebrates. Eight glass bell jars from the Auteri collection, which represent an emblematic example of the art of Victorian taxidermy, and specimens of diurnal and nocturnal birds of prey donated by the Hunters Club in 1908, are showed in cabinets located on the short sides of the balcony.

To improve the functionality of the upper floor, light metal structures protruding outwards of the railings were installed, on which some ornithological specimens from the Auteri collection and a significant part of the museum's Primate collection are exhibited. The new setup was designed with modular purposes, allowing for easy reorganization of the exhibition spaces.

RESULTS

Starting from the new exhibition, the impact and satisfaction of visitors were studied, analyzing

Figure 5. The new 2021 exhibition of the Zoology Museum of Catania University (Italy).
The skull of the suspended Sperm whale. Below, the corner dedicated to Australian and American fauna.

the flows and types of visitors and the data were compared with those recorded before the museum closed. From April to July 2022, a questionnaire with 15 multiple choice questions was administered to 350 randomly selected visitors, consisting of two sections: personal information and satisfaction with the museum and associated services. Regarding satisfaction, 85% of respondents rated the exhibition, lighting, and museum layout as "Excellent," while 13% rated them as "Good." Regarding the overall visitor experience, 63% expressed "extreme satisfaction," 33% "very positive," and only 3% "fairly positive." Therefore, most of the interviewees found the museum visit highly satisfactory.

An analysis was also conducted based on the comparison of the number of visitors, both in terms of absolute value and composition, in the 2017, the year in which the museum still had the old layout, and in the period July 2021–July 2022 (still in full COVID phase), in which the museum reopened with the new layout. The data collected were as follows: in 2017 the total visitors were 925 of which approximately 800 belonged to a school, i.e. students of all levels and their accompanying teachers, who therefore represented 86.4% of the total; a completely opposite result

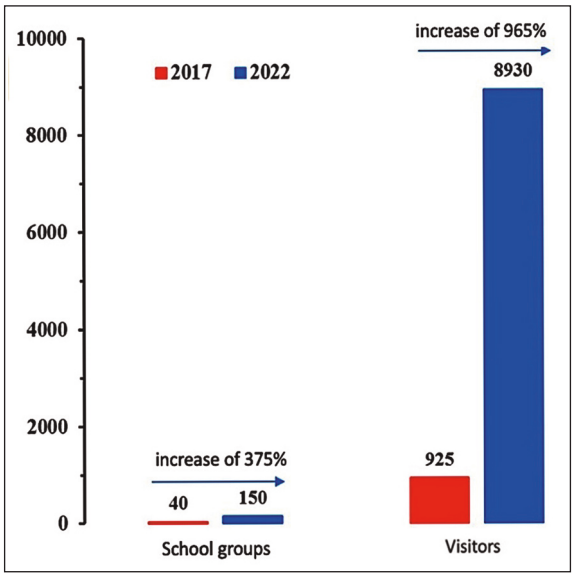

Figure 6. Comparison between the visits made by organized groups (on the left) and the number of total visitors (on the right), between 2017 and the period July 2021–July 2022. The percentages of increase are indicated.

was obtained by calculating the number of visitors hosted at the museum with the new layout. The overall data shows, in fact, 8,921 total admissions, in which the portion concerning visitors belonging to the school is made up of approximately 3,000 people, which represent only 33.6% of the total, reducing their presence by almost two thirds (Fig. 6).

A simple consideration emerges from these data: the Museum of Zoology has seen its target change from a museum purely for educational use to a generalist museum. For completeness of information, the absolute number of visitors went from 4,563 in the last six months of 2021, to 11,187 in the whole of 2022.

CONCLUSIONS

The opportunity to renew the exhibition prompts a reflection on past and present display criteria, considering the concept of biophilia (Wilson, 2021) and the importance of an emotional approach in the museum context. Traditional exhibitions, with specimens exposed behind glass in taxonomic order, still prevail due to their practicality and low costs. However, today their obsolescence is increasingly recognized: although they offer an orderly vision of zoological systematics, they lack emotional involvement, transforming the museum visit into a simple contemplation from a distance of museum showcases.

The emphasis on the scenic use of specimens and their emotional impact, transcending hierarchical categorization and focusing on the visitor's empathetic interpretation, allows for an emotionally engaging open exhibition. Offering multidimensional paths on the evolution of species, their classification and the human-animal relationship, the exhibition acts as a laboratory of space-time environmental education. This setup allows the museum to fully fall into the category of "emotional museum" as it is centered on an educational project that has as its aim the experimentation and emotional involvement of the visitor, who has direct contact without barriers or mediations with the museum preparation. Naturally, this approach does not detract from the validity and accuracy of the information provided to the visitor

which, although simplified, is still characterized by strict scientific rigor. From all this, the visitor gains a series of significant and profound impressions and suggestions that they will carry with them even after the visit.

In conclusion, therefore, in this historical moment we are witnessing a change in exhibition philosophy. Natural history museums must not be seen only as containers of specimens, but become new places to exhibit concepts, theories and ideas. A zoology museum can no longer limit itself to showing a variety of species without a broader context. It is necessary to inform and share topics such as biodiversity, climate change, the sixth mass extinction, etc. with visitors taking the opportunity to involve them also emotionally.

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