

Report

The Museum of the Comb and Plastics Industry in Oyonnax

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Abstract:

The Museum of the Comb and Plastics Industry ('Musée du Peigne et de la Plasturgie') in Oyonnax, France is dedicated to the decorative arts and the plastics industry that mark the industrial history of the town of Oyonnax and its valley. Describing its history and development has made for a museum rich in collections connected to plastics, showing the world of fashion, and the art of hairdressing and design.

Keywords: *Oyonnax, Musée du Peigne et de la Plasturgie, Centre culturel Aragon, La Grande Vapeur, Museum of the Comb and Plastics Industry, Cultural Centre Aragon, Plastics Valley, The Big Steam, Marie-Léon Arbez-Carme, horn, ivory, tortoiseshell, Celluloid, Galalith, Auguste Bonaz, Clément Joyard, Paco Rabanne.*

1. The historical context

Today, Oyonnax is the second largest city of the Ain department in the French Jura, with 23,800 inhabitants.

For over a century, its expansion and its incredible industrial development in the sectors of comb manufacturing and then plastics, were in no way predictable with respect to the geographic and economic situation of the ancient little country town. As a result, in order to complement

agricultural activity which was of low potential and seasonal, the inhabitants of 17th century Oyonnax began to work boxwood during the winter to create small objects, including the first "nit combs".

They were sold primarily at the Abbey of Saint-Claude (in the Jura) to passing pilgrims, by hawking on farms and on markets in neighbouring regions. The manufacture of these combs was a handicraft homework, i.e. a "cottage

industry”, often performed in the kitchen, which served as a workshop for the whole family. It was with the help of simple pliers, saws, files and planes that these small objects were crafted, as can be seen in the Encyclopaedia of Diderot and d’Alembert.

Intensive gathering of boxwood in the surrounding forests led to a shortage of the raw material. Instead of wood, horn was therefore used in the manufacturing of combs and other small items. This development started at around 1820 and continued throughout the 19th century.

This handicraft sector gradually became important for the town, leading to the establishment of numerous little workshops, and small factories. Meanwhile, the inhabitants of Oyonnax accumulated increasing expertise and creativity in this domain

But the discovery of the first semi-synthetic plastic material brought a new impetus to this promising activity. On the occasion of the Universal Exhibition in Paris in 1878, a delegation of industrialists discovered a new material: *Celluloid*, on the exhibition stand of the ‘Compagnie Française du Celluloïd’. The artisans of Oyonnax promptly started manufacturing combs, made from *Celluloid*. This new production branch was further characterised by the creation of many family workshops installed as extensions to regular houses.

Early inhabitants of the valley had already been exposed to the outside world through peddling, placing them in contact with even more ideas and knowledge. In the nineteenth century, a true export trade took shape with other countries such as Switzerland, Germany, Austria, Spain, Italy, Russia, Argentina and Brazil. From that time onward, Oyonnax was regarded as the international capital of the comb.

World War I caused a widespread change in traditional and social structures, e.g. in women’s emancipation. The latter

led to the fashion phenomenon of short hairstyles for women, in particular the “bob”.

This development caused a major crisis in the comb industry and forced Oyonnax manufacturers to diversify their production to small toys, fashion accessories, costume jewellery and spectacle frames etc.

In the first third of the 20th century, semi-synthetic and synthetic plastics, with their novel technical and plastic properties, allowed an orientation towards other markets. In addition to these innovative materials, new processing techniques such as extrusion, injection moulding and rotational moulding gradually appeared. After World War II, the irresistible spread of mass production caused an exponential increase in the production and consumption of plastic objects. Moreover, there was a profound change in the operational procedures, requiring more space, new equipment and more labour. In Oyonnax, production units were transferred to new buildings on the outskirts of the city.

At present, approximately six hundred companies make up the Oyonnax plastics industry, located in an area which, at the end of the last century, began to be called ‘Plastics Valley’.

2. History of the Art and Industry Museum in Oyonnax

The historical development of the museum is here presented in six parts, describing more than half a century of expectations and patience, before the creation of a first museum in 1977.

The idea of an industrial museum: 1910-1930

It was in 1910 that the Union of Comb Manufacturers first considered the idea of a ‘museum of applied art and design’, inspired by existing German institutions (‘Gewerbemuseum’). It was conceived as a place for the collection of relevant

product samples, gathered from other production centres, which would serve as sources of new developments, design inspiration and manufacturing methods.

The communist City Council approved the project in 1922. The town had already invested in the acquisition of collections:

- The first piece “Les poseuses de similis” (“the posers of imitation decoration”) is a painting, representing a large scene on the art of hair decoration, the City of Oyonnax commissioned the painter Émile Brunet.
- The second is a collection of ca. 2400 pieces of decorative art objects such as boxes made by Marie-Léon Arbez-Carme. As an engineer, chemist and artist, over a forty-year period he created pieces in the new plastic material *Celluloid*. As a scientist and visionary, he imagined completely new technical and artistic applications than those conceived of the industry at the time.

To this material, able to replace natural ivory, tortoiseshell, horn etc., he introduced fantastic new colours and patterns, against which most objects in those days were “...reproductions, adaptations borrowed from masterpieces produced by the masters of ancient and modern art, like Boulle, Bernard Palissy, Moustier.” as he wrote in a letter addressed to the Oyonnax mayor.

In December 1927, two months before his death, Marie-Léon Arbez-Carme, donated his collection to the City of Oyonnax. He specified conditions to granting this gift, while emphasising the need to open places of technical and artistic culture in industrial areas such as the Oyonnax region, in order to promote the training of future assistant and master craftsmen. Moreover, he intended to raise the aesthetic level of objects produced in Oyonnax in the new century.

- In 1929, the municipality of Oyonnax paid a grant to the ‘École pratique de commerce et d’industrie’ (later on ‘École nationale professionnelle’, so-called ‘des matières plastiques’, now ‘Lycée d’enseignement général et technologique Paul-Painlevé’) to create a room in which the first collections might be presented. This industrial museum remained open until 1940. In that year, the collections were dispersed to different premises, and finally given back to the city in the 1970s.

The “Musée du peigne et de la plasturgie” under the sign of success: 1973-1986

In 1973, the Economic Partnership between the municipalities of Nantua and Oyonnax, decided to establish a ‘Museum of the Comb and Plastics Industry’. A commission produced a historical study, and an inventory of objects and machines used by artisans as well as industry. Collections were assembled from the local population and from comb manufacturers in order to preserve an entire segment of the industrial heritage of the city. Indeed, an association specifically dedicated to the realization of the museum was established.

Work on the museum building itself started, and in 1977, the ‘Museum of the Comb and Plastics Industry’ was opened. It displayed a part of the Arbez-Carme collection, together with combs made by Auguste Bonaz, which are among the best arts and crafts masterpieces in France (cf. figure 1).

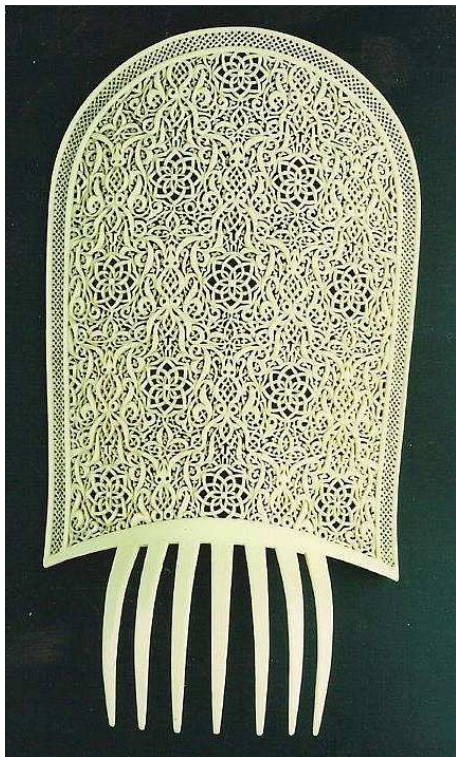
But also machines, tools, and several significant objects related to Oyonnax industry since the beginning of the century, like combs, brooches, buttons, glasses, umbrella handles, yoyos, cigarette cases, as well as many archive documents, were collected, some of which were exhibited.



a



b



c

Figure 1 a,b,c, *Celluloid* combs, Auguste Bonaz, ca.1920.

The temporary installation and the big project: 1986-2010

It soon turned out that the exhibition space available was too small. Therefore, in 1986 the collections were temporarily transferred to premises in the new 'Cultural Centre Aragon', built in the area of 'La Plaine'.

This district was built in the 1960s to respond to the strong population influx created by increasing market demand for products of the plastics industry. The museum was now housed in a true "temple of culture", where one could find two theatres, a cinema, a media centre, a conservatory of music and visual arts workshops. But in fact, the museum was located in a space composed of small rooms, designed to accommodate local associations. Even if the museum lost something of its prominence within this vast complex, it did benefit from the dynamics of the other cultural services.

In 1984, however, an intrinsic museum project was undertaken, implanting the institution in an iconic industrial building from the twentieth century. In the early 1920s, the Electrical Union, crowning an effort to strengthen its presence in Oyonnax, had envisaged constructing a building which would provide independent craftsmen the possibility of renting a workplace equipped with all the electrical power necessities for their activities.

The realisation of this 'model factory' called "*The Big Steam*" ('*La Grande Vapeur*') - in reference to a nearby factory that worked with a steam engine - was entrusted to architect Auguste Chanard (1878-1934). With this plant, built in 1905, he invented an architecture adapted to optimise work with a new plastic material: *Celluloid*, giving the building both its functionality and aesthetics.

This is a rare example of an industrial building in reinforced concrete, equipped with several innovative developments at the time, like water tanks on the roof,

sprinklers in each cabin and central heating, all of which addressed a strict concept of fire security. Fully utilized until 1950, 'The Big Steam' was bought by the City of Oyonnax in 1967. The exterior façade and roof terrace are classified as historical monument.

This constituted a major project which, because of a change of municipal administration, was halted while in full swing. A few years later, it was revived, with a new scientific and cultural project. The files were reopened by the previous council, which recruited a curator in 2010, thus demonstrating its full commitment to the project. But in the recent difficult economic context, the project was again slowed down, waiting for more favourable conditions for its implementation.

A renovation to create desire: 2011-2012

Despite the pending, definite realisation of the project in the historic and symbolic site of "The Big Steam", the municipality commissioned the renovation of the present museum in the 'Cultural Centre Aragon' in 2011, to improve the hosting of visitors and the exhibition of the museum collections. The modification of the visitor's access to the showrooms, the relocation of the reception area and the museum shop, the changes in lighting, and the construction of new display cases have all contributed to creating new, bright and colourful museum areas, to the benefit of the important, outstanding and rare collections on show.

In addition to these improvements, there is a strong wish to create a further permanent instead of temporary exhibition, highlighting the industrial history of Oyonnax and Plastics Valley. To this end, a new conceptual space will be necessary, where one could see and understand the why and wherefore of regional industrial development, providing a thoroughly representative perspective of the world of plastics.

The museum today

The Municipal Museum, since its creation in 1977, and the 'Museum of the Comb and Plastics Industry' (cf. figure 2), is controlled by the 'Board of the Museums of France'. Its main task is to preserve, curate, restore, study, develop and share its collections. From the outset, its mission was to preserve an entire segment of the traditional and industrial culture of the city of Oyonnax, both at a tangible and intangible level, and to present this in order to preserve the identity of the city and its valley. The museum hosts temporary exhibitions and organizes events to promote education, including school events designed to allow schoolchildren to discover a craft and industrial heritage, which includes a plurality of technical, scientific, artistic and ethnological approaches.

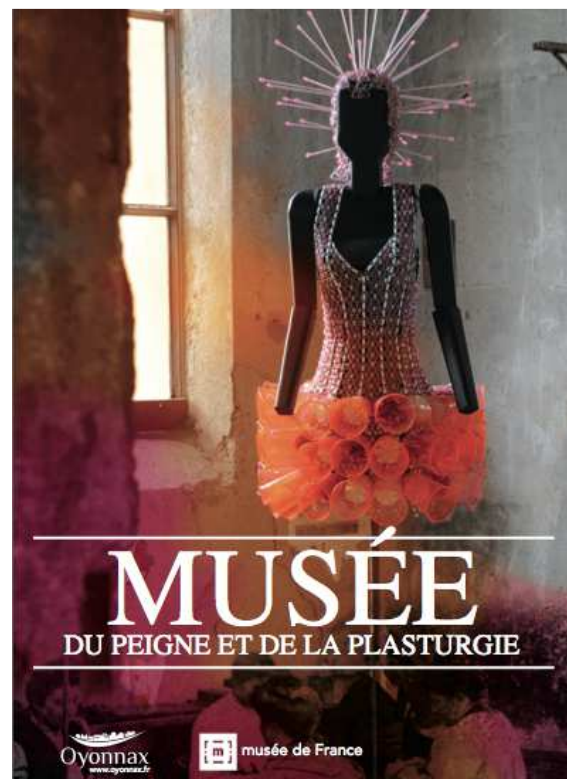


Figure 2 Poster of the 'Museum of the Comb and Plastics Industry', Oyonnax.

The museum is accessed via a large entrance with the museum shop area in which products still made in Oyonnax,

such as hairdressing ornaments, jewellery and spectacle frames, are available. In the lobby area, all-plastic designer furniture is exhibited. After a symbolic entrance, realised by a forest decor with elements inspired by hair ornaments patterns, the visitors discover the origins of Oyonnax handicraft in the first room. Original tools, boxwood and horn combs, peddler's trunks etc. illustrate a complementary activity of homework subsistence. Over the course of the 19th century, horn replaced wood, and many objects such as napkin rings, knife handles, egg cups, and other decorative items of the period are exhibited here.

The comb is both an instrument used for disentangling and smoothing the hair and an ornamental object used to keep women's hair in form. A small historical overview showcases some significant combs and chignon hairpins in boxwood, horn, ivory and tortoiseshell from the 15th to the 19th century. These are complemented by beautiful specimens in plastic materials, dating mainly from the Art Nouveau and Art Déco period, made by famous companies for luxury goods like René Lalique, Henri Vever and Gustave Sandoz. They created magnificent combs and hairpins that were considered masterpieces of their kind. Meanwhile, in Oyonnax, talented craftsmen such as Auguste Bonaz and Clément Joyard produced similarly splendid objects.

A workshop, showing the making of celluloid combs at the beginning of the 20th century and the know-how required to manufacture these objects has furthermore been reconstructed.

At that time, hair combs were widely popular and had great success around the world. Thus, a beautiful collection of combs from all continents brought together over time by Robert Bollé, industrial manager and fervent defender of the

museum, brings an additional universal dimension to this highly symbolic object.

Several display windows exhibit objects from specific materials i.e. *Celluloid*, *Galalith*, *Bakelite*, *Nylon* etc. These are objects related to fashion, to toys and to the household arts. Furthermore, other synthetic materials emerge, as well as new techniques such as injection moulding etc.

At least from the 1960s onwards, plastics have been associated with a cheap, popular, mass-produced material. It is within this dynamic lifestyle upheaval that the first plastic furniture appears, created by designers such as Charles Eames, Joe Colombo, Verner Panton, and Philippe Stark, while Formica was invading our kitchens.

Because of its many qualities and its innovative nature, plastics are also used by the greatest creators of haute couture in particular. At the heart of the museum, in a glazed patio, one finds dresses and accessories made in plastics by Paco Rabanne. In 1996, the museum received a gift of thirty two dresses and accessories from the fashion designer himself, and of Melissa shoes, which offer a completely different image of plastics in fashion (cf. figure3).

The European plastics industry is today part of a globalised world. As the world changes, industry - always innovative - takes note and is today committed to the preservation of the planet. It initiates research programs in the field of green plastics and the development of intelligent plastics.

The last room is built around two major areas of research, including the latest addition: a 3D printer creating object before the very eyes of visitors!



Figure 3 Poster of the 'Museum of the Comb and Plastics Industry', Oyonnax.

3. Presentation

Finding a meaningful, convincing concept is fundamental to the display of objects. The ideas behind the exhibition should be presented in such a way that they quickly become clear, but also awake interest. Exhibiting objects should also establish a certain proximity and recognition effect by addressing the visitor's memory. Ideally, collections would be modified each year to maintain visitor interest and to facilitate preservation.

In a museum dedicated to plastics, it seemed appropriate and logical to work with a material in keeping with this concept, respecting modern standards of preservation and allowing maintenance procedures. PMMA, (polymethyl methacrylate) was used throughout the museum for display hoods in showcases, as display racks for hair ornaments and other small items, and in text stand-up displays. These items are mostly custom-made by local companies.

The exhibition layout is of fundamental significance, because it affects intrinsically the message delivered.

The objects on display comprise both high quality and ordinary parts, and a mix of unique artefacts and serial production articles.

When the item is part of an ensemble, e.g. a workshop collection, we have chosen the concept of returning in spirit and practice. In consequence, the components are placed in their original context to facilitate the understanding of their function and use. In contrast, very special, specific objects are presented in more pronounced ways. Placed on different display racks, their aesthetic, symbolic and technical value can thus be better accentuated.

4. Conservation

The museum owns about 16,000 items, mainly distributed in external depots. An important principle is the division of

collections by material and kind of collection, into separate air-conditioned rooms for the most valuable and sensitive pieces.

We can distinguish between three groups of materials:

- Natural materials from different continents: wood, bone, ivory, (mainly combs) and vegetable fibres. They are stored in neutral cardboard conservation boxes, placed in shelves.
- *Celluloid* plastics: This hazardous material, consisting of cellulose nitrate and camphor is at risk of degrading, emanating strongly acidic vapours. Moreover, it is highly inflammable. In consequence, the objects must be isolated. Each of them is wrapped in hemp paper and stored in perforated boxes to enable the eventual evaporation of acrid fumes.
- All other plastics less sensitive to degradation and temperature variations are grouped and classified by material: phenolic resin (e.g. *Bakelite*), urea formaldehyde resin (UF), melamine formaldehyde resins (MF), acrylics (PMMA), polystyrene (PS), polyethylene (PE), polypropylene (PP) etc., and by the type of objects such as household articles, toys, eyewear etc.

The preservation of the first plastics artefacts is, as we know, a challenging endeavour indeed for a curator, since the life cycle e.g. of a *Celluloid* object is estimated to be only about 100 years. We have reached this threshold for most of our items and are regularly confronted with irretrievable losses.

5. Conclusion

Today, the museum is considered a focus of identification, where the memory of a city, its people, and its activities, are documented. But it also has a social mission and is sensitive to the world of today, to societal questions, taking into

account the contemporary and future perspectives of various partners from industry, education and research.

But this museum, which is celebrating its 40th anniversary this year, preserves more than a century of reflection, collections and hopes.

Born and growing up like a precious child, some would like it to be still more attractive and larger. It is very much a 'dream museum', like 'Nessie', the fabulous creature of Loch Ness, occasionally appearing and re-appearing, arousing desires, and sometimes even putting its very existence in doubt.

The museum's theme is directly connected to the history of the city of Oyonnax and its people. Both should be able to rise to the task of continuing and developing this treasure trove of knowledge of the ubiquitous, modern material and industry of plastics, all too easily scorned.

Despite the support of the current municipal authorities, the museum remains shut out of the walls of the 'Big Steam', which would be the perfect guarantor of its large, renowned collections, and - even more numerous - the unknown wealth of artefacts that remains to be discovered.

Always up to date, active and vital, the 'Musée du Peigne et de la Plasturgie' in Oyonnax offers to anyone who knows how to look, all the beauty of its incomparable collections.