EDUCATION

IMPACTO CIENTÍFICO EDITORA

THE "PAULO MILTON BARBOSA LANDIM" MUSEUM OF PALEONTOLOGY AND STRATIGRAPHY (UNESP RIO CLARO) AS SPACE OF INCLUSIVE EDUCATION

O MUSEU DE PALEONTOLOGIA E ESTRATIGRAFIA "PAULO MILTON BARBOSA LANDIM" (UNESP RIO CLARO) COMO ESPAÇO DE EDUCAÇÃO INCLUSIVA

EL MUSEO DE PALEONTOLOGÍA Y ESTRATIGRAFÍA "PAULO MILTON BARBOSA LANDIM" (UNESP RIO CLARO) COMO ESPACIO PARA LA EDUCACIÓN INCLUSIVA

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Reinaldo J. Bertini[1], Silvia Regina Gobbo[2], Luíz Antônio Letizio[3], Pedro Akira Kitayama[4]

ABSTRACT

The "Paulo Milton Barbosa Landim" Museum of Paleontology and Stratigraphy, belonging to the Geology Department of UNESP Rio Claro, was created in 1991 with the purpose of maintaining an academic reference collection for students and professionals. From an educational point of view, it is a visitable space with didactic and cultural approaches. It receives students from elementary school to university level. Regarding inclusion, it welcomes specific groups of people such as the Open University for the Elderly, Youth and Adult Education, the Association of the Exceptional, the Municipal Center for the Blind, among others. It participates in events outside the University, such as the SDGs, Science Square, or brings its material to those who cannot visit it. The Museum maintains pages on social networks, where it publishes scientific and museological content. It develops the project "A Night at the Geology Museums" to receive students from evening classes. In this work, we will focus only on educational visits, without describing other daily activities, such as collection processes, fossil preparation, and cataloging, present in a Museum.

Keywords: Museum. Education. Fossils. Sedimentary Rocks. Inclusion.

[1] Professor. Administração do Instituto de Geociências e Ciências Exatas (IGCE). Universidade Estadual Paulista (UNESP). São Paulo, Brazil. E-mail: reinaldo.bertini@unesp.br
Orcid: https://orcid.org/0000-0001-5429-1139 Lattes: https://lattes.cnpq.br/315705211142304
[2] Postdoctoral Fellow. Administração do Instituto de Geociências e Ciências Exatas (IGCE). Universidade Estadual Paulista (UNESP). São Paulo, Brazil. E-mail: silviagobbo@yahoo.com.br
Orcid: https://orcid.org/0000-0001-6574-4092 Lattes: https://lattes.cnpq.br/8500904455607276
[3] Doctoral Student. Administração do Instituto de Geociências e Ciências Exatas (IGCE). Universidade Estadual Paulista (UNESP). São Paulo, Brazil. E-mail: lletizio@hotmail.com
Orcid: https://orcid.org/0000-0002-1639-1777 Lattes: http://lattes.cnpq.br/4260968206842740
[4] Doctoral Student. Administração do Instituto de Geociências e Ciências Exatas (IGCE). Universidade Estadual Paulista (UNESP). São Paulo, Brazil. E-mail: pa.kitayama@unesp.br
Orcid: https://orcid.org/0000-0002-4155-7249 Lattes: http://lattes.cnpq.br/3906615938667254

RESUMO

O Museu de Paleontologia e Estratigrafia “Paulo Milton Barbosa Landim”, do Departamento em Geologia da UNESP Rio Claro, foi criado em 1991, com a finalidade de manter uma coleção de referência acadêmica para estudantes e profissionais. Do ponto de vista educativo é um espaço visitável com abordagens didáticas e culturais. Recebe estudantes desde ensino fundamental até universitários. No que diz respeito a inclusão recebe grupos específicos de pessoas como Universidade Aberta da Terceira Idade, Educação de Jovens e Adultos, Associação dos Excepcionais, Centro Municipal da Pessoa Cega, entre outros. Participa de eventos fora da Universidade, como ODS, Praça da Ciência ou leva seu material para aqueles que não podem visitá-lo. O Museu mantém páginas em redes sociais, onde publica conteúdos científicos e museológicos. Desenvolve o projeto “Uma Noite nos Museus da Geologia”, para receber estudantes dos turnos noturnos. Neste trabalho vamos nos atentar somente as visitas educativas, sem descrever outras atividades cotidianas, como processos de coleta, preparação de fósseis e catalogação, presentes em um Museu.

Palavras-chave: Museu. Educação. Fósseis. Rochas Sedimentares. Inclusão.

RESUMEN

El Museo de Paleontología y Estratigrafía "Paulo Milton Barbosa Landim", perteneciente al Departamento de Geología de la UNESP Rio Claro, fue creado en 1991 con el propósito de mantener una colección académica de referencia para estudiantes y profesionales. Desde el punto de vista educativo, es un espacio visitable con enfoques didácticos y culturales. Recibe estudiantes desde primaria hasta nivel universitario. En cuanto a la inclusión, acoge a colectivos específicos como la Universidad Abierta para Personas Mayores, Educación Juvenil y de Adultos, la Asociación de Personas con Discapacidad, el Centro Municipal para Personas Ciegas, entre otros. Participa en eventos externos a la universidad, como los ODS y la Plaza de la Ciencia, y lleva su material a quienes no pueden visitarlo. El museo mantiene presencia en redes sociales, donde publica contenido científico y museológico. Desarrolla el proyecto "Una Noche en los Museos de Geología" para recibir a estudiantes de cursos nocturnos. En este trabajo, nos centraremos únicamente en las visitas educativas, sin describir otras actividades cotidianas propias de un museo, como los procesos de recolección, preparación de fósiles y catalogación.

Palabras clave: Museo. Educación. Fósiles. Rocas Sedimentarias. Inclusión.

1 INTRODUCTION

The Museum of Paleontology and Stratigraphy "Paulo Milton Barbosa Landim" (MPE) was created in 1991, to formalize the academic-scientific collections of fossils of the Paleontology Laboratory of UNESP Rio Claro. He has been registered with IBRAM (Brazilian Institute of Museums) since 2005, always participating in its activities. He has done intense work in university extension, participating in various events, and taking exhibitions to the general public, in squares, shopping malls and other institutions, being relevant at UNESP as well as outside it. The collection includes microfossils, invertebrate fossils, vertebrates, plants, ichnofossils and sedimentary rocks. This inventory is saved in catalog books and databases.

The MPE works as a learning space outside the classroom, where knowledge takes concrete form. By observing fossils, sedimentary rocks and geological records in general, visitors come into direct contact with evidence of the Earth's past, which arouses curiosity and facilitates the understanding of concepts of Science, Biology, Geology, Ecology and Evolution, which are often abstract in the school environment.

During scheduling, teachers are encouraged to explore in advance, with their students, the content available on the institution's official website during computer classes, as a way of preparing for face-to-face visits (BERTINI & DIETRICH-BERTINI, 2015). The site, with a simple layout and easy navigation, concentrates fundamental information about the MPE, contributing significantly to the understanding and use of the activities by the students. In addition, the MPE maintains active profiles on social networks, where it shares content related to Paleontology. During the pandemic, the "Fossil of the Week" Project was created, which presented the image of a copy of the collection weekly, accompanied by its scientific description.

The objective of these initiatives is to allow teachers to work on the content with students in advance, so that they arrive at the visit with an introductory knowledge about the materials on display. This preparation has shown positive results, arousing greater interest and curiosity about the collection.

Some visits are enriched with lectures and field activities, providing a broader educational experience. Benefits of visiting the MPE go beyond the simple tour, as they complement school classes, integrate multidisciplinary projects or studies of the environment.

The museum experience offers cognitive gains, by promoting the learning of topics related to biodiversity and geodiversity, and affective gains, by arousing interest and motivation to learn more about the contents presented. This experience stimulates personal

growth, the joy of discovery and direct contact with objects and sensations that are rarely present in formal education. The act of touching a fossil, millions of years old, belonging to extinct animals such as dinosaurs, usually provokes intense emotions and curiosities, driving the desire for new knowledge, and expanding visitors' connection with the history of life on Earth. Gould (1991) mentions, for example, that children's fascination with dinosaurs could be used as a resource of great value for science education. He relates this enthusiasm directly to Science, stating that "dinosauria should be a blessing, because the material that gave rise comes directly from our efforts, from the work of paleontologists and from the large skeletons assembled in our museums" (GOULD, 1991, p. 4).

In fact, without the work done by scientists, children would not have access to detailed information about dinosaurs and other fossils. "Dynomania" is a relatively recent phenomenon, which has intensified as scientific knowledge about these animals has grown and has become widely disseminated in museums. All the information available, whether in books, films or other media, derives exclusively from the scientific effort and the collections maintained by museum institutions, evidencing the central role of Science in the formation of children's interest in these themes.

1.1 GOALS

This contribution aims to present the activities carried out by the MPE of UNESP Rio Claro, which seeks to disseminate geological and paleobiological knowledge through the reception of visitors or actions external to the University, with a focus on the education of lay audiences.

For this, initially the organization of the fossils exposed in the MPE and the pedagogical approach adopted will be described. It is important to inform that the MPE always has professionals (coordinator, academic support assistant, students) prepared to receive school groups, using an accessible language appropriate to the age group of the visitors.

2 THEORETICAL FRAMEWORK

From the 1960s onwards, motivated by the New Museology movement, there was an increase in educational programs, aimed especially at school groups, reinforcing the educational role of museums (MARTINS, 2006). This influx of visitors has intensified-with the emergence of educational or pedagogical tourism movements. According to Andriolo & Faustino (2000, p. 165) "pedagogical tourism is that which serves schools in their educational activities and that involve travel".

Pedagogical tourism, often called technical visit, study trip, environmental studies, field class or tour class, has been recognized as an innovative pedagogical practice in several educational institutions, both public and private. This modality of educational activity has its roots in theorists such as Célestin Freinet, one of the main representatives of the New School movement, and one of the pioneers to think of an education that went beyond the limits of the school space (FREINET, 1988).

It is considered relevant, in this context, to present the distinction between the types of formal, informal and non-formal education, as proposed by Combs *et al.* (1973). Formal education corresponds to the hierarchically structured and sequentially organized educational system, which extends from elementary school to university. It encompasses both general academic studies and a variety of specialized programs and institutions, aimed at full-time technical and professional training.

Informal education is understood as a continuous and lifelong process, through which the individual acquires attitudes, values, skills and knowledge from daily experiences and interactions in various contexts (family, community, professional, cultural and media).

In turn, non-formal education refers to organized educational activities, outside the formal education system, which can operate independently or integrated with other broader initiatives. Such activities aim to meet identifiable audiences and specific learning objectives. Non-formal education became part of the international discourse on educational policies in the late 1960s (SMITH, 2001). In this period, this educational model had clearly defined purposes, and drew attention for organizational and methodological flexibility.

The proposal of non-formal education articulates curricular content with interdisciplinary and transversal projects, favoring learning through practical activities in alternative spaces to formal education. Fordham (1993) *In fashion* SMITH, 2001) identified four main characteristics of non-formal education in the 1970s: 1. Relevance in relation to the needs of socially disadvantaged groups; 2. Focus on specific categories of people; 3. Emphasis on clearly defined objectives; 4. Flexibility in organization and teaching methods.

Among the non-formal education activities, visiting museums is considered one of the most recognized, especially for its wide possibilities of interaction. According to Wagensberg (1998) these interactions can be classified in the following ways: *Hands-on*, where touch and physical manipulation are the main forms of visitor involvement; *Minds-on*, when there is an intellectual motivation, arousing reflections, and allowing ideas and perceptions to be transformed during or after the visit, giving rise to doubts and curiosities about knowledge; *Hearts-on*, when the focus is on the emotional dimension, seeking to sensitize the visitor in an affective way. Although some exhibitions prioritize only one of these aspects, it is desirable

that all of them be present, even if at different intensities, to promote a more complete and educational experience. Due to its diversity of audience or MEP promotes all three interactions, because it receives from children to university students.

According to Borun *et al.* (1983), after studies carried out in two North American Science Museums, it was found that the benefits of an educational visit go beyond the simple complementation of school classes. The experience in the museum can generate a cognitive gain, related to the learning of new knowledge and an affective gain, that is, greater interest and motivation in learning more about the subject, providing personal growth.

Reis (2005) emphasizes the importance of museums, not only as spaces that complement formal learning, traditionally developed in the classroom, but also for their ability to arouse curiosity, inducing the student to seek new sources of knowledge and knowledge.

Almeida (1997) emphasizes that museum educators must develop strategies to guide teachers so that they can make the most of the pedagogical potential. It suggests different different programs aimed at the different levels and interests of visitors.

Grinder & Mccoy (1998) identify three possible types of visits to museums: visit-lecture, guided discussion and visit-discovery, each characterized by different levels of participation and involvement of the public.

According to Cavalcanti & Persechini (2011), Science museums can be considered privileged mediators in the encounter between Science and the public, ranging from small local initiatives, such as small spaces, to large museums. Currently, both in Brazil and abroad, these spaces occupy a prominent position in the educational and cultural scenarios. The growing interest in educational tourism in science museums, in many cases, reflects the lack of adequate infrastructure for practical classes and experimentation in schools, as well as the insufficient training of teachers for the development of activities of this nature.

3 CHARACTERIZATION OF THE MUSEUM SPACE AND PEDAGOGICAL MEDIATION

Unlike a simple exhibition with samples, the MPE is organized chronologically, allowing the public to follow the evolution of living beings and geographical transformations of the Earth. The space becomes a classroom, the history of the Earth being narrated through the fossils and sedimentary rocks that represent each geological era.

During the tour, visitors are led through a timeline, starting with the first single-celled organisms, and continuing to more modern mammals, revealing, in an educational way, the fascinating trajectory of the evolution of life on the planet. The windows are arranged to represent the three great geological eras: Paleozoic, Mesozoic and Cenozoic.

Fossils from the Cryptozoic, or Precambrian, Eon are initially shown to be between 4.6 billion and 540 million years old (ma). Especially stromatolites are exhibited, but also some very primitive life forms from the Ediacaran Period, between 635 and 540 ma.

Then begins the Paleozoic Era (Figure 1), the oldest of the Phanerozoic Eon, starting with the Cambrian Period, from 540 to 485 ma. In this period the presence of trilobites is important, which constitute about 70% of the fossils found at this time, representatives of primitive marine life. The first vertebrates (fish) appear in the Cambrian.

Figure 1

Beginning of the MPE exhibition, showing the windows referring to the Paleozoic Era, from Cambrian to Permian

The Ordovician Period, between 485 and 445 ma, presents a modernization of the fauna in relation to the previous period, marked by the emergence and development of several groups, some of them persisting to this day. It is the so-called Great Ordovician Biotic Event. Trilobites, once dominant, now share marine environments with other invertebrates, reflecting the growing diversity in the oceans. As in the Cambrian, terrestrial life did not yet exist in a significant way, The emerged lands being almost devoid of vegetation and animals, representing a planet where life was still dominated by the oceans. The first fishes provided with maxillaries are identified in the Ordovician.

In the Silurian Period, between 445 and 420 ma, the expansion of reefs occurs in all equatorial regions, marking an important advance in marine life. Aquatic vertebrates, especially jawless fish (agnaths ostracoderms), show remarkable morphological diversification. In this period, more consistent records of flora and fauna in continental

environments emerge, only sketched in Cambrian and Ordovician, indicating the strongest beginning of continental land occupation by living beings.

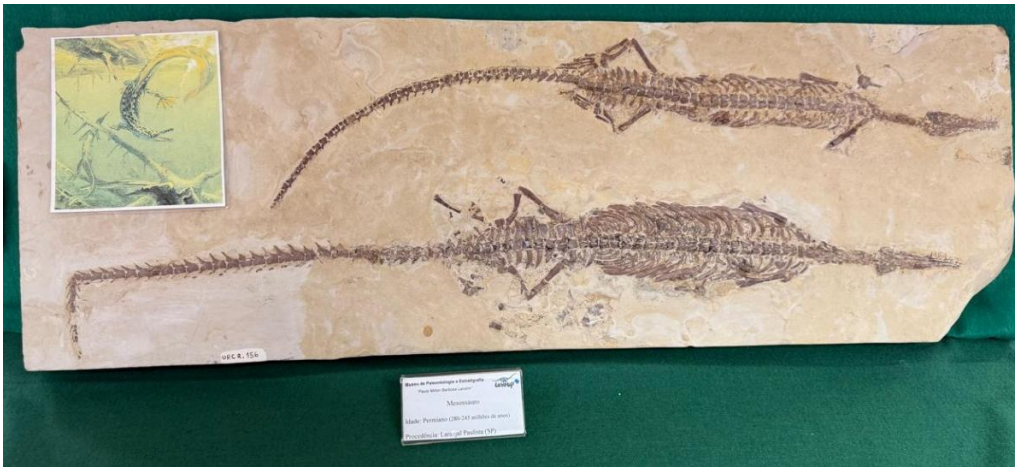
In the Devonian Period, between 420 and 360 ma, a great diversity of reefs and impressive diversification of invertebrates can be observed. Primitive forests begin to develop, consolidating the presence of vegetation on dry land. This period is known as the "Pisces Period", as these vertebrates achieve unprecedented variety and abundance. The first records of amphibians also date from this time, marking a fundamental transition for terrestrial continental life.

The Carboniferous Period, between 360 and 300 ma, is characterized by extensive development of continental vegetation, which formed extensive tropical forests, responsible for the genesis of coals. During this time primitive Devonian fishes, such as ostracoderms and placoderms, had disappeared, giving way to the dominance of cartilaginous and bony fishes. Amphibians became common, and the first reptiles appeared, marking an important evolutionary innovation, the amniotic egg, with a resistant shell and capable of being deposited on dry land. This adaptation gave reptiles a decisive advantage over amphibians, allowing them to expand and dominate terrestrial ecosystems for more than 150 ma.

In the Permian Period, between 300 and 250 ma, climatic conditions underwent profound changes. The humid and favorable climate of the Carboniferous gave way to a global process of aridization, significantly affecting continental flora and fauna. Plants lost the exuberant aspect of the previous period, and amphibians suffered a sharp decline in diversity, while reptiles extended their dominance, progressively occupying almost all environments on Earth, a predominance that would extend until the end of the Mesozoic Era. The end of the Permian was marked by the greatest biotic crisis in the history of the planet, when numerous groups of organisms that had thrived throughout the Paleozoic Era disappeared, such as mesosaurs (Figure 2), profoundly altering the course of the evolution of life on Earth. These extinctions were caused by strong basaltic flows and volcanism, in what is now northern Siberia.

Figure 2

Fossil and reconstruction of Mesosaurus, one of the oldest reptilian amniotes, from the Permian of Laranjal Paulista-SP



The Mesozoic Era begins with the Triassic Period, between 250 and 200 ma, when gymnospermophytes predominated among plants, covering wide areas of the continents, but the first angiospermophytes also appear (Figure 3). Reptiles diversified and occupied almost all of the terrestrial continental paleoecological niches, becoming the dominant group. In the oceans, cephalopod mollusks, represented by ammonites, were among the most diverse invertebrates. The bivalve mollusks began to occupy the ecological spaces left vacant by the extinction of several groups of brachiopods, the dominant conchifers in the Paleozoic Era, which occurred in the transition between Permian and Triassic. It is important to mention that the MPE shows a skull of *Thrinaxodon*, an example of great scientific importance. Although it belongs to a reptile (therapsid), it has heterodontia, that is, teeth of different morphologies, a typical characteristic of mammals, evidencing the evolutionary transition between these two groups (Figure 4). Dinosaurs and mammals emerge during the Triassic.

Figure 3

Image of three benches of the MPE. The first, from the Triassic, exhibits fossil trunks from the state of Rio Grande do Sul. The second, from the Jurassic, features sandstone slabs with footprints (ichnofossils) from the State of São Paulo. The third, from the Cretaceous, brings together fossils of fish from the Araripe Basin, in the state of Ceará

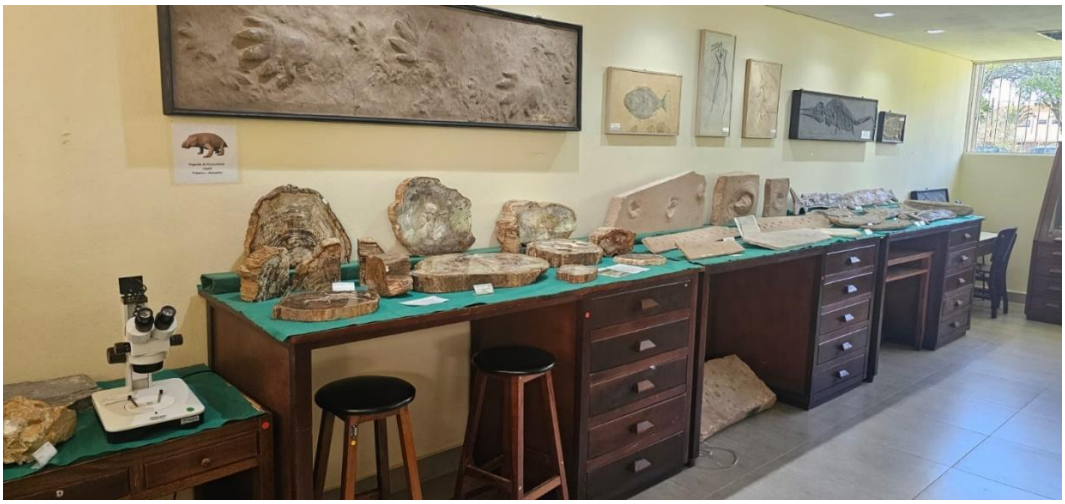
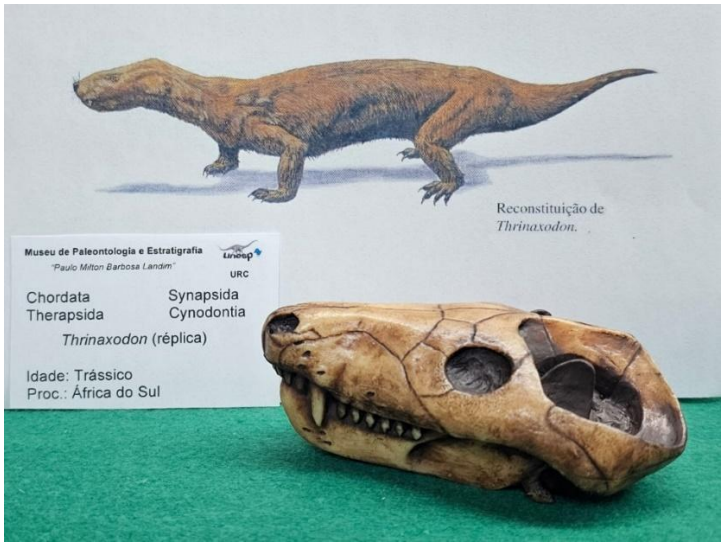


Figure 4

Osteological reconstruction (below) and reconstitution (above) of Thrinaxodon, an important Triassic therapsid, in mammalian ancestry



The Jurassic Period, between 200 and 145 ma, was marked by the full dominance of dinosaurs, and reptiles in general, which began to occupy practically all available ecological niches, both on land and in aquatic and aerial environments. The most significant group of invertebrates is that of ammonite mollusks. In the MPE there are slabs of sandstone from the city of Araraquara, showing footprints of reptiles and mammals.

During the Cretaceous, between 145 and 65 ma, the predominance of reptiles, especially dinosaurs, continued on the continents. In the exhibition are significant fossils of fish from the Santana Formation of the Araripe Basin and bones of sauropod dinosaurs, collected in the West of the State of São Paulo. They illustrate the rich biodiversity of this geological period, before the great extinction at its end, caused by asteroid impacts and volcanism.

Figure 5

The spaces corresponding to the periods of the Cenozoic Era, called Paleogene, Neogene and Quaternary

The Cenozoic Era begins with the Paleogene Period, from 65 to 23 ma (Figure 5). During the Paleogene, an intense evolutionary explosion of mammals began, which, after the disappearance of several groups of reptilian amniotes at the end of the Cretaceous, began to occupy the ecological niches left vacant. In the plant kingdom, the diversification of angiospermophytes continued, culminating, about 35 ma ago, with the evolutionary explosion of grasses. This group, which emerged in the Cretaceous, is made up of small and medium-sized plants that enabled herbivorous mammals to exploit a new and important source of food, which renews itself more quickly than gymnospermophytas and even arborescent angiospermophytas.

In the Neogene Period, between 23 and 2.5 ma, floras and faunas become progressively similar to today's. Climatic conditions, previously more homogeneous, begin to change with the formation of polar ice caps, which have intensified in the last 2.5 ma,

during the Quaternary Period (Figure 6). It was in this period that the evolution of the first hominids began, approximately 4 million years ago, in Africa, marking the beginning of human evolution.

Figure 6

A detail of how the exhibition is organized, using one of the spaces of Neogeno. Whenever possible, the fossil is associated with a reconstruction of the animal

The Quaternary Period begins at 2.5 ma and ends today. It is marked by strong glaciations and inter-glaciations, respectively cold and warm moments in the history of the planet. These environmental changes, and those occurring today, are explored during the visits they receive. It is the geological period that watches human evolution, from australopithecines to the different species of the genus *Homo*. Between the Pleistocene and Holocene epochs of the Quaternary, extinctions occur, especially affecting the Pleistocene Megafauna.

4 AUDIENCES RECEIVED AT THE MPE

4.1 EARLY CHILDHOOD EDUCATION

MPE welcomes preschool children through educational approaches, offering an experience of great importance. Especially preschool children have the opportunity to touch fossils and experience Science in a concrete and playful way (Figure 7). From an early age, direct contact with real objects awakens natural curiosity and stimulates active learning. By observing, touching and exploring fossils, children develop notions about the Earth's past,

prehistoric animals and understand that Science is dynamic, accessible and full of discoveries.

The sensory experience provided by fossils favors meaningful learning, allowing knowledge to be built from experience, and not just from theoretical explanation. Children come to understand that those fossilized fragments represent beings that really existed. The language used in the MPE is simple, curious and affective, without losing the rigor of the scientific content on the evolution of life on the planet.

Figure 7

Visits from preschool children, between 4 and 5 years old

4.2 FUNDAMENTAL EDUCATION 1 and 2

Elementary School students 1 and 2 are usually studying types of rocks and initiating contact with fossils. Teachers bring them to the MPE so that they can observe rocks and fossils, as well as biodiversity and evolution of species, complementing and enriching the contents worked on in the classroom.

The presentation to visitors is adapted to the age group. For younger children, the approach is more playful, seeking to connect the content to the child's reality and bring the MPE closer to their daily lives. During the visit, creativity, questioning and free expression are stimulated, encouraging teachers to allow students to explore at will. This freedom not only favors educational learning, but also enables living, interaction and experiences that

would hardly occur in the classroom, approaching the pedagogy of passion (FREIRE, 1983) and the playfulness proposed by Freinet (1988).

For elementary school students, the visit stimulates enchantment with Science and interest in nature, promoting critical thinking and respect for the history of life.

4.3 HIGH SCHOOL

It is observed that high school students, in addition to questions regarding fossils, evolution, are often focused on the entrance exam, and on possible academic careers. For this reason, during the visit, information is provided about the selection process and the courses offered by UNESP, as well as guidance to consult the professions guide available on the university's website.

In addition to exploring fossils and sedimentary rocks, students leave the visit with a good knowledge of the structure of UNESP, including information about student housing, university restaurant and other facilities of the *Campus*. Some show specific interest in Paleontology and ask about courses that enable postgraduate studies in the study of fossils, thus receiving more detailed information about these academic options.

The fact that it is a university museum also plays an important role in bringing high school students closer to the university. For many, this visit represents the first contact with an academic environment, and the welcome offered can arouse interest in higher education courses and scientific careers, working as an initial stimulus for the continuity of studies and the construction of academic trajectories.

Throughout history, MPE has been important in choosing undergraduate courses for students, and some of them went on to graduate school in the area. MPE is consolidated as an incentive to a scientific career. In high school, MPE reinforces curricular content, encourages scientific observation and broadens the view on the importance of preserving natural heritage.

4.4 UNIVERSITY EDUCATION

For university students, the MPE offers a training space, in addition to investigative aspects and research, enabling contact with scientific collections, cataloging methodologies and field and laboratory practices. In addition, it can serve as a place for internship, university extension and dissemination of academic results.

The MPE plays a central role in curating and maintaining the didactic collection, offering support to teachers in planning and conducting practical classes. Materials made available are used in regular educational activities, but the MPE also occasionally receives

students from different careers who, aroused by curiosity in classrooms, complement their studies or simply appreciate collections. In this way, MPE functions as a space for continuous learning, integrating theory, practice, and self-directed exploration.

5 OUTREACH ACTIVITIES RELATED TO INCLUSION

Expanding access to education for students with special needs has been presented as a very pertinent approach with regard to educational policies. Remembering Fordham (1993 *In fashion* SMITH, 1996) museums and other non-formal spaces have two characteristics that favor inclusion. 1-Relevance to the needs of disadvantaged groups. 2-Concern with specific categories of people.

In the scope of extension, the promotion of inclusion represents a challenge, especially in the peculiar context of a Museum of Paleontology and Stratigraphy, whose narrative is strongly based on visual elements and with a very content-based theoretical framework. However, at this time, more flexible strategies are used, which adapt to the target audience. The activities described below aim to ensure that some experiences are accessible to different needs in inclusion groups. Throughout this report, not only should the activities carried out be recorded, but also the lessons learned and perspectives for the development of a more inclusive and comprehensive educational museological practice should be emphasized.

Before each school visit, teachers are consulted about the presence of students with special needs, including those with visual impairments. An option is provided for teachers to indicate if students require any type of accompaniment or facilitation during the visit, so that everyone has an enriching experience, respecting the individuality of each one.

What has been happening in the MPE for some time is access to all its audiences, regardless of their physical, sensory and cognitive conditions.

5.1 VISIT OF ADERC (ASSOCIATION OF THE DISABLED OF RIO CLARO)

During this visit, materials were made available that could be played on a bench, so that they were accessible to all. There were also verbal explanations pertinent to the materials made available, using language appropriate for this audience.

This approach allowed visitors to participate in an active way, making the educational experience inclusive and engaging. By offering tactile materials and adapted explanations, the MPE promoted not only access to scientific information, but also the appreciation of autonomy and curiosity of the participants, reinforcing the commitment to inclusive education and democratization of knowledge.

5.2 CAPOEIRA PROJECT FOR NEEDY CHILDREN

Due to administrative details at that time, the MPE did not open on Saturdays, but when requested, it spared no effort to serve interested people. One of these visits was scheduled by a teacher from the public school system, responsible for a capoeira project in a school in the periphery. Around 30 students from Elementary School 2 came for a visit on a Saturday afternoon. After the visit, the students were taken for a walk through the *Campus*, where information was provided about public university, available courses, university restaurant. It is shown that the university environment is for everyone, and that it could certainly be theirs too. Thus, the MPE not only disseminates scientific knowledge, but also opportunities for progression in studies and professional career.

5.3 MUNICIPAL CENTER FOR ASSISTANCE TO THE BLIND PERSON (CMPC)

Expanding access to education for students with special needs is a very pertinent approach with regard to educational policies.

On this visit to the CMPC, materials specially chosen for tactile accessibility were taken (Figure 8). We served 25 people on this occasion.

The members of the Municipal Center for the Blind Person (and low vision) were very receptive and enjoyed this experience with the fossils, and requested a visit to the MPE. After a few months this visit took place, together with the person responsible for the project.

Figure 8

Museum of Paleontology and Stratigraphy which includes a countertop with tactile material and Braille legends

5.4 EVENT AT THE SCHOOL HOUSE

In 2017, the MPE participated in the event "Geosciences Week: Knowledge is Power", held on the premises of Casa Escola, a socio-educational center that the Casa Foundation maintains in Rio Claro, in shared management with the non-governmental organization Union of Friends of Minors (UDAM). For two years, the MPE participated in events with lectures and fossils from all periods for young inmates.

5.5 CAPS - PSYCHOSOCIAL CARE CENTER

The MPE received the group from the Psychosocial Care Center (CAPS), in a visit full of discoveries and sensitivities. Moments like this reinforce the MPE's commitment to inclusion, welcoming, and promotion of scientific knowledge for all.

The activity provided direct contact with fossils and sedimentary rocks, arousing curiosity, reflection and well-being. In addition to learning about the history of the Earth, the visit contributed to the strengthening of self-esteem, socialization and a sense of belonging.

By opening its doors to the CAPS, the MPE reaffirms its role as a university extension space, integrating science, education and care for the community.

6 PANDEMIC / THE "FOSSIL OF THE WEEK" PROJECT

During the pandemic, the MPE was closed, as well as the entire University. In order not to lose contact with the students, the project "The Fossil of the Week" was developed. It consisted of an image of a fossil, possibly of a sedimentary rock, with description and curiosities, written by a scholarship holder of the Dean of Education and Culture of UNESP, and certified by the Coordinator of the MPE, on the pages of social networks ("Facebook" and "Instagram"). This project lasted 2 years (2020 and 2021), achieving a very positive response from both students and people in the community. Clarifying that the pages are still active.

7 "AN EVENING AT THE GEOLOGY MUSEUMS" PROJECT

In partnership with the Escola dos Astros Project, of the Physics Course at UNESP, "A Night in the Geology Museums" offers students of night courses and EJA the opportunity to experience cultural and scientific experiences at an accessible time. During the activity, a telescope is set up on the lawn in front of the MPE, allowing the observation of the sky under the guidance of the partner team. The initiative arose to serve students who work during the day and cannot visit the MPE during this period, promoting welcoming, appreciation and inclusion through education and science.

More than a visit, "A Night at the Geology Museums" is a gesture of openness and belonging. It shows that the University has its doors open to all audiences, and that scientific knowledge can and should reach all ages and realities. It is an invitation for each visitor to feel part of this, a story that began millions of years ago, but which continues to be written with each encounter, discovery and curious look inside the MPE.

8 EXTERNAL EVENTS

8.1 HISTORICAL AND PEDAGOGICAL MUSEUM "AMADOR BUENO DA VEIGA" OF RIO CLARO

The MPE participated in the extension project "Espaço Com_Ciência", where several representatives of UNESP shared a space in the Historical and Pedagogical Museum "Amador Bueno da Veiga" in Rio Claro, with an exhibition. This project lasted a year and made it possible for students from the public school system to be taken by the city hall to visit this Museum. The MPE had a scholarship holder and several monitors from the courses in Geology, Biology and Ecology, as well as several professors and technicians from UNESP *Campus* Rio Claro. It also had a Master's student, a PhD student and a Postdoctoral student.

8.2 NATIONAL MUSEUM WEEK AT THE RIO CLARO SHOPPING CENTER

During the National Museum Week, the MPE held an exhibition at the Rio Claro Shopping Center, taking part of its collection and scientific knowledge to an everyday and accessible environment. The action aimed to bring the public closer to Science and University, arousing interest in Paleontology and Earth history. This is a valuable opportunity to popularize Science and reach people who may have never visited a museum, allowing them to learn about fossils, understand the formation of sedimentary rocks and recognize the importance of geological and paleontological heritage.

These extension actions play an essential role in the democratization of scientific knowledge, making it part of people's lives and stimulating curiosity. By occupying public and popular spaces, the University, through the MPE, reaffirms its commitment to education, culture and scientific dissemination.

8.3 SCIENCE SQUARE

Every year the MPE participates in the Science Square event, an occasion in which the University brings together several extension groups to present their work to the population in the city's central square. This initiative is essential to bring the community closer to academic knowledge, and contribute significantly to the popularization of Science.

8.4 CULTURAL SCIENTIFIC SOIREE

In 2018, the MPE participated in the Cultural Scientific Soirée in the State Forest "Edmundo Navarro de Andrade", which was held on a Sunday. This event was promoted by the Graduate Association "Education and Freedom", in partnership with the Department of Culture of the Municipality of Rio Claro.

This event was part of the Notice program Set Nº 07 / 2018 - UNESP / Santander - Programs "Educating for Diversity", and the Project "Well Living for Tod@s", whose objective was to disseminate and expand access to cultural and scientific projects carried out by UNESP Rio Claro, as well as to expand public spaces for coexistence with the various forms of cultural expression present in Rio Claro.

It is estimated that more than 1,000 people passed through the place.

8.5 TRUCK KNOWING THE UN SDGS"

The MPE participated in the event "Truck Knowing the UN SDGs", held by Whirlpool in the Public Garden of Rio Claro, with the objective of raising awareness among the population about the Sustainable Development Goals (SDGs). The action brought together 17 stalls, each dedicated to an SDG. In partnership with the coordinators of the Biology and Ecology courses, the MPE was part of tent No. 15, "Life on Earth", presenting the theme *"Past and Present Biodiversity and Anthropogenic Impacts"*. The activity had 262 participants, out of a total of 8,383 visitors to the event.

8.6 "BIO ON THE STREET"

Event organized by the Academic Center of Biology of UNESP Rio Claro, at the Center for Unified Arts and Sports (CEUs), Mãe Preta neighborhood. MPE participated with an exhibition of fossils.

8.7 CCI - CHILDREN'S LIVING CENTER OF MOGI MIRIM

In 2023, the MPE was at the CCI, Mogi Mirim Children's Living Center, an NGO that aims to promote activities for children and adolescents, in the educational, social, cultural, recreational and sports areas. A PROEC scholarship holder gave a lecture, followed by an exhibition of MPE fossils.

8.8 SCIENCE ON THE LAKE

The MPE participated in an exhibition of fossils at Lago Azul, in Rio Claro, bringing Science and academic knowledge to one of the most frequented public spaces in the city.

The activity allowed the population to get to know part of the MPE's collection, observe real fossils and learn about the geological and biological histories of the Earth. By occupying this space outside the University, the MPE expanded its reach, arousing scientific curiosity in people of all ages, and reaffirming its commitment to scientific dissemination and university extension.

9 SPECIAL GROUPS OF UNESP

The MPE maintains partnerships with several projects and institutions of UNESP, strengthening its educational and extension actions. Mention should be made of the Special Training Program of the Mathematics Course, the Museum of Geography and Tactile Cartography, and the Escola dos Astros Project, responsible for nocturnal activities of scientific dissemination. In order to expand interdepartmental integration, a meeting was held with a professor from the Department of Education, coordinator of the Biology Teaching Program, aiming at new joint actions. The MPE also received groups of laboratories and academic leagues, such as LABOT (Botany Laboratory), on a visit with an emphasis on Paleobotany, and the Academic League of Arthropodology, with a focus on arthropods. These activities reinforce partnerships with institutional programs such as PEB, PIBID and PET-Biology.

10 CONCLUSIONS AND FINAL CONSIDERATIONS

The MPE of UNESP Rio Claro began its activities in a modest way, occupying a small room aimed mainly at undergraduate students and school visitors. In almost 25 years it has established itself as a space for scientific and cultural education, receiving tens of thousands of visitors of different ages and levels of education.

Each group is served in a personalized way, with age-appropriate content, promoting accessible and engaging educational experiences. After closing, during the Covid-19 pandemic, the MPE underwent renovations and expansions, reaching 140 m² of exhibition area. The reopening, on May 18, 2025, marked a new phase, with improved infrastructure, expansion of the fossil exhibition and more than 2,000 visitors since then, not counting external events.

Committed to inclusion, the MPE has accessible corridors, tactile materials and labels in "Braille", ensuring full participation of all audiences. Among the new initiatives is the Project *"A Night at the Geology Museums"*, which attracted more than 200 additional visitors, reinforcing the open and integrative characteristics of the University.

The MPE receives people from all over the state and houses reference collections for research, teaching and scientific dissemination. He also collaborates in the organization of fossil collections in municipalities such as Monte Alto, Marília, Uberaba, Lucélia, Irapuru and Presidente Prudente.

Throughout its trajectory, the MPE has become a link between researchers and the community, stimulating interest in Science and valuing the natural and cultural heritage. It thus fulfills a social function by democratizing access to knowledge, promoting scientific education and strengthening the relationship between Science, culture and citizenship.

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