



**Informationen zur Umwelt und für Naturreisende auf Kreta:**  
Information about the Environment and for travellers in Crete:

**Become a tradition-rich handcraft extinct?**  
**The “tanner district” in Chania – Ta Tampakaria**

An article from our member *Maria Eleftheria*, Agios Nektarios / Crete



Outside the city of **Chania** (*Χανιά*), away from known tourist paths, in the district **Chalepa** (*Χαλεπά*) with its formerly magnificent stately homes, there is a very unusual place: “**Ta Tampakaria**” – the tannery (see fig. left).

Once they characterise a big part of **Chalepa** along the coast, today the few factories in which the craft is still conducted are located between unused halls and ruins.

A few year ago when I explored the tanner district for the first time, my amazement was great. I felt like on a travel through time. Then as now discarded machines stand at the roadside, huge steel and wooden barrels fill high spaces in

disused premises (see fig. below right), primitive devices with oil stating chains seem only to wait, to be put in operation: dusty, rusty machines dream in dark corners of better days (see fig below left).

A few steps further the rumble of rotary barrels is to hear and the whirr of heavy machinery that work well oiled since decades. People work quiet and focused on the animal skins, the air is filled with a tart odour mixture: Leather, chemicals, wet pelt and lube.



An ancient craft is carried out here. From raw, perishable animal hides, durable, hard-wearing leather arises in many operations and chemical processes through the use of tannins and tools.

Tailored and preserved for transporting mostly by salt or less conserved dry, the raw skins reach the tannery (see fig left on next page).

Water is needed for many operations in the tannery. The first station of the so-called water workshop is the “soaker”. Here the hides get washed, potted in water, and returned to their natural water content as it existed before the conservation.

The soaking time can take several hours for salted products, for dry skins it may take several days. It follows the liming where in earlier times mostly milk of lime or potash was used. Since chemical products



revolutionized the processes in the tanneries in the middle of the 19<sup>th</sup> Century, the loosening of the skin fibre fabric (skin digestion) as well as the removal of hair is often done with sulphides and/or enzymes for reason of times; thereby the process is significantly accelerated. The depilated skin, greatly swollen by the treatment of liming, is called “pelt”. During the following pulp the subcutaneous tissue is removed mechanically. Very thick skins can already be split whereas the dermis is cut horizontally over the total area. The subsequent delime free the “pelt” from the liming chemicals and largely neutral-

ized the strongly alkaline effect. It follows the enzymatic stains and possibly the raw material receives a special degreasing with surfactants. To make the “pelt” ready for the tannins, the skins are made “sour” in a bath with salt and acid.

Then the actual tanning can be started. The “pelts” are changed in their chemical and physical properties and preserved by treatment with animal, vegetable, mineral or synthetic tannins.

The "**chamois tanning**" is one of the oldest types of tanning: It uses fish oil, animal fats and institutions such as brain. So manufactured leather is very soft and shows strong water absorption.

The "**natural tanning**", the tanning with botanicals, for example white extracts from chestnut, Mimosa-, oak, the fruits of the Peruvian Tara tree or even rhubarb are used for the tanbark.

At the "**mineral tanning**" (chrome tanning), today the most common industry method, aluminium salts, chrome and zirconium salts are used. This involves many polluting substances: apart from the waste water debited with heavy metals resulting from the production, also “Waste Mountains” of old leather shoes, -jackets etc. and on their combustion the water-soluble chromium III salts can reshape in the highly toxic chromium VI salts. Also experts suspect, that the in higher quantities allergies triggering chrome III salts under certain conditions (link with human sweat) turn into the often more poisonous chrome VI salts. These are classified as carcinogenic.

The “aldehyde tanning“ was widely disseminated lately through the use of glutaraldehyde. The so produced (usually in combination with the chrome tanning), slight yellow leather are washable and characterized by pleasant softness, the most fleece leather and "Hospital Powell" are manufactured in this way.



Only a few types of leather are tanned with only one tanning agent. Frequently tannins are combined for leather with special properties. The order and the amount of tannins used, besides the quality of raw skins, determine the final product. While the tanning early took place in brick pits, today rotating drums of wood (see fig. left), or stainless steel are used, speeding the tanning process based on the movement of the skins.

Leather can be split before and after the tanning. The skin has a harsh and less rough side after tanning. The harsh side, originally turned to the meat, is called

“flesh-side”. The “flesh slit” is rough on both sides and is processed to velour leather or, with a coating, used as replacement for shagreen. The smooth side is called the “shagreen split”, it is considered the more valuable part of the skin and has the typical surface structure.

This “shagreen side” adjusts its use in various chemical and mechanical processes.



The non-split leather is called full-grain leather. The exact thickness adjustment takes place after the tanning with the so-called clinching. By rotating knife cylinders, clinching chips are removed from the leather (see fig. below left). Water workshop works and the way of tanning determine the softness, elasticity and abundance of leather, its ability to water absorption or its dye ability.



Among the mineral tanning the special characteristics of the finished leather result from treatment with other tannins, dyes and fats funds (see fig. above right).

The colour of the leather depends on the tanning appliance. So you get brown to red-brown shades with the “natural tanning”, white with the “white tanning” and yellowish leather by the use of fatty tanning appliances. Therefore the leather is often dyed (see fig below).



Until about the year 1860 only substances from nature were used for dyeing leather, today however, almost only aniline dyes are used. Dyeing mostly takes place in barrels, but can be performed also by brushing, spraying or with roll applicator machines. The leather can be upper surface dyed or imbued. Without compromising the typical character of the surface of the leather, the dyes enter a chemical compound with the leather. If leather gets no or a low coating (dry finishing), it is called pure aniline leather. Wear and scratches are less apparent at complete with aniline dyed leather because top and bottom have the same colour. Stronger coated leather is referred to as semi aniline, or, if the coating is offset with covered pigments referred to as covered leather.

Leather can be shiny or matt if the smooth surface is treated. Resistance of the surface can be significantly increased through use of resins; pigments and additives applied via splashes, casting or roller application (Rolercoater).



The applied media are smoothed and firmly fixed to the leather by ironing (see fig. left), burnish or polishing. The surface structure of the leather can be changed by boarding, embossing, perforating or sha-green (punch marking). For the ennoblement of the leather surface, as for example for patent leather, a varnish, a cold-cut varnish or a slide coating can be applied to the leather surface. You can get hunting calf, if the flesh-side is smoothed and used as visible surface. For nubuck leather the grain side is grounded with fine sandpaper.



The tannery was socially poorly viewed through all times and considered as impure craft. The establishment of a tanning company demanded a considerable capital, needed relatively much space, and so the facilities usually passed on over several generations.

It was a dangerous, heavy work in extreme pong. In addition to the already mentioned organs of animals for slaughter, the tanner formerly used urine for the leather manufacturing. Natural raw materials had a high value, and so all remains have been recovered. Animal hair were delivered to the felt factories, fat and parts of the hypoderms were supplied to glue and gelatine production.

In many cities the craft could be exercised only in certain roads or neighbourhoods because of the infernal odour and the health risk. In using the decaying skin workers could infect with splenic fever and other diseases. And even today protective clothing is needed for specific operations, as demonstrated by the corroded surface of this glove (see fig above right).

For all tanners the natural resource water was and is essential for the various operations. Therefore also the “**Tampakaria**” of **Chania** are located close to the sea.

A trip to there should be done during the morning hours, because especially in the hot summer months the factories are closed in the afternoon.

You get to the tanner neighbourhood, starting from the **Market hall**, on the road **El.Venizelou** (*ΟΔΟΣ Ελευθεριου Βενιζέλου*), following the signs towards the airport until you see the sign to **Chalepa** ( ) on a cross-



road which leads you left along the sea (towards the airport would be right). Stay on **El.Venizelou** (*ΟΔΟΣ Ελευθεριου Βενιζέλου*), which transitions into the road **Chalepa**, until you get to a square with a big church, the **Platia Evagelistrias**. Here turn left into the first road, the road **Armenon** (*Οδος Αρμένων*), which leads to the sea. The first crossroad is named **Kyriakis** (*Αγίας Κυριακής*). Remember this crossing, because the remaining tanneries are now separated by houses.

The first way goes to the left, the road **Kyriakis** (*Αγίας Κυριακής*) leads into the road **Boutsounariou**, which ends on a square on top of the hill, which you cross in a slight left turn and follow the road **Ploiar-chon 1866** (*Πλοιάρχων 1866*) downhill. From here you can already see the red tiled roofs of the big halls. You can park your car on a small square on the sea. Here are the two tanning still in operation in this area. The smaller factory is owned by the sympathetic **Christós Filoitis** (see fig above).



Clearly visible, mounted on a board, hang the traditional tools from the past.

*Christós Filoitis* began working here in the age of 20 years and learned the trade

from the bottom up. 13 years ago he acquired the small facility. From the leather produced by him, summer sandals, hiking boots, belts, bags, backpacks and cages for animals are manufactured in Crete.

He tans his leather with Mimosa and predominantly processed animal skins of bovine animals and antelopes from Africa. A piece of leather costs, according to its weight around 25 euro (see right).

Using vegetable tanning agents from Mimosa, a type of Acacia, is controversial. Mimosa <sup>1)</sup> grows on African and South American plantations. They are harvested after seven to nine years as whole trees. Plantation growing's with their monocultures are eco-unfriendly.

If *Christós Filoitis* has even less work, he helps out in a second holding on the right, which is owned by *Andreas Sergakis*. *Andreas Sergakis* (see fig. below left) is tanner since 30 years, the business exist since 1925 which he inherited from his father, but he won't be able to pass it on to his own sons because no permits are granted by the country anymore.



Sadly, with bitterness in the voice, *Andreas Sergakis* tells me: "We are left in the lurch by the State. Hearty we must pay taxes, but a sensible, really viable way to continue to exist, is not identified."

*Andreas Sergakis* leads me through his business. Some years ago, so he reported, there was the idea that the tanneries, originally sitting a lot outside of Chania, should be rebuilt new and equipped with modern wastewater treatment plants, in some distance from the town as Chania grow increasingly. Now houses surround the tanning operations, which discharge water as previously untreated into the sea.

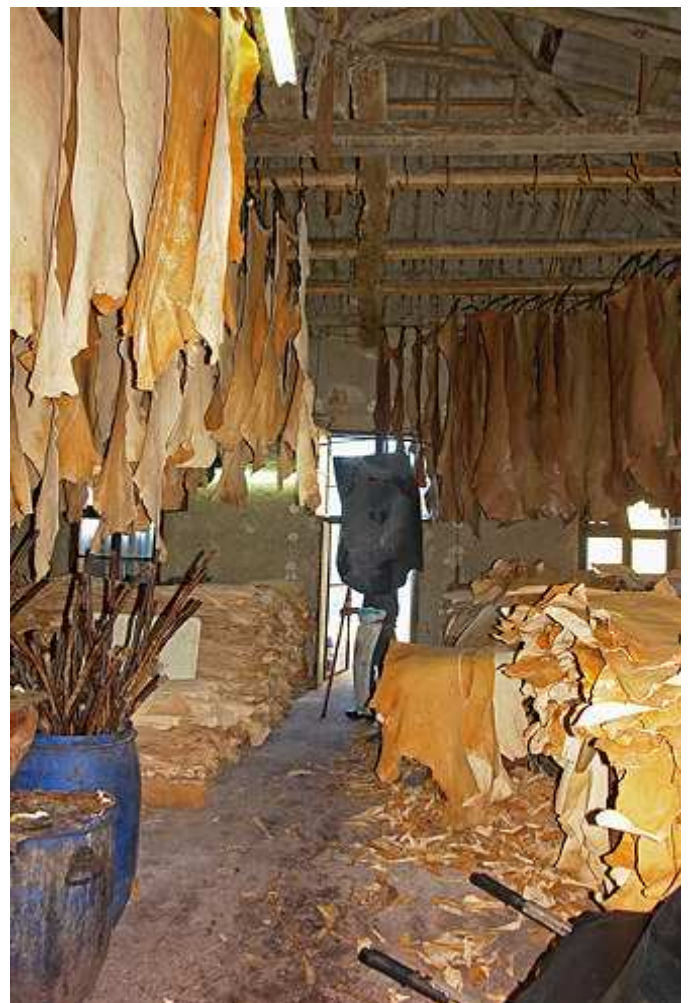
However since the required high individual investments for a relocation of the factories is in no relation to the subsidies held out in prospect, the project failed. And therefore it currently looks like the traditional handcraft of tanner in Chalepa will die out.

1) (for information's about the family of mimosa plants see: [<http://en.wikipedia.org/wiki/Mimosa>])



*Christós Filoitis* tells me the process of his work in short form: “The skins arrive dried and will be stored. If necessary we insert them into water for 4-5 days and then they wander in the barrel for hours until they are soft. Then we give lime in the drum so that the hair looses. Then the fat and remaining coat is removed with a machine, and then we put the skins back into the barrel, to flush the lime. A new barrel follows for 6-10 days with water and Mimosa. Then we dry the leather, it is then smoothed with the machine, again suspended until it is completely dry, then pressed and cut off the edges.” *Christós Filoitis* smiles as he noticed my confused face and says: “This is the rough process in key points. Of course much more must be done. Depending on the purpose of the leather, individually other treatment is required.

The effort is enormous, until the skin turned into workable leather. These processes explain the structure of holdings. Depending on size and existing space, the water workshop and the machinery for processing are at the same level, for smaller tanneries work can be distribute on two floors (see fig. below left). Same for all companies is the high room with wooden beams, where hooks are located at regular intervals to hang the skins (see fig. below right).



If you want to explore the other tanning operations, take the road Emmanoel Vyvilaki, pass the Tampakaria Music house, keep slightly left until the roads leads along the sea and get once more to the road El.Venizelou where you need to turn left. Now take the same way as already described above to the crossroad Kyriakis. This time turn right and follow the road until you reach at the chapel (see fig. right) where you can park your car. The neighbouring tavern is open only in high season.





In this part of the tanner district are five working plants. One of those is quite large and equipped with more modern machines (see fig. below left). Many rotating drums in the spacious concrete hall create an impressive background noise (see fig. below right).



At this point I would like to mention something I consider to be important: The people in the tanner district work hard and deserve respect and consideration. Please look during your exploration not to interrupt the process and if you want to photograph ask before for permission. Take care of yourself on your journey if you discover the ruins, because many buildings are at risk of collapsing.



Unfortunately for me the illusion of sustainable natural has disbanded with the knowledge of the production process because no matter where the leather is produced the production history is the same everywhere. So tanning in South America, Asia or Africa moved the resulting problems for the environment only to those exotic countries and the people living there. Without wastewater treatment plants and industrial safety regulations the cheap manufacturing is at the expense of people and nature. Therefore adults as well as children work in Brazil without respiratory protection and gloves at tanning. Skin and diarrhoeal diseases, allergies and respiratory damage belong to employees to everyday life. Incidentally, providing many tons of synthetic tanning agents to the so-called third world countries represents an important export entry of the chemical industry, also in Germany. Also hides of farm animals slaughtered in Germany are mostly exported. Hereafter finished leather come back for further processing. However, the leather industry in Central Europe has the advantage of severely limited environmental impacts by means of advanced wastewater treatment techniques. The tanneries are required to comply with legally prescribed limits. What then of course reflects first on the price, but only at the first (short-sighted) view is really expensive, as harming the beautiful planet Earth, which is our all livelihood.

Total ecological approaches are now at many German companies. Here preferably skins from species-appropriate animals of milk and meat production from the immediate vicinity are used. Protracted, animal abusing transports been omitted; a conservation with salt, which causes environmental problems in the washing out is not required in many cases, if necessary the skins are delivered cooled to the tannery.



Some products made of vegetable tanned leather can even now be easily composted after use. In regards to leather, each of us can also protect a little environmental: By purchasing high-quality leather goods, which are stable for decades and their wearing comfort, as experience shows, rather increasing over time. Apart from the feeling to relax with a good piece of leather.

Finally at the end of this leaflet I don't want to deprive you the images of the untreated sewage of the tanneries, which are directly piped into the Sea (see figure below)

It looks frightening this red broth that stems from the use of natural tanning agent Mimosa. Nature seems to come to terms with it as the blooming flowers are showing. Far more dangerous are those substances that are not visible such as the high salt input which occurs when washing out the skins or all the oil of the machines that seeps and impacts the ground.



Translated by Michael Bloechinger-Daeumling

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