

The new Natural Sciences Museum of Granollers: a success story

BELÉN FERNÁNDEZ-VILLACAÑAS and ÈLIA MONTAGUD.

1. PROJECT BACKGROUND

1.1. The initial steps

To find the origins of the Natural Sciences Museum of Granollers, we need to go back to the spring of 1981, when a group of students from Granollers with an interest in nature and archaeology embarked on a series of activities under the name of the Documentation Centre of the Cultural Association. Some of these activities included a course entitled *Fauna del Vallès* (The Fauna of Vallès) given by a young Martí Boada – little known at that time – the collection of books and articles to build up the most exhaustive possible bibliography on the natural environment of the county of Vallès, and regular field trips for research purposes. As a result, it very quickly became evident that the group's activities were more in the sphere of museology than amateur naturalism, and for this reason they made contact with the local authorities to find out whether the municipal museum would be able to provide a home for the team's interests. The proposal was supported by the city council's Councillor for Culture, Concepció Navarrete, as well as by a member of the museum's Board of Trustees, Montserrat Lorente. In September 1981 the governing board of the museum met with this incipient natural science working group. The answer took one year and on 23 September 1982 it proposed that Antoni Jonch i Cuspinera, who had recently retired from his position as director of Barcelona Zoo, should come on board as the head of this team to establish the new department of natural sciences of the Granollers Museum. Thus the happy coincidence of Antoni Jonch's return to

Granollers and the existence of a group of natural science enthusiasts enabled the department to be set up that same November 1982.

1.2. The Natural Science Department of the Museum of Granollers

The activities of the Natural Science Department of the Museum of Granollers thus started in November 1982 with some very clear objectives: to conduct in-depth research on the county's nature and the environmental impact of human activities. Just one year later, on 8 October 1983, the museum opened an exhibition entitled *El medi natural del Vallès* (The Natural Environment of Vallès), the ultimate introduction to this new section. This would categorically change, for ever more, the perception of much of the population of Granollers and their political representatives with regard to the museum's functions. Having initially been viewed as something of a monolithic institution that catered to a specialist minority (not necessarily a fair perception, but nevertheless one held by many people), the exhibition attracted almost 22,000 people to the museum in two months, as well as some 6,000 schoolchildren from the city's various primary and secondary schools, surpassing all forecasts and shattering the former trend of low visitor numbers. Without wishing to overstate the importance of the general public in cultural policymaking, and far less policies concerning museums, we should remember that in the early 1980s, natural science exhibitions were not remotely as popular and mainstream as they are today. That first exhibition was followed by others along the same lines, such as: *Mostra de Bolets* (Wild

Mushrooms), with no less than three exhibitions held at the headquarters of the Granollers Museum in 1984, 1985 and 1986; *La Conca del Besòs* (The Besòs River Basin, in 1985), an exhibition advocated by the then-Manager for the Protection of the Besòs (a supra-municipal body that shortly afterwards would become the Consortium for the Protection of the Besòs River Basin) which, like the previous exhibitions, were designed, prepared and set up by the Department of Science, amongst others.

All these exhibitions and associated activities (documentation, sample and data collection campaigns, conferences, etc.) had already clearly demonstrated the natural science department's vocation to target what it knew should be the three cornerstones of the Museum: research, conservation and dissemination. Although its field trips did not result in the gathering of huge quantities of material, the Museum's collections grew little by little. It is worth mentioning that when it came to the science collections they were practically starting from scratch, with the exception of a few damaged pieces from the former natural science section, which had operated between 1945 and 1958 under the auspices of Antoni Jonch himself.

With regard to dissemination, right from the outset the Science Department put a tremendous amount of effort into organizing tours and workshops for students. These were also the activities that would achieve the most recognition. It is worth noting that the exhibition *El Medi natural del Vallès* (The Natural Environment of Vallès) was visited by 5,616 boys and girls; the Wild Mushrooms exhibition attracted 652, 271 and 592 students respectively each year it was held, and the exhibition on the Besòs River Basin was visited by 562 schoolchildren. This intensive activity highlighted the shortfalls that the modern building of the Granollers Museum had, and still has, as a facility for hosting school groups.

Finally, when it came to research, which up to that point had been very low key, the Museum focused on researching its most immediate area:

interpreting geology in order to reconstruct the geological history of the region and catalogue its biodiversity, as far as the resources of that pioneering team would allow them.

1.3. The La Tela building

In 1985, the city council appointed Antoni Jonch as director of the Granollers Museum, who, up to that point, had been the head of the Science Department. This heralded a new era, one of whose main objectives was to find a venue that would be exclusively dedicated to natural sciences. Once again, a set of favourable circumstances managed to bring to fruition what had previously been just a dream. The city council's interest in finding a definitive use for the Pius Anfres house, popularly known as the La Tela building, was decisive. This would be the natural science wing of the Museum, which went on to submit a project that, in the council's eyes, offered the most reliable and attractive proposal for the future of the city.

The Pius Anfres house – the La Tela building – is a Modernist mansion that was built in 1912 to a design by architect J. Batlle Anfres. It belonged to the owners of the textile factory that used to stand behind the garden, the reason why it was given the name La Tela (fabric or textile). With a square layout on three levels: ground floor, first floor and attic, the house is topped by a tower that makes it stand out in the monotonous urban landscape of Granollers. The whole building is a representation of the different architectural movements of the last 100 years. The house is listed under the special plan for protecting the architectural and archaeological heritage of Granollers, with Type B, Level II classification, and has been declared a Cultural Asset of Local Interest. It stands on the main thoroughfare that crosses the city and dates from the first expansion of the city in the late 19th century.

The adjacent factory specialized in supplying textiles to the army and started manufacturing parachutes in 1934; “Sampere de Paracaídas” was the original trading name of the company, whose

activities would continue until it was dismantled and transferred in 1999 under the name of CIMSA Ingeniería de Sistemas.

Once its new purpose in life had been decided upon, the La Tela building was refurbished under the direction of architect Josep Maria Botey in 1986. With the transfer to the Pius Anfrès house (covering a built area of 626 m²), the natural science department gained more space apart from occupying a patrician building, although it very quickly became evident that there were quite a lot of disadvantages involved in using a historic building which had never been intended to house a museum. The new Natural Science Museum of Granollers had the bright idea of incorporating the garden to form a part of the whole museum, becoming an active scenario and protagonist for a small collection of indigenous plant communities along with some of the most common rocks and a few living animals (the zoological section was closed in 1998). This provided additional exhibition space of 1,180 m², although previously the garden had been larger, before the block of apartments which is almost adjacent to the north façade of the house. The layout of the plant species in the garden came about in an attempt to reproduce, with obvious limitations, communities of native plants: holm oaks, pines, scrub and riverside woodlands. The garden as you see it today is the result of a process that started in 1987 with the remodelling of the whole property and was based on the pre-existing garden. Like all living things, the La Tela garden has changed and will continue to change over the years. The species you see here will not always be the same. And even those that do remain over the course of the years are transformed according to the rhythm of the seasons.

On 31 December 1986 the draft of the museum project was completed, having been drawn up by Eugeni Argemí, Èlia Montagud and Toni Arrizabala with the collaboration of the whole science department: fifteen people in all under the leadership of Antoni Jonch. Some of the key points of the project were as follows:

- A multipurpose space that would allow a series of activities and exhibitions to be held throughout the year, always on the theme of natural history.
- A research space and document archive on the county's natural environment.
- A space designed for the optimum maintenance and preservation of the natural science collections.
- A space for disseminating information on nature and the environmental problems caused by human activities.
- A space for working with school and student groups from the city and the county.

Once the renovation work was completed, which did not essentially affect the outer appearance of the listed building, the new Museum of Natural Sciences was opened in 1987. The ground floor houses the temporary exhibitions, in the right wing, and an assembly room in the left wing. The first floor is taken up by the permanent exhibition, *El medi i l'home al Vallès* (Man and the Environment in Vallès), and finally the second floor houses a natural science library which includes the Documentation Centre of the Natural Park of Montseny (science section), the offices and workplaces of the Museum's staff, in the right wing, and a laboratory divided into two sections, one for visiting school groups and another for the Museum's internal use.

It is worth remembering that as from 1987 the Granollers Meteorological Station was incorporated into the Museum of Natural Sciences; an organization which also looks after an archive that has gradually been digitalized. In 1998 it was transferred to its current location, the old Vallès School. The data it gathers daily are published in the local press and on its website. It has a record of reliable data going back to 1951, thus providing 64 years of uninterrupted information, which is extremely valuable to climate students.

The execution of the museum project was based on the work of the Science Department itself with the help of an interior designer. This involved

setting up the permanent exhibition space, featuring the exhibition *El medi i l'home al Vallès* (Man and the Environment in Vallès), and in the temporary exhibition space, *Butterflies of the World: the Anfruns - Gómez Bustillo Collection*. This exhibition was an important landmark as it led to the donation of a very important collection of butterflies which would be the first in a series of donations, and also sparked off one of the museum's main lines of research: the study of the ecology of butterflies.

During its first year, the new Museum of Natural Sciences planned eight temporary exhibitions on different subjects (zoology, botany, mycology, etc.), six of which were produced in-house. However, for some travelling exhibitions the newly-restored building proved to be too small, so some of them had to be set up in the exhibition rooms of the Museum of Granollers, this being the case of *Catalunya fa un milió d'anys* (Catalonia One Million Years Ago), which was supported by an educational workshop, something that became a regular feature. From this excellent start, and as a complement to the scheduled exhibitions, a programme of educational activities was also offered for schools, being disseminated and later managed by the Cultural Association of Granollers which, at the same time, had embarked on an interesting range of cultural activities for schools. The first year achieved attendance figures of 11,490 students, 547 teachers and 12,262 general visitors.

The educational activities of the Museum focus mainly on two areas: those associated with the exhibitions, particularly the temporary ones, and those organized by the Museum's laboratory. Moreover, the Natural Sciences Museum of Granollers has, since its outset, formed part of the Council of Environmental Education Centres supported by the Catalan Society of Environmental Education.

Rather than make an exhaustive list of the many activities that have been organized, this article will focus mainly on reviewing the activities aimed at students and the general public.

Between 1987 and 2013, the number of temporary exhibitions organized was quite considerable, especially bearing in mind that most of them were in-house productions. These exhibitions were also supported by a large number of conferences, presentations and debates. Of the temporary exhibitions organized in-house, we should highlight the travelling exhibitions – a total of seven – especially the joint production with the Corridor Nature School, *Fets per Viure* (Created to Live), about how animals and plants adapt; and the *Núvols* (Clouds) exhibition. The Natural Sciences Museum of Granollers has even produced exhibitions that have not yet been shown at its own headquarters, such as *Triàsic* (Triassic). *El laberintodont del Montseny* (The Montseny Labyrinthodonia), produced jointly with the Miquel Crusafont Institute of Palaeontology of Sabadell, was also shown at the Granollers Museum.

The scope of reach of all these travelling exhibitions is also very noteworthy.

With regard to activities for schools, the main cornerstone on which the whole project has been structured, the results achieved over these last 16 years have been significant, especially considering the limited financial and human resources of such a small team.

Another line of action has been publications, which include catalogues associated with the exhibitions, monographic publications and study papers, such as *Treballs* on the Museum's collections and scientific papers for the *Lauro* journal of the Museum of Granollers. Some of the most noteworthy catalogues include *Científics i naturalistes al Montseny* (Montseny Scientists and Naturalists), *Núvols* (Clouds) and *Triàsic* (Triassic), and the Museum has also published a guidebook entitled *Guia del jardí* (The Garden Guide). Collaborations with well-known designers such as Miquel Llach, Amador Garrell and Vicenç Viaplana in the Museum's publications have twice been distinguished with the City of Barcelona Design Award.

Around 2006, the Museum also managed the Can Cabanyes Environmental Education Centre at the Can Cabanyes Nature Reserve, a dedicated natural area of 8 ha in the southern part of the municipality of Granollers between the road to Montmeló and the right-hand side of the River Congost. This land were granted as a green zone by the Can Gordi-Can Català industrial estate and its environmental restoration was instigated by the Granollers City Council as part of a project financed by the European Union Cohesion Fund to close up the former landfill site at Palou and recover the riverside environment of the River Congost. The area is listed in the Granollers Special Plan as an area of municipal interest (ENIM) and forms part of the Natura 2000 Network within the River Congost riverside area. The restoration of the riverside area and the creation of an artificial marshland have increased the diversity of habitats and the area has become a refuge for all kinds of birds. Right in the middle, the Can Cabanyes Environmental Education Centre, managed by the Natural Sciences Museum of Granollers, is equipped with a field laboratory which is available on request to student groups.

All these years of painstaking work have managed to bring together the different municipal government teams and it should be said here that they never doubted in providing their full support for this institution. This confidence took shape in the construction of a new building and the consolidation of a team of people who are driving forward new projects, with the handicap of a tiny municipal budget which is not growing at the hoped-for rate.

2. THE NEW BUILDING OF THE NATURAL SCIENCES MUSEUM OF GRANOLLERS: A HUGE QUALITATIVE STEP FORWARD

In 2000, work started on a major transformation of the immediate surroundings of the Museum with the transfer of CIMSA. The demolition of the factory, the opening up of Palaudàries Street and the urban development of part of the

plots intended for housing gave the Museum the opportunity to grow in the area set aside for facilities.

The wait was a long one, but finally, in February 2010, work started on building the new Museum. The architectural practice Sanàbria was entrusted with the project and under the direction of Ramon Sanàbria and Lidia Planas the work was carried out between 2010 and 2012. With regard to funding, the total budget of 3,174,932.17 € (just for the building work) was divided, with two-thirds being met by Granollers City Council and the other third being covered by FEDER funds and the Ministry of Public Administration.

The rectangular building occupies the space between the Museum's garden and the new extension of Palaudàries Street, with its main façade facing east towards the Antoni Jonch i Cuspinera Gardens. It is a building of clean lines, full of light, with three levels which are accessed via a spacious reception area. The ground floor houses the reception (166 m²) which provides access to the other floors and the garden; the temporary exhibition room (182 m²) and the games and reading room for children (36 m²). The first floor houses the permanent exhibitions; at the moment, the main room (183 m²) is also being used for temporary exhibitions, pending the approval of an extraordinary budget for the new permanent exhibition.

In a smaller annex (54 m²) the exhibition *Descobreix els ratpenats* (Discovering Bats) now forms part of what will become the permanent collection of the Museum, explaining the lines of work and the research carried out by the Museum. This level also houses the planetarium (61 m²), with a diameter of 6.5 metres, where astronomy-related activities and some screenings have already started.

Beneath the ground floor, the Museum's basement is illuminated by an interior courtyard and provides access to the assembly room with a capacity of 110 people. The rest of this level is used for various storerooms of the Museum's collections (a storeroom for collections stored in liquids, of

22 m²; a general storeroom for collections, of 99 m², and laboratory storeroom for preparing collections, of 76 m²), the material reception workshop (15 m²) and the building's machine rooms. All these internal areas can be visited on the open day sessions that the Museum holds on the last Sunday of every month.

This major building work was taken advantage of to carry out some essential renovations to the historic La Tela building. Between 2009 and 2010 the roof was replaced and an elevator was installed inside the building which has helped to overcome the architectural barrier of the staircase; an access ramp was also installed at the main entrance. In 2013 the original enclosure of the garden was restored, incorporating a new, wider and more convenient public entrance in the main façade giving on to Francesc Macià Street.

All in all, the new building has gone from a built surface area of 626 m² corresponding to the Pius Anfrès house to an area of 2,792 m² including the two buildings.

3. RESEARCH, THE KEYSTONE

Since the outset, research has been the keystone of the Natural Sciences Museum of Granollers. Over the years, specialized research teams have become established in the fields of small mammals, bats, amphibians and butterflies. The Museum's team coordinates various research projects, including the Catalan Butterfly Monitoring Scheme (CBMS) as well as the Andorran Butterfly Monitoring Scheme, the Spanish Small Mammal Monitoring Scheme and collaborations with the Conservation Plan for the Montseny Brook Newt.

The research areas in which the first natural science department focused its attention were firstly to denounce the polluted state of the River Besòs, and the River Congost in particular, and secondly the field of zoology, notably small mammals. The first paper written by the Department of Natural Sciences of the Granollers Museum was published

in *Miscel·lània Zoològica* in 1984 with a note on the bats of the Vallès Oriental, with previously unpublished contributions in Spanish literature on fauna. One year later the Department produced the book entitled *Introducció a la biologia i zoogeografia dels petits mamífers (Insectívors i Rosegadors) del Montseny (Catalunya)* (Introduction to the biology and zoogeography of small mammals [insectivores and rodents] in Montseny [Catalonia]), published by the Catalan government, with the Museum being the recipient of the material involved in this research, thus initiating one of its benchmark collections.

In 1987, the first big turning point in the development of the Museum of Natural Sciences came about with the opening of its own headquarters, permitting an incipient professionalization which gave a sense of continuity to the initial project and allowing new initiatives to be brought on board.

The different lines of research and dissemination that the Museum instigated and has maintained from the outset through studies and exhibitions have been supported by a series of publications. The *Treballs* collection of the Natural Sciences Museum of Granollers is one example of this; the first volume presents the results of research on the state of the water in the Besòs river basin in 1985, having been published in 1991, which had political repercussions as a result of the serious denunciation of the severe pollution and degradation of the river. Subsequently the Barcelona Provincial Council commissioned regular systematic surveys of the state of rivers in the province. In 1993 the *Estudi de la climatologia de Granollers* (Study of the Climatology of Granollers) was published, reflecting 40 years of data from the city's Meteorological Station. This year issue number six of *Treballs* is being prepared with a monograph by Josep Ribas, *Els ocells del Montseny* (Birds of Montseny). *Lauro*, the Granollers Museum's journal, will also provide a platform for the results of various natural science projects in the county.

As a result of the figures on the protection of the natural environment and the need for greater

knowledge of its biodiversity, the Museum has embarked on various studies in the fields in which it specialises: small vertebrates, butterflies, etc., some of which have become long-term monitoring schemes.

3. 1. The CBMS

One of the most successful examples is the project to monitor the butterflies of Catalonia – the Catalan Butterfly Monitoring Scheme (CBMS) – which started in 1994 with the support of the Catalan government along similar lines to the British Butterfly Monitoring Scheme (BMS). Little by little, new monitoring stations have been incorporated to the point where there are now well over one hundred in action at one time or another. In 2002, the Museum contracted Dr Constantí Stefanescu to take charge of the technical and scientific coordination of the project, which he has led since its outset. This nationwide project relies on a team of volunteers to gather high quality data on biodiversity which allows a very accurate analysis of the changing trends in butterfly populations and enables us to determine the factors that affect these changes, whether environmental or climate-related. Furthermore, the CBMS allows studies to be made with very precise information on the species and their phenology, as well as generating other projects such as modelling the distribution of butterflies across the whole of Catalonia, providing information for butterfly conservation biology, learning about biological aspects such as migrations, the relationship with food plants and the control exerted by parasites over populations of other insects. Since 2001, the CBMS has been publishing its own newsletter, *Cynthia*, which is available on the Museum's website, where every year it posts a summary of the scheme's results as well as useful information for volunteers. Commissioned by the Snow and Mountain Research Centre of Andorra (CENMA), the Museum also looks after the Andorran butterfly monitoring network – BMSAnd – adding value to the European network of one of the most important biodiversity monitoring projects at this time.

3.2. The Bat Department of the Museum

While in 1984 the Museum published its first scientific papers on bats, it was not until 2007 that the Bat Department was set up, headed by Carles Flaquer. This research team gave a new impetus not only to knowledge of this fauna group in Catalonia but also to the Museum itself, which is now one of the leading centres in Spain in this specialist area. The production of articles for international journals makes up the bulk of the doctoral thesis that Carles Flaquer presented in 2009 at the UAB under the heading *A multi-method approach to the study of bat distribution and ecology in Catalonia*. The Bat Department has published the journal *Barbastella* since 2010 on behalf of the Spanish Society for the Protection and Study of Bats (SECEMU).

In 2012, coinciding with the inauguration of the Museum's new building, the International Symposium on the Importance of Bats as Bioindicators was organized in Granollers with the participation of some of the world's top bat experts.

3.3. Small mammals

The Natural Sciences Museum of Granollers has conducted research in this field from the outset as a result of the personal contributions of curator Toni Arrizabalaga. As in the case of bats, this research is very closely associated with protected natural spaces, as well as numerous collaborations with university departments both in Spain and abroad. The incorporation of Dr Ignasi Torre, who did his doctoral thesis at the Museum, has considerably increased the breadth of knowledge in this field. Since 2007 the Museum has been coordinating the Small Mammal Monitoring Scheme throughout Spain, amongst other projects. It has also published numerous works in conjunction with experts in parasitology and other diseases that affect these animals, and collaborates regularly with Dr Alexis Ribas, an expert in this field.

One of the centre's most recent lines of research has been a study of the grey dormouse, particularly the

populations of Montseny and Montnegre, headed by zoologist Lidia Freixas and based on the distribution and monitoring of specially designed wooden nesting boxes, with the aim of ascertaining the state of populations of this species on which there is very little information. In just a few months the boxes were occupied by females who went on to reproduce in them, allowing us to monitor the biological and demographic parameters of this population, which is the southernmost one on the Iberian Peninsula.

3.4. Amphibians and reptiles

The publication of an article containing a description of the Montseny brook newt as a new species for science was one of the most media-worthy events of the Museum. Fèlix Amat, along with Salvador Carranza from the University of Barcelona, presented the results of a meticulous study on one of the most important vertebrates in Catalonia. The discovery of this species sparked off the need to manage its populations as a matter of urgency in Catalonia in general and Montseny in particular, as it represents the conservation of a species under severe threat of extinction. The in-captivity breeding programmes have involved a variety of institutions: the Catalan government, provincial councils, universities, the Barcelona Zoo and the Museum itself.

The amphibians and reptiles team is also working on other lines of research, especially with regard to Pyrenean herpetology.

3.5. Local research

The Museum has not forgotten the importance of providing knowledge on our natural assets that are closer to home. For many years it has been working on and advancing knowledge of the municipality's fauna and flora, especially by monitoring the biodiversity of the River Congost. The recognition of the riverside area of the Congost within the Natura 2000 Network was partly due to the Museum's conservationist initiatives and level of knowledge of the natural wealth of this area.

With the collaboration of various experts in different disciplines, such as Josep Ribas on ornithology, Andreu Salvat on botany and vegetation, and Dolors Vinyoles on ichthyofauna, the first of whom works at the Museum and the others for other institutions, the Museum has in the last few years undertaken exhaustive monitoring of birds, plants and fish, as well as amphibians, reptiles, mammals and bats by the Museum's own in-house teams.

4. EDUCATION AND DISSEMINATION: A PERMANENT QUEST TO CONNECT THE MUSEUM AND ITS CITY

The education and dissemination of natural sciences has been a cornerstone of the Museum since its creation. The museum project drawn up in 1986 made particular reference to educational research, guided tours, educational courses and laboratory practices for students. It might be said that education and dissemination are the DNA of the Museum.

Between 1986 and 2009 (when the Museum was closed for a year due to building work), its educational activities covered every educational level from primary school through to high school, and it can be claimed that a large proportion of schoolchildren in Granollers have, at one time or another, done some kind of activity at the Museum of Natural Sciences; proof of this is the fact that many Granollers residents, now adults, often say "I used to come here when I was young with the school."

The laboratory wing and the garden became central features of these activities: the laboratory for observing, handling and discovering, and the garden as a little piece of woodland where children could start getting first-hand knowledge of nature.

Today the laboratory wing, which also includes an exhibition space, is completely updated, having replaced the former laboratory when the Museum was renovated and enlarged, with two

laboratory classrooms on the ground floor of the old building. These were planned alongside a nineteenth-century-themed natural history study, with glass cabinets full of specimens and decorated walls, an impressive space whose atmosphere transports and inspires students and visitors, as if they were working in Darwin's own study. The Meteorological Station, the Can Cabanyes Environmental Education Centre and the hill of Puig de les Forques, offering an exceptional view over Granollers, round off the educational facilities.

The Museum's educational activities continue to cover every educational level, while the educational model has been maintained in certain aspects and changed in others. If the question is whether there is enough handling and experimentation in classrooms, the general answer has to be no, and in this respect the Museum has become a key resource not only for schools but also for a wider social milieu. Today, the Museum runs a family activity programme called 'Sunday Science' with family workshops where parents and children can experience all sorts of discoveries, knowledge and thrills together, bringing science closer to a curious public that is much more interested than one might suspect. Indeed, this kind of learning mainly takes place in social and cultural contexts away from the schoolroom.

These family workshops started in 2013 and are recommended for families with children aged six and upwards. Ever since the first one they have been very sought-after and highly rated, attracting a very varied audience. The philosophy is a simple one: direct observation and a hands-on approach. Microscopes, magnifying glasses, paintbrushes, lancets, skulls, skins, butterfly nets... all of them can be handled by the general public, who become engrossed in discovering this fascinating world. When they first come to the workshop, a lot of parents say, "our boy was given a microscope for Christmas and we want to know how to work it properly, because we can't see a thing," or, after the workshop, they go off and buy a magnifying glass or a microscope, or ask how they can grow a mini-garden on their balcony to attract butterflies...

All educational activities, whether for schoolchildren or families, are based on the same premises:

1. Presenting natural sciences in an approachable and experiential way.
2. To stimulate people's curiosity, knowledge and analytical ability by the observation, handling and use of microscopes, magnifying glasses and pieces in the collection. The pieces in the collections should be seen as objects that talk to us and transmit information and sensations, not as inanimate objects detached from their environment. These activities might include studying small mammals by examining their pellets; the history of the Earth or urban geological routes through the collections of fossils and minerals; herbivores and carnivores through the collection of skulls; and butterflies and invertebrates through the Museum's entomological collections.
3. Planning research based on actions such as wind or rain simulation in the Meteorological Station or collecting macroinvertebrates in the River Congost to study water quality.
4. Providing support for and disseminating the research work of the Museum and its collection by means of activities such as bat-spotting by night and butterfly-watching by day, as well as workshops on butterflies, rats, small mammals, etc.

Exhibitions also form part of these educational activities and have been a key element of the Museum's activities since the Science Department was founded. It is worth mentioning that the first exhibitions, both permanent and temporary, were very much 'home-made' and produced in-house with extremely limited resources, very far removed from the major productions that museums put on these days; even so, the department's commitment to educational and interactive exhibitions was already evident. The travelling nature of its exhibitions was also very important in spreading the word about the Museum: *Plantes remeieres*

(Remedial Plants), *Triàsic* (Triassic), *Fets per viure* (Created to Live), etc.

With the enlargement of the Museum there has been an increase in exhibition space. The new building has two permanent exhibition rooms which, in the future, will contain exhibitions on the Museum's lines of work, starting with the current one, *Descobreix els ratpenats* (Discovering Bats), plus a temporary exhibition room. When it comes to temporary exhibitions, though the Museum rents space to travelling exhibitions created by other organizations, the idea is to put on its own exhibitions which may be on a very tight budget but are highly effective aesthetically with eye-catching, attractive designs; *Papallones, tota una vida* (Butterflies, A Whole Life) was the exhibition that kicked off these new productions.

The Museum's resources, while not spectacular, are governed by the premise of a modern, interactive and educational museum based on explaining natural sciences by means of objects – the pieces in the collections – and processes. The exhibitions are planned to arouse emotions and connect with visitors by means of three kinds of interactivity: manually (hands-on), mentally (minds-on) and culturally (hearts-on).

There are many challenges facing the Museum, both now and in the future, which include its determination to provide support for teacher training, organizing teaching seminars, especially for secondary education, in Granollers and the county as a whole. The educational team at the Museum can offer tools and assistance in planning activities, practical work, research work, etc.; in short, designing educational programmes for classroom work on natural sciences. The exhibitions are also an educational resource that go beyond the classroom and can be taken advantage of as a complement to schoolwork, not only in terms of science but also art, mathematics, language, etc., a world apart from Wikipedia and textbooks.

The goal is to establish a mutually enriching circle embracing the Museum, schools and the city, with

the aim of becoming a point of reference in the county. We have already embarked on this journey. The Montseny Documentation Centre (natural sciences) generates educational studies and research. Collaboration with institutes includes heading research work that might be of use to the Museum's work, such as monitoring a particular butterfly or preparing fossil records to provide resources for the urban geological routes on the Museum's website. And finally, using technology to enable the general public to participate in collaborative databases, supplying information on our environment.

5. A QUARTER OF A CENTURY OF TRAILBLAZING AND LOOKING TOWARDS THE FUTURE

The story of the Museum is quite unique in both Catalonia and Spain: a small local museum whose intensive activities have tremendous territorial scope; no other institution can match it in terms of the parameters of size, staffing and budget. Its uninterrupted programme of exhibitions has been combined with cataloguing and conservation work. Research has produced more than 150 articles in non-indexed scientific journals and, between 1992 and 2014, over 100 articles in international journals (indexed, irrespective of their value).