

Overview of leather context in France and Portugal
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Introduction

Leather is a versatile material, and the various objects with the name leather do not reflect the diversity of treatments and uses: tanned leather, vellum, dried hides, rawhide, etc.

Technically, leather should only refer to animal skins that have been treated and tanned to withstand different conditions of heat and humidity: vellum, for example, is a stretched and dried hide that is unstable under these conditions¹.

Leather production remains a polluting industry, whether during washing, tanning or dyeing processes. Proposals have emerged for a process of dyeing leather in an organic solvent environment² for example, for the return of vegetable tanning or for the use of vegan leathers.

Characteristics

The lasting and sustainable use of leather can be attributed to its properties: it is a strong and flexible material, available in all cultures where animals are slaughtered for meat.

Leather has water vapor permeability (breathability) which allows moisture and air to permeate through the leather. It also has strong thermal insulation and malleability and can be molded into a variety of shapes. It can be produced to be stiff or to be supple and will keep its new shape as needed.

Process

Leather requires extensive knowledge of the material, from the beginning to the selection of the hide (the hindquarters is one of the strongest areas, while the belly skin is more stretchy and the neck has a thick but wrinkled skin). The species of the animal also plays a role in the treatment that will be applied.

After the skin is removed from the animal's body – often collected from slaughterhouses-, hides are cleaned, fleshed and then tanned with different products. In post-tanning process, the leather is given its final properties by the application of syntans, fatliquors and dyes. Each leather article requires different wet-end products

1 Susanna Harris and André J. Veldmeijer (ed.), *Why leather ? The material and cultural dimensions of leather*, Leiden, Sidestone Press, 2014.

2 Harisoa Rampanana, *Mise au point d'un procédé de teinture du cuir en milieu solvant organique*, thesis under the direction of Michel Delmas, defended in 1992, Institut National Polytechnique de Toulouse (INPT).



and mechanical actions. Then a final film of several layers is used to protect the leather, increase its performance and creates diverse colors and patterns.

Historical and national contexts

The oldest leather object excavated to this day is the Areni-1 shoe dated to around 3,500 BC, found in Armenia in 2008³.

Indeed, due to the fragility of this organic material, it is rare to find viable evidences of leather use in archaeological excavations. They become viable from the Roman period in Europe and the Mediterranean⁴. Although this date seems very recent, indirect traces of leather working (scrapers, skinning marks on bones, etc.) can be observed since first human migrations⁵.

Leather tanning and dyeing appeared very quickly in Egypt⁶ and in China⁷. In Roman times, tanning was done on a large scale, mainly for the army⁸.

Leather history in France

In France, in the Middle Ages, the various leather trades were organised into guilds to regulate the market and the production of leather. From then on, the industry was seen as an important economic sector until the middle of the 20th century, despite its artisanal form (small businesses, minimally mechanized facilities, etc.)⁹. Tanning and dyeing were then made possible by vegetable mordants and production remained artisanal. It was not until the end of the 18th century that Armand Seguin proposed a technique for accelerating the tanning process, which at the time took 18 months, using chromium salt that allowed tanning in three weeks. This innovation followed a need of the French army during the Revolution wars¹⁰. Without a follow-up, this invention was finally completed at the end of the 19th century for productivist purposes. However, this dynamic is in the way of being reversed as the issue of sustainable development is gradually taking over this industry, through consumer awareness, a marketing and commercial response from companies and concern from local and international authorities about the pollution caused by mineral tanning methods¹¹.

Leather industry in France

Leather work, because of its customised demand, was industrialised late: the first mechanical shoe factories

3 Pinhasi R, Gasparian B, Areshian G, Zardaryan D, Smith A, Bar-Oz G, et al., “ First Direct Evidence of Chalcolithic Footwear from the Near Eastern Highlands ”, in PLoS ONE, Vol. 5, No. 6, 2010, [online] <https://doi.org/10.1371/journal.pone.0010984>

4 C. Driel-Murray, “ Practical evaluation of a field test for the identification of ancient vegetable tanned leathers ”, in Journal of Archaeological Science, Vol. 29, 2002, pp. 17-21.

5 R. Charles, “ The exploitation of carnivores and other fur-bearing mammals during the North-Western European late Upper Palaeolithic and Mesolithic ”, in Oxford Journal of Archaeology, Vol. 16, No. 3, 1997, pp. 253-277.

6 One of the most ancient datations is 1 500 BC : Mary Ann Marazzi, “ A Rare Example of Leather from Ancient Egypt ”, in The Journal of Egyptian Archeology, vol. 104, No. 2, december 2018, p. 211-216.

7 Patrick Wertmann and al., “ New evidence for ball games in Eurasia from ca. 3000-year-old Yanghai tombs in the Turfan depression of Northwest China ”, in Journal of Archeological Science, december 2020.

8 Marquita Volken, “ Le fer et la peau : le cuir et ses outils en milieu urbain romain ”, in Pascale Chardon-Picault (dir.), Aspect de l'artisanat en milieu urbain : Gaule et Occident romain, 2007, ARTEHIS Editions, p.415-424.

9 Eva Halasz-Csiba, “ Le Tan et le Temps : Changements techniques et dimension historique du tannage en France (XIVe-XVIIIe siècles) ”, in Techniques & Culture, Vol. 38, 2022.

10 Ibid.

11 Cédric Perrin, “ Le développement durable en perspective historique : l'exemple des tanneries ”, in L'Homme et la Société, 2014, No.193-194, p.37-56.



were built in the middle of the 19th century, allowing faster and therefore more profitable productivity¹². The leather industry was then very important in France, it became the third largest industry after metallurgy and textiles at the beginning of the 20th century, with 1,500 companies and up to 30,000 employees¹³, although it was gradually undermined by various factors. In 2007, only 67 companies and 1,721 employees remain¹⁴. This drastic loss of the leather sector can be explained by the wartime period, the advent of Fordism and the opening of the market to international products and lower quality materials, as well as French public policies that do not take into account the specificities of the sector. The advent of synthetic materials and industrial motorisation added to the devaluation of leather production¹⁵.

In France, the Leather Technical Center (CTC) is investing in the notion of sustainable development by establishing a documentary watch within the industry in order to report on its health impact as well as the standards in effect on this subject.

In order to make this industry greener, it is also necessary to question vegetable tanning, which seems much more ecological than mineral tanning, but which remains a very polluting process that was one of the main actors of industrial nuisances in the 19th century.

Leather history in Portugal

In Portugal, the first outlines of what would become the leather industry started to appear in the 12th century in Guimarães¹⁶. During the 16th and 17th centuries the tanning industry really emerged with Guimarães, Porto and Alcanena as main centers of the sector¹⁷.

In 1814 there were 86 tanneries through Guimarães region, after that tanneries were settled in the rest of the country. Despite the more pronounced concentration in these 3 localities, the activity was relatively well disseminated throughout the country, and there are records of working in several regions of the country, as it is the case of Alentejo region, Serra da Estrela, Madeira Island and Lisbon, where even today there are still tannery units in operation.

In 1977, the General Directorate for Cultural Heritage classified as property of public interest the Couros Area : most of the tanneries implanted there closed during this decade¹⁸.

In Guimarães, there are still units operating in the historical center - declared as UNESCO World Heritage Site - and the river that runs through the city is still known as “ the leather river ” – rio de Couros. However, tanneries were only truly born as an industry in Portugal in the middle of the 19th century as a result of the advent of the industrial revolution.

Practically until the end of the 19th century, the common tanning process in Guimarães consisted of washing the hides in running water and then leaving them for several days in aged baths of water, dove droppings, and lime. After being treated with lime and depilated, the hides were again washed and immersed in a tanning bath obtained by macerating oak bark or sumac leaves, as was common in the workshops of S. Torcato, where the activity was practiced alternatively with agricultural work. In this bath they were cured for several mon-

12 Cédric Perrin, “ Le développement durable en perspective historique : l'exemple des tanneries ”, in L'Homme et la Société, 2014, No.193-194, p.37-56.

13 Florent Le Bot, La fabrique réactionnaire ; Antisémitisme, spoliations et corporatisme dans le cuir (1930-1950), 2007

14 Centre Technique du Cuir (coll.), Les indispensables du CTC: Cuir dans tous ses états, 2011, p. 16.

15 Florent Le Bot et Cédric Perrin, “ Mobiliser l'industrie de la chaussure, mobiliser ses territoires ”, in Terrains et travaux, 2011, No.19, p. 205-224.

16 K. Gonzalez Vargas, “ The Reuse of Industrial Tanneries. Architectural Heritage in Guimarães, Portugal ”, in The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Vol. XLIV-M-1, 2020, pp. 847-853

17 Christiana Melanda, Reconciliação : Novos contextos e linguagens para a industria do couro, 2020, p. 17, [online] <https://urlz.fr/lcBb>

18 Op. cit., K. Gonzalez Vargas, 2020, p. 847.



ths. They were dried in the air and, finally, they were greased with oils and tallow to make them permeable. They were then beaten to make them flexible, depending on the intended purpose.

This vegetable tanning, practiced in an empirical way, without great chemical knowledge, marked the rhythm of economic growth of the production units. Despite the archaic working conditions, workshops, tanks, pelmets, and drying sheds proliferated in the urban area, blending in with dwellings and public spaces, constantly disputed for the work of this activity.

Leather industry in Portugal

The leather industry in Portugal exports 95% of production to 172 countries. In 2022, products worth 2347 million euros were sold, a new record growth was achieved (22,2%).

The industry has invested in international promotion but also in a new generation of products that promise to incorporate rice, coffee grounds, apple peelings or plastic bottles to meet environmental needs and concerns, becoming an international reference in the development of sustainable solutions.

Currently, there have been technological and research developments in Portugal and around the world to find alternatives to the use of animal skins. The vegetal “leather” is made from residues from other industries and there are already several brands betting on this aspect – Tintex (with various residues); Pinatex (with residues from pineapple peels); Muskin (with mushrooms), among others. In Portugal, Tintex developed vegetable “leather” from wood, cork and coffee industry waste combining state-of-the art technology and innovation.



Hernâni Reis Baptista - leather master designer

Born in 1986, Hernâni Reis Baptista is a visual artist who graduated in Fina Arts – Multimedia Degree at Faculty of Fine Arts of Porto University.

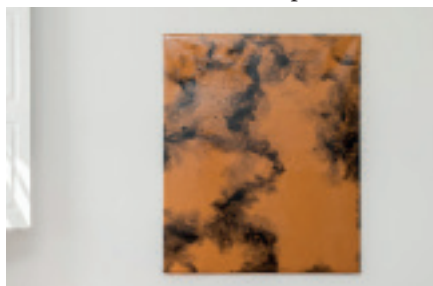
His work is represented in private and public collections, including the Frances Reynolds Collection, the Sandretto Re Rebaudengo Foundation or the Collection of the Faculty of Fine Arts of The University of Porto. He exhibited in different countries such as Portugal, Germany, Canada, Austria, Italy, Spain and France.

His work is focused, more or less obviously, on the artificial dimension of contemporary life, especially the body worship and context, but also other concepts related such as the surface, the reflection, the illusion or the camouflage. The textile material has been recurrent in him artistic research, often dwelling on its relations with skin. The textile as clothing, but also as protection, as armour; the textile as a second skin. From this atlas of ideas, arises the challenge of replicating it, through the use of materials that come close to it, without being it, like vegan leathers, silicones, or other materials in potency. Furs, pleats, folds, scales, hairs or even blades that cover the body: the possibilities for investigation are endless when the body ceases to be only human, transposing these concerns to the animal world, which also makes use of different appearance mechanisms to survive. This is where categories are diluted.

Ethical and ecological concerns also seek alternative forms to the use of real fur, either through reused materials, but also through the use of substitutes increasingly present in the textile industry in an even more conscious way. The proposal is to explore the different possibilities of replica; to analyze what it looks like but it isn't, reflecting on its repercussions.



Ballerina, ink, acrylic and varnish on synthetic fabric, steel rings and wooden structure, 2021
© Hernâni Reis Baptista



Smoke and mirrors, nankin ink, acrylic and varnish on synthetic fabric, 2020 © Hernâni Reis Baptista



breathable, absorbent, antibacteria, 2020 - Microperforated synthetic leather, 2020 © Hernâni Reis Baptista

