

## The Exhibition of Geoheritage in Geoparks and Geological Museums

### A Exposição do Geopatrimônio Entre Geoparques e Museus Geológicos

Fabien Van Geert \*

**Abstract:** This article is based on the observation that, in Europe, the presentations of geological heritage in museums located within geoparks differ from those found in museums located outside of these areas, often in geology departments of natural history museums. As they both present a specific part of geoheritage (either conserved *in situ* or *ex situ*), this article seeks to understand the reasons for these differences, by postulating that they are due to different conceptions of geoheritage on which these institutions are based. As a result, these evolve and transform in parallel with each other, on the basis of issues specific to each of their institution, without real connection between them. The article then concludes with the possibilities of bringing these two parts of geoheritage closer together, while geoparks are becoming increasingly popular with museum visitors.

Key-words: Geoheritage, Geopark, Interpretation Centre, Geological Museum.

**Resumo:** Este artigo parte da observação de que, na Europa, as apresentações de museus localizados *in situ*, próximos a geossítios e dentro de geoparques diferem daquelas encontradas em museus localizados *ex situ*, muitas vezes em departamentos de geologia de museus de história natural. Como ambos apresentam geopatrimônio, este artigo busca compreender as razões dessas diferenças, postulando que elas se devem às diferentes concepções de geopatrimônio nas quais essas instituições se baseiam. Como resultado, estas evoluem e se transformam paralelamente entre si, a partir de questões específicas de cada uma de suas instituições, sem conexão real entre elas. O artigo conclui com as possibilidades de aproximar essas duas partes do geopatrimônio, enquanto os geoparques estão se tornando cada vez mais populares entre os visitantes, que são potencialmente também visitantes de museus *ex situ*.

Palavras-chave: Geopatrimônio, Geoparque, Centro de Interpretação, Museu Geológico.

As a museologist, we recently got aware of the existence of the geoheritage concept. It was as a missionary of the Geopark project of the Horizon 2020 program of the European Union<sup>1</sup>, coordinated by Yves Girault of the National Museum of Natural

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\* Université Sorbonne Nouvelle. E-mail: [fabien.van-geert@sorbonne-nouvelle.fr](mailto:fabien.van-geert@sorbonne-nouvelle.fr)

<sup>1</sup> This program, bringing together French, Spanish and Moroccan researchers, had the main objective of studying two geographical areas (Morocco-Spain), faced with a different management of (geo)heritage in order to strengthen socio-economic development and local dynamism. Available in: <http://geopark.mnhn.fr/fr/programme-geopark>. Consulted in: 15 Dec. 2021.

History in Paris (*Musée national d'histoire naturelle*), that we first discovered it back in 2016. The interest that we then began to show in the analysis of the logic underlying the creation of geoparks, in Spanish Catalonia in particular, in connection with a new trend in the use of heritage as an element of place branding strategy (VAN GEERT, 2019a), prompted us to visit geological museums with which we had until then also been quite unfamiliar. Trained in Anthropology, and having until then been rather interested in the mutations of ethnographic museums (VAN GEERT, 2020a), these institutions were quite alien from our research objects. When we visited these institutions back then, we were particularly surprised by their exhibitions which appeared to be very out of step compared with the changes experienced at the time by other museums such as ethnographic museums which have been at the heart of criticisms emanating from the proponents of postcolonial and decolonial perspectives since the 1990s.

It is from this initial observation that we have tried to understand the recent transformations of these geological museums (VAN GEERT, 2019b and 2020b) and how they have been able to rethink the exhibition and presentation of their collections, just like the ethnographic museums which had been radically renewed in the 2000s in Europe, in new buildings, under new names, and with new objectives aimed at highlighting the richness of cultural diversity. Based on our research experiences in Spanish geoparks, we were also particularly intrigued by the fact that the concepts of geoheritage, but also of geopark, were absent from these geological museums, even though these terms were the subject of a growing interest among researchers as we could see through the European H2020 research project. It thus seemed that the reflections related to the enhancement of geoheritage *in situ*, in geoparks, followed a different path from the one guiding the transformations of geological museums we were observing. These two processes did not seem to meet, even though many actors in geoheritage and the creation of geoparks were working in natural history museums.

To analyse these realities in more details, we compare in this article museums located within geoparks, with museums located outside of these areas. We postulate the idea that their differences are related to the fact that these two institutions, which both exhibit and present geoheritage as a whole (*in situ* and *ex situ* geological heritage, extracted from its original context and exhibited in museums, as shown in Brazil by Ponciano et al., 2011 or Silva, Souza and Mansur, 2021), are based on two different visions of geoheritage. To explore this idea, we will focus on Europe, and mainly on Spain and France, whose reflections appear to be similar. We will not discuss the case of the ambitious museums created in Chinese geoparks in recent years, which need to

be properly studied. Nor will we discuss the case of North America, where the situation is different, and where national parks integrated the question of geology long before Europe, and under specific terms.

To approach this subject, this article is divided into four points. The first one deals with the emergence of geoheritage and its multiple meanings. The second focuses on the analysis of museums located in geoparks, while the third addresses geological museums, located outside of these areas. The fourth and final point offers a brief comparison between these two types of institutions, in order to draw a series of conclusions.

## 1. The emergence and the meanings of geoheritage

As it has been widely demonstrated, the use of the concept of heritage developed, in Western Europe at least, in the 1960s and 1970s under the influence of Unesco, encompassing various forms of protection existing since the beginning of the 19th century. This is the case of cultural heritage as synthesized in 2017 by Thibault Le Hégarat within the framework of the Patrimathèque platform<sup>2</sup>. According to the author, this term was first used in France, to encompass the main forms of protection existing at the time, such as fine arts (preserved in museums), historical monuments (under the 1887 and 1913 laws) and safeguarded sectors (set up following the adoption of the Malraux law of 1962). Between the 1970s and 1980s, the term heritage will be taken up and institutionalized by the French Ministry of Culture, which will integrate it into its organization chart, with the creation of the Heritage Department in 1978 (*Direction du patrimoine*), the Ethnological Heritage Mission in 1980 (*Mission du patrimoine ethnologique*), or the change of name of the General Inventory of Monuments and Artistic Riches of France (*Inventaire général des monuments et des richesses artistiques de la France*), created in 1964, which will then become the General Inventory of Cultural Heritage (*Inventaire général du patrimoine culturel*). The year 1980 was also declared by the Ministry of Culture and Communication "Year of Heritage" (*Année du patrimoine*) in order to make heritage better known to French people. Since the 1980s, and until the present day, the concept of heritage will then open up to other forms of heritage, which will be defined as ethnographic, maritime, industrial, technical, audiovisual, or even later as intangible heritage. In this context, we will gradually speak more in French of heritages

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<sup>2</sup> Available in: <http://www.patrimatheque.com/accueil/equipe-du-site/>. Consulted in: 15 Dec. 2021.

(*patrimoines*), rather than heritage (*patrimoine*), favoring the use of the term in the plural to emphasize the different forms that this heritage can take, well differentiated between them in terms of issues, actors, practices, management etc.

Natural heritage will follow a similar pattern, even though separately from cultural heritage as European modernity established a clear border between nature and culture (LATOURE, 1991; DESCOLA, 2005). As a consequence of this specific history, natural heritage will integrate sites that are not culturally modified, even if this logic is today deeply questioned, both by researchers and international institutions in charge of heritage which are currently trying to recreate links between natural and cultural heritage. In France, like cultural heritage, the different typologies of nature protection that emerged between the 19th century and the 1960s (whether as natural sites or monuments, nature reserves, national parks etc.) will thus be grouped together from the 1960s and 1970s under the concept of natural heritage. Unlike cultural heritage within which new types of heritage will complete a first "classical heritage" (mainly defined from the point of view of history of art and archeology), the concept of natural heritage will rather be sub-divided at the end of the 1970s giving rise to at least two major types of natural heritage, depending on whether it bears witness to biotic factors (relating to living things and more generally to fauna and flora), or abiotic (linked to the environment and independent of living beings). Even if it would be advisable to speak from then on of natural heritages (*patrimoines naturels*), in the plural, today we still tend to use the term in the singular, nature appearing as indivisible, unlike culture, whose plurality of forms would be considered by the use, in the plural, of the term cultural heritages (*patrimoines culturels*).

This subdivision within natural heritage is due to the progressive recognition of geological spaces of interest. In France, the law of July 10, 1976 is the first step allowing the protection of mineral deposits, fossils, geological, geomorphological or speleological remarkable formations. Until then, geological sites were not protected *in situ* in France, unlike other nearby countries such as Switzerland where boulders were protected from the beginning of the 19th century. In 1980, the first geological nature reserves were created in France (the Regional nature reserve of Montredon, as well as the National nature reserves of Saucats-La Brèze and the island of Groix), followed by many others over the years 1980s and 1990s, which will contribute to the holding of the First International Symposium on the Conservation of our Geological Heritage in Digne-les-Bains in June 1991. As it is often recalled in the literature, the latter will mark the official recognition of this new heritage, opening the door to a resignification of certain sites, monuments, reserves or parks, formerly perceived as part of natural heritage, which will

now be conceived as witnesses of the memory of the Earth, quickly redefined as geoheritage.

From a management point of view, this emergence of geoheritage as a subdivision of natural heritage will give rise, as for all types of heritage, to the creation of a specific heritage chain. This chain, theorized by the French anthropologist Daniel Fabre on the basis of cultural heritage, is made up of five links: designation, classification, conservation, restoration and dissemination (FABRE, 2013). For geoheritage, the designation link consists on the preparation of geoheritage inventories, which are meant to serve in France as a basis for the implementation of conservation policies (DE WEVER et al., 2018). From this classification process, measures for the conservation and restoration of geoheritage (the «geoconservation» process as defined by Panizza, 2001) can take place at different scales for enhancing protection. Finally, the dissemination link of the geoheritage chain is made up of promotion and activities aimed at «making heritage» beyond the scientific community through publications, awareness programs (such as the International Year of the Planet Earth in 2008), guided tours around geoheritage, exhibitions, television programs etc.

Consecutively, various theoretical reflections will emerge in order to define the reality and the meaning of geoheritage, like the many researches done in France on cultural heritage since the early 1990s (CHOAY, 1992; LÉNIAUD, 1992; BABELON AND CHASTEL, 1994; DAVALLON, 2006). In this context, the significance of geoheritage will quickly exceed the material traces located *in situ* that illustrate the abiotic factors of natural heritage. Close to the ideas already developed by Gray (2003), Reynard (2005) will for example propose to reflect on the values of geoheritage, which go beyond simple scientific values (by bearing witness to the memory of the Earth), to also integrate economic, historical, cultural or even aesthetic values which must be taken into account when defining this type of heritage. Similarly, during the holding of the first “National Days of Geological Heritage” (*Journées nationales du patrimoine géologique*) organized in 1997 at the Ministry of the Environment at the initiative of the Association of Geologists of the Paris Basin (AGBP), geological collections, but also ancient writings, publications as well as anthropized sites were recognized as being part of geoheritage. Protected in its *in situ* form since the 1970s, geoheritage will therefore integrate from now on its *ex situ* component (FRÖHLICH, LORENZ AND CORNÉE, 1998). In this context, Bétard (2017) will extend Reynard's ideas by recalling that the geological collections of museums are not limited to the abiotic portion of natural heritage, but that they are also charged most of the time with a cultural dimension, allowing to consider them as “hybrid

constructs at the interface between naturalistic or geoscientific knowledge, sensitive approach, collective appropriation and/or political decision” (BÉTARD, 2017: 531). This conception will also be taken up by De Wever, for whom geoheritage would offer information allowing the understanding of the formation or the evolution of the Earth, but also of the history of science, while serving educational purposes (DE WEVER et al., 2018: 14).

This theoretical conception of geoheritage will form the basis for the development of geoparks in the 2000s, which will be recognized by Unesco as a way of promoting geoheritage from a scientific, educational, but also tourist point of view in order to facilitate the economic development of territories. Located at the crossroad between a scientific vocation of geoconservation and study of geology, and the development of a touristic narrative on territories (GIRAULT, 2019), geoparks will in fact be based on a broad vision of geoheritage, which includes the memory of the Earth but also the other types of heritage existing in a given territory.

While a Unesco Global Geopark demonstrates the international importance of its geological heritage, its main objective is above all to explore, develop and celebrate the links between this geological heritage and all other aspects of natural, cultural and intangible heritage. It is about reconnecting humanity at all levels of the planet, 'our home', and highlighting how it has, over 4.600 million years, shaped aspects of our lives and our societies<sup>3</sup>.

According to this idea, the memory of the Earth will be perceived in geoparks projects as conditioning all other forms of heritage, natural or cultural, the term geoheritage being understood here as a kind of "primary heritage", or even a "superheritage" encompassing all the others. This same idea can be found in the concept of geotourism, as theorized by Newsome and Dowling (2010), which integrates cultural tourism, ecotourism (centered on the discovery of the flora and fauna of a territory), but also adventure tourism insofar as it does not destroy geosites. This is this conception of geoheritage that we will find in the interpretation activities proposed in geoparks, as we will see in the second part of this article.

## 2. The museums located within geoparks

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<sup>3</sup> Available in: <http://geopark.mnhn.fr/fr/geopatrimoine/elements-definition/geopatrimoine-patrimoine-geologique>. Consulted in: 15 Dec. 2021.

If we look at the different types of presentation of geoheritage we can find in geoparks, it is clear that they do not innovate much, and have mainly adapted to their specificities the techniques and equipments developed long ago by natural parks. This "trilogy of natural parks", as defined by Cayla (2009) is made up of trails, information panels and museums. As Cayla has shown from the example of the Alpine Arc (CAYLA, 2009), some countries prefer one or the other of these strategies. In the Alpine countries of Latin culture (Italy, France, French-speaking Switzerland), preference is for example given to museums, while in the countries of Germanic culture, there is a tendency to favor *in situ* developments.

In geoparks, trails offer little interpretation, as they are mainly a marking technique aimed at identifying geological points of interest through routes defined by scientists and tourism stakeholders in geoparks territories. We will therefore leave them aside in this article, even if it would be interesting to focus on the ways in which they are created, as they document a selection and hierarchization process between geosites from specific points of view.

Apart from these trails, information panels come in different shapes, sizes and contents in geoparks. They can present geological or geomorphological phenomena in order to explain the composition of local rocks. Beyond a scientific approach based on diagrams showing the different types of rocks, which is sometimes difficult for the visitors to understand, we also sometimes find on these information panels approaches more related to scientific divulgation, which deal with the formation of landscapes, through didactic drawings or diagrams, in order to promote an easier understanding of geoheritage. As for the natural parks, the underlying idea here is to present, explain but also touch emotionally the visitors on the importance and the fragility of geoheritage. By loving it (or more modestly by understanding it, or even simply by finding it beautiful), these information panels would therefore contribute to make visitors aware of geoheritage in order to better protect it. In addition to geological aspects, these panels can also sometimes address the socio-economic and socio-cultural dimensions of geoheritage, dealing with cultures, ways of living, but also local legends (that is Intangible Cultural Heritage) that explain for example geological forms in oral traditional cultures.

As for the museums, we can see different forms of institutions, depending on whether they were built before the creation of the geoparks, or after. In Europe, it should be pointed out that a large number of these museums were not built as part of geoparks projects. They often already existed, mainly as site museums, linked to the discovery

and presentation of geological points of interest, but also of paleontology, archeology, and even ethnographic or industrial practices. Following the creation of geoparks, these pre-existing museums will thus be transformed into spaces for the presentation of geoheritage, thereby reinventing their purpose. In these museums, however, this change did not always imply a fundamental museological renovation. This transformation is often limited to affixing the geopark logo at the entrance of the museum, a short text at the start of the visit, or simply providing information within the museums on things to do in the geopark. By operating this way, the former paleontological, geological or archaeological narratives presented in these museums are now included under the term of geoheritage, as wished by the geoparks program which has a broad vision of this concept.

For the Central Catalonia Geopark located in Spain, recognized by Unesco in 2015, the adaptation of the two pre-existing museums illustrates this logic. At the Moirà Archaeological and Paleontological Museum (*Museu arqueològic i paleontològic de Moirà*), a municipal institution created in 1935 that exhibits the archaeological and paleontological remains of the caves and dolmens present in the village, as well as some photographic and artistic collections, no mention is made of the geopark on the museum website<sup>4</sup>. The Toll Caves (*Coves del Toll*), where many of the artifacts on display in the museum come from, nevertheless appear to be an information space for the geopark according to its website<sup>5</sup>. The situation is similar for the Valentí Masachs Geological Museum (*Museu de geologia Valentí Masachs*). Founded in Manresa in 1980 and attached to the Higher Engineering School of the Polytechnic University of Catalonia (UPC), this museum aims to display the geological and mining resources of central Catalonia. Renamed Geomuseum after the creation of the geopark, it is supposed to allow visitors to discover the geoheritage of the territory through the exhibition of mineralogical collections testifying to the richness of the subsoil of this territory. However, both rooms were carried out before the creation of the geopark, and the new name of the museum did not seem to have had a significant impact on its museological approach.

Located a hundred kilometers further north, the museums integrated in the Origins Geopark were also built before its recognition by Unesco in 2018. Without involving a restructuring of their exhibitions, the narratives presented in these institutions (whether it is the production of salt at the Museum of Gerri de la Sal or the presence of dinosaurs

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<sup>4</sup> Available in: [http://www.covesdeltoll.com/museu\\_arqueologic.htm](http://www.covesdeltoll.com/museu_arqueologic.htm). Consulted in: 15 Dec. 2021.

<sup>5</sup> Available in: <https://www.geoparc.cat/fr/socol/le-geoparc/>. Consulted in: 15 Dec. 2021.

at the Museum of the Conca Dellà in Isona) are now articulated with each other through geoheritage, although this concept paradoxically appears only rarely in the texts of these institutions. On the other hand, as it was the case for the two museums of the Central Catalonia Geopark, information leaflets on the geopark and the cultural spaces it encloses are present in these museums, as well as the logos of the geopark or showcases presenting its products for sale in their shops. This logic is also found in the visitor center of the city of Tremp. Heart of the Origins Geopark, and the starting point for geotourists to explore its various facets, this center (named Epicenter-Pallars Jussà Visitor Center) was built in 2013 to introduce visitors to the tourist attractions of the Pallars Jussà comarca<sup>6</sup>. While this territory more or less corresponds to the boundaries of the geopark, these riches (whether cultural, natural, intangible, geological or paleontological) are now included in the narrative created around the memory of the Earth since the recognition of the geopark by Unesco (even before this labeling, it should be noted that a presentation of the geopark project had been affixed in each of the rooms of this center in order to raise public awareness of this initiative, well in line with Unesco's desire to promote participatory and community-based approaches on geoheritage).

Apart from these pre-existing institutions, some museums were also designed as part of some geoparks applications for Unesco. They may be created *ex nihilo*, but they rather consist in the addition of new building(s), new room(s), or even more modestly device(s) to pre-existing museums or interpretation centers, often renamed, after the creation of geoparks, as « house of the geopark », or « house of the park and the geopark ». These different museums have in common the fact that they are often (but not exclusively) designed within geoparks projects as places of reception for visitors allowing them to explore, from these spaces, the entire geopark territory. As geoparks are not enclosed spaces (unlike national parks), these centers are often set up in strategic locations of the territory, whether in the main town or village or at a crossroad between different routes in order to have a greater visibility.

For these reasons, these spaces in Europe are closer to the model of interpretation centers than to museums within a strict bosom (without however explicitly using this name). Part of the “museum ecosystem” (MAIRESSE, 2012), and so close to museums that it is difficult to clearly differentiate them from each other, the main specificity of

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<sup>6</sup> The *comarca* is the basic supra-municipal administrative entity of Spain. In some cases, such as in Catalonia, this territory corresponds to historical realities from which cultural and economic policies are articulated.

interpretation centers lies in their approach. More than places dedicated to the constitution of a heritage that should be valued in their exhibitions, their aim lies rather in the desire to communicate some ideas about a given heritage existing outside of the center (CHAUMIER AND JACOBI, 2009). As the creation of this narrative is more important than the valorisation of a collection (DESVALLÉES AND MAIRESSE, 2011) - even if the latter is not completely absent from these centers - these museographic spaces will therefore particularly use digital, tactile and didactic devices, but also panels with texts and photos, or even dioramas in order to communicate some interpretation keys to their visitors. Located at the heart of the geoparks, these spaces are thus thought of as places to welcome visitors (geotourists) allowing them to explore, from these centers, the whole territory. Due to this approach, these geopark museums/interpretation centers are fully in line with the first Ecomuseums created in France in the 1960s and 1970s, within the Regional natural parks whose aim was to create spaces for synthetic presentation of these territories, their specificities, their histories, their nature and their culture. They are also cousins of other current spaces for the interpretation of territories, such as the CIAP (Architectural and Heritage Interpretation Center-*Centre d'interprétation de l'architecture et du patrimoine*) which must accompany, in France, the recognition of territories as *Villes et pays d'art et d'histoire* by the Ministry of Culture.

If we compare these interpretation centers between them, it is possible to reveal a common framework (depending of course on the size of the structures, their objectives, but also the nature of the geoheritage they explain). First, we can observe that they often consist of a reception area (located at the entrance, and more rarely at the exit of the center) offering information on the various things to do in the geopark. In this space, which often takes the form of a display with leaflets or cards, visitors can learn about the possible activities linked to the memory of the Earth, but also all those related more generally to culture and nature, according to the logic of geotourism as defined earlier. Multimedia terminals can also help visitors to better understand the possible activities to do in the territory, while the employees can also answer their questions and provide them with more information. Like the pre-existing museums now integrated within geoparks, this reception area is often accompanied by a shop, more or less large, where visitors can buy postcards, things related to the geopark, the memory of the Earth or the cultural and natural specificities of the territory, but also geotourism products (such as hiking maps, animal observation guides, souvenirs, or even local products whose marketing strategy is based on the memory of the Earth). According to the logic of the Geofood

program initially set up in Norway<sup>7</sup>, in the visitor center of the Origins Geopark for instance people can buy bottles of wine, whose name and labels refer to the geological history of the territory, which is said to condition its taste and color. This is also the case in France in the Normandie-Maine Geopark where visitors can buy chocolate worked in the shape of the fossils that can be found in the geopark.

Apart from this reception area and the shop, an exhibition space can also be found in all these interpretation centers. It tends to present the territory in a synthetic way in order to give visitors a vision of its limits. We often find here maps or even 3D models presenting the territory, its geological specificities (such as the names of the summits in the case of mountainous areas), its orography as well as its human settlement (location of towns and villages, roads...). We also often find in this space an audiovisual device (immersive for the most ambitious, or a simple projection for the more modest structures) which aims to show the touristic interest of the geopark, by particularly highlighting the beauty of its landscapes, often filmed from a bird's eye view. The different types of heritage present in this territory are also present in these devices, putting geosites, natural, tangible and intangible cultural heritage on the same level, well in phase with the conception of geoparks, which sees the memory of the Earth as conditioning the specific development of nature and culture in a given territory. In this sense, these videos correspond to the logic of advertising spots produced for these territories, often presented at tourism fairs in order to promote them (in certain spaces, these same videos are sometimes shown to the public). Far from a scientific divulgation perspective, these audiovisuales mainly aim to make visitors aware that they are located in a geopark territory, and that it offers many tourist attractions.

Many geoparks interpretation centers also often have a room, or even a device explaining what a geopark is, and why this territory in question is, or should be recognized as such, often taking up point by point the different ideas put forward, during, or after the recognition of these territories as geoparks by the Unesco. Finally, other geoparks of the national territory can sometimes be presented briefly in these spaces. The objective here is to make the public aware of this new form of heritagization. A large number of visitors discovering a geopark (but also sometimes people living in a geopark)

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<sup>7</sup> Available in: <https://geofood.no/geofood-science/igcp-programme/presentation-of-the-project/>. Consulted in: 15 Dec. 2021.

are still unaware of what a geopark is, a fact that should constitute the basis for visitor studies it would be important to carry out<sup>8</sup>.

Following this introduction, we often find in these interpretation centers an explanation of the geodiversity present in the geopark territory (which justifies the fact that it is recognized as such). The interpretation center can insist here on the fact that it is an important place to understand the birth of mountain chains, the meeting of tectonic plates, a particularly important seismic activity etc. in a rather didactic way, similar to the information panels that we have commented earlier. Certain artefacts can sometimes be exhibited here to illustrate these ideas (such as fossils, minerals, paleontological traces etc.), often favoring those with the greatest visual impact (the most beautiful, the most impressive, and, ultimately, those that can provoke the « Wow Effect »). Along with these scientific explanations, these spaces can also present other approaches to the memory of the Earth, whether through an aesthetic vision of geoheritage, or describing the particular use that can be made out of rocks and sediments extracted from these territories. Their challenges due to this specific geology can also be the subject of some panels, showcases or devices, aimed at showing the fragility of these natural spaces, but also the impacts that must be taken into account in their development policies (seismic, avalanche, flood risks,...) as it can be seen, for example, in the exhibition "Catastrophe! Natural hazards in the Chablais" (*Catastrophe! Les risques naturels dans le Chablais*) at the J. Hallemans Museum of Prehistory and Geology in Sciez-sur-Léman (*Musée de préhistoire et géologie J. Hallemans*), located in the Chablais Geopark in the French Alps. Finally, in this same room, or in other spaces of these institutions, there is often a presentation of the other types of local heritage whether they are natural, cultural, intangible, etc. We can find here artefacts, audiovisual projections, testimonies, and even contemporary artistic collections which aim to bear witness to the ways in which the history of the Earth in these geoparks have influenced nature, its landscapes and the culture of its inhabitants, as it can be seen in the Digne-les-Bains Promenade Museum (*Musée promenade de Digne-les-bains*), which exhibits contemporary works of art inspired by the geological specificities of the Haute-Provence Geopark in France.

In addition to these permanent exhibition rooms, it should be noted that these interpretation centers may also have rooms for setting up temporary exhibitions (although these remain quite rare). Here they can insist on certain aspects that are not

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<sup>8</sup> Available in: <http://geopark.mnhn.fr/fr/geoparks-geoparcs/candidature/connaitre-publics-geoparcs>. Consulted in 15 Dec. 2021.

present, or insufficiently in their permanent spaces, whether they are the specificities of the territory or their impacts on its population and its culture. Let us note here that these temporary exhibitions can sometimes be hosted in other cultural spaces of the territory, in order to decentralize the offer throughout the geopark, and even sometimes directly in the public space, in exterior, aiming to make visitors and inhabitants aware of the geological peculiarities of the territory. This is for example the case of the Origins Geopark, where a long-term exhibition has been created around the church of Tresp presenting large scale pictures of the most impressive landscapes of the geopark.

Finally, some of the most ambitious interpretation centers may also have an educational space to welcome school classes in their discovery of the geopark, but also a conference space to organize presentations, seminars, etc. or other outreach activities.

### **3. The presentations of geoheritage in museums located outside geoparks**

Apart from these geoparks interpretation centers, a large part of geoheritage is preserved *ex situ*, mainly (but not exclusively) in geology galleries belonging to natural history museums. In Europe, these institutions preserve several million of objects that illustrate geological, geomorphological and pedological phenomena as well as the natural processes that form and modify them. The aim of these museums has in fact been, for nearly two centuries, to conserve materials allowing the study of these phenomena and the advancement of science.

By observing the exhibitions of these museums in 2022, it appears that they are mainly based on the presentation of chemical, biological and physical mechanisms to which the collections bear witness, according to a "museology of ideas" logic, based on the exhibition of scientific knowledge through objects (DAVALLON, 1992). Often implemented in the 1970s (or even before), these little didactic approaches struggle to reach a public unfamiliar with geology, this "unloved discipline" (GOHAU, 2001), even if a certain number of these museums, which maintain a particular charm, can become "museums of museums" because of their museography and museology that have not changed much since their creation. This is for example the case of the Mines ParisTech Mineralogy Museum (*Musée de minéralogie Mines ParisTech*), one of the oldest university geology museum inaugurated in 1794, which has long served for the training of engineers from the *Ecole nationale supérieure des mines de Paris* of which it still depends today.

These presentations thus contrast sharply with the exhibitions of other types of scientific collections, sometimes kept in the same natural history museums, which have been the subject of profound renovations since the 1980s in an attempt to break with a vision of Science Museums as spaces of sacralization of knowledge, placing the visitors at the heart of the institution (EIDELMAN AND VAN PRAËT, 2000). This is particularly the case for biotic collections which have been presented based on new themes of societal interest, such as the environment (DAVALLON, SCHIELE AND GRANDMONT, 1992) or sustainable development (HEBDA, 2007; CHAUMIER AND PORCEDDA, 2011). The ethnographic collections of these institutions were also profoundly redesigned at the same time under the influence of postcolonial museology and multicultural reflection (VAN GEERT, 2020a). At the National Museum of Natural History in Paris, this is the case of the Man Museum (*Musée de l'Homme*) whose reopening in 2015 insists on its will to embody a “citizen museum”, open to the contemporary issues of the world.

Various reasons, related to museums, their organization and their teams can explain this situation. We will not go into details here, but one might think that there is a certain structural blockage within geological galleries whose staff hasn't traditionally been very interested in scientific divulgation, although this later can be very present in the other galleries of the museums of natural history they are part of. The hypothesis here could be that scientific divulgation is less present among geologists than their colleagues. This could explain the reason why a certain number of geological exhibitions have remained anchored in a resolutely "scientific" approach to the collections, largely outdated if compared with the visitors interests and the way they now visit museums. We can nevertheless bet here that the new generation of geologists, more concerned with scientific divulgation, will take over the museum in a near future and develop new approaches to collections. In fact, certain geological institutions have already attempted to revise their exhibitions in the last ten years, by developing new presentations of their collections based on their audience. It is possible to identify here at least three main approaches.

The first one consists of an aesthetic presentation of the collections, and in particular of the minerals. This presentation is open to the wider public, not based exclusively on scientific content, but rather on an aesthetic appreciation of the shapes and colors of the collections. The emblematic objects are then presented as works of art, sometimes magnified by a scenography, which brings out their contours, materials, or even their brilliance. The concepts of « treasures », « wonders » or even

« masterpieces » of the Earth often constitute the title of these exhibitions, as is the case of the National Museum of Natural History in Paris whose permanent exhibition on minerals have been reopened in 2014 under the name « Treasures of the Earth » (*Trésors de la Terre*). Beyond this visual aspect, let us note that this aesthetic enhancement of the objects often constitutes the starting point for scientific divulgation, which attempt to explain the reasons for these shapes and colors from a presentation of geological, chemical and physical phenomena.

The second approach consists of a societal approach, trying to establish links between the objects and the interests of contemporary society, under the influence of what has been defined in France as *musées de société* which has been developing in this country since the 1990s (DROUGUET, 2015). This is the case, for example, with meteorites, and more broadly with cosmology, whose representations are numerous in popular and media culture, and which will serve as a starting point for the exhibition of these collections. Museums can also present them through the prism of natural resources. The presence of these materials on a territory, their influence on the appearance of its landscapes and its constructions or their methods of extraction can thus be presented, but also their cultural uses through for example the creation of jewelry. Certain institutions, such as the Africamuseum in Tervuren (Belgium), which reopened in 2018 after a five year renovation process, also present their collections based on contemporary issues, such as mining extraction and its effects, especially in the Democratic Republic of the Congo, a former Belgian colony from which many collections of the museum come from. It is also the case of the Valentí Masachs Geological Museum commented previously, where the last room entitled "Minerals and the people" is articulated around questions such as "Is a miner child a child?" or "Minerals at the cost of blood". Divulgation around sustainability issues is thus underlying this perspective, by attempting to promote, within the walls of the museum, a social and political debate on the rational exploitation and on the good management of these natural resources to preserve the environment and ensure the sustainable development of societies.

Finally, the third approach is based on a heritage perspective, presenting the geological collections as scientific heritage, as raised by De Wever (DE WEVER et al., 2018: 14). This aspect of the collections lies in particular in the possibilities they offer to illustrate the consolidation of science. The objects are then exhibited as illustrations of advances in geosciences, of the ways they developed and transformed, or of the interests of researchers at certain times. In other cases, these collections can also be

presented as the local heritage of an area, in particular through their exhibition in identity museums, a very large number of which were created in France during the 1980s. In these spaces with often very heterogeneous collections, museography is in fact based on the enhancement of what are presented as the “treasures” of the community, thereby justifying that the latter makes a financial commitment for its conservation through spaces often created for the occasion. In this case, the geological objects are exposed, not as scientific specimens, but rather in connection with a territory from which they come from, honoring the scholar or the local amateur who collected and then bequeathed them to the museum.

Within these new presentations of geological collections, the term geoheritage is nevertheless absent, unlike geoparks interpretation centers where this term seems more accepted, or at least more visible in the exhibition devices. A possible explanation could be that the idea of perceiving the geological collections of museums located outside geoparks as a part of geoheritage is still very recent, especially when these museums are often heirs to a very long tradition of scientific presentation of their collections. As indicated above, it was in fact only in 1997 that the geological collections were recognized, in France, as being part of geoheritage. Starting from the postulate that the permanent exhibitions of large museums are only renewed every twenty years, we can say that this situation will probably change over the next years, and that the idea of geoheritage will be soon assumed by museums. Moreover, even if this concept is explicitly absent from museum renovations, the meanings it covers is perceptible in the terms used by these institutions when referring to the memory of the Earth, as recognized in 1991 after the Digne-les-Bains Symposium. Concepts such as "Treasures of the Earth", used for the new permanent exhibition at the National Museum of Natural History in Paris is in this sense quite eloquent. These exhibitions, centered on the public, would then aim to make this memory of the Earth (that is geoheritage) recognized by their visitors, through an approach that is both aesthetic and societal. We could therefore say that we are today in a phase of transition towards this legitimization of geoheritage which can only happen over the next few years, as it has been the case for many other heritages, formerly little known, and today recognized by the general public.

#### **4. Comparison and concluding remarks**

If we compare these three renovation trends in the presentation of geological collections with those of the museums and interpretations centers located within

geoparks, it appears that the term geoheritage is perceived differently. In these first museums, it refers to the memory of the Earth in a strict sense, and most particularly to geological and mineral collections while in the second type of museums, the geoheritage approach is much broader, encompassing all other types of heritage that illustrate the formation of a territory, its landscape aspect, its nature and the culture of its population.

As such, and even though we can see a common desire for interdisciplinarity in both types of institutions in going beyond the simple geological explanation of collections or territories, by integrating aesthetic, sociological, ethnographic and societal points of view (in particular around sustainable development), the reasons for doing so are different, and appear to be quite distant from the emergence and consolidation of the concept of geoheritage. If in the interpretation centers, this interdisciplinarity is related to a holistic approach to geoheritage as it is conceived in geoparks, this will be rather linked, in museums located outside geoparks, to a desire to better reach their public by presenting their collections in a more transversal way. These geological collections thus remain the watchword of these institutions, even if their presentation methods are now multiple. Resulting often of a long tradition spanning nearly two centuries, these museums are still very largely compartmentalized and organized on the basis of scientific disciplines, unlike the interpretation centers, much more recent, whose primary aim is to provide information on a territory, implying a multiple and interdisciplinary approach. As such, while the concept of geoheritage is only just beginning to emerge within geological museums, the situation is much more different if we look at other departments of natural history museums. This is particularly the case of paleontological departments, which have developed specific strategies to reach their audiences, especially the youngest, thanks to the “Wow Effect” often caused by the exhibition of animal skeletons, and especially dinosaurs. Far from their interests and their strategies for addressing audiences, but also undoubtedly perceived as too close to geology, the concept of geoheritage is completely absent from these museums, unlike the palaeontology institutions located in geoparks, currently included under the concept of geoheritage, as we have seen earlier in this text. This observation is even more obvious if we look at other museums located outside geoparks, exhibiting archaeological or ethnographic collections, whose issues have nothing to do with geoheritage, a term absolutely absent from their exhibitions and activities.

On the basis of these few reflections, it therefore appears that there are two parallel realities about geoheritage, both in the conception of this term and in its use in the exhibition spaces of museums and interpretation centers. And these two realities

meet little, if at all. Even if some common points exist, like their interdisciplinary perspective, these are rather based on the specific circumstances of these institutions, linked to museological or strategic issues. Even so, we can bet that these two reflections on geoheritage will gradually meet over the next few years, with the affirmation of this new type of heritage, still very recent, and the public awareness of its existence and specificities. It should be remembered that certain types of heritage, now widely recognized by the public, such as Intangible Cultural Heritage, were until recently largely unknown. As geoparks are starting to gain in recognition and visibility, being more and more visited, the public will undoubtedly want to find their interdisciplinary perspective around geoheritage in museums located outside geoparks, whose renovation approaches illustrate a new interest in their audiences. Museums and geological collections are probable those where this rapprochement seems most likely to happen in the medium term. However, it remains to be seen how the other institutions conserving geoheritage will reappropriate this notion, and will be able to integrate it into their exhibitions and their future renovation strategies.

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