

First lectures in the field of leather tanning at the Imperial and Royal Czech Technical University in Prague and the development of leather tanning education at Czech technical schools

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Abstract. *The paper speaks about the development of industry of leather in Czech lands and about the introduction of teaching of this matter in the Technical Universities in Czech lands.*

It presents important work of two professors: Josef Schneider, father of lecture of leather tanning at the Czech Technical University in Prague, and Václav Kubelka, who introduced the lectures at the Czech Technical University in Brno in the beginning of 20th century.

Keywords

field of leather tanning, Czech Technical University in Prague and in Brno, Josef Schneider, Václav Kubelka.

1. Introduction

The growth in the world's populations in last several decades has had a positive impact on the development of leather processing and its application in many sectors of consumer industry; first and foremost, in the clothing and shoe industry but it is also utilised for various consumer goods and craftsman tools (straps, strips) or for book binds.

Leather processing has been an area of human endeavour since the Paleolithic period; already the prehistoric man dressed in animal hides. Nowadays the utilization of genuine animal hides has become an expensive and precious product. A great consumption of hides and the demand for them, especially in the 20th century, led to the research of artificial hides as substitutes for the genuine animal skin. In order to satisfy the demand

for well processed genuine hides as well as artificial leather it was necessary to improve production procedures and apply new knowledge, especially in the field of chemistry.

2. Leather processing in Czech lands

If leather processing enters the 19th century with obsolete techniques and is mainly an issue for manual work, by the end of the 19th century and the beginning of the 20th century it is already a modern developed industrial field. It is a focus of attention not only for entrepreneurs, who start leather processing plants, but also chemists, who not only try to make the processing more efficient by using chemicals but also endeavour to obtain leather of the finest quality and offer hides of various colours (as opposed to the traditional ones which were either of natural colour or were dyed black). The entrepreneurs and plant owners attempted to introduce their use into new fashion trends and thus increase the demand for these goods and create new capital.



Fig. 1. Interior of tannery (beginning of 20th century). (Reference: <http://www.kozeluzna.cz/fotogalerie/detail/g3>)

The impulse for the development of leather processing, which was as late as the early 19th century still the matter of guilds in Czech lands, was first and foremost the requirements from the army, namely military outfit material from leather, and secondly the growth of the population, which, with the development of modern life, experienced the want for shoes. Therefore, it was not possible to stay at the level of craftsmen and so workshops and later plants began to spread.

Perhaps every town had its tanner who took care of leather products for the local population. Workshops and plants appear roughly from the 20ies of the 19th century in several centres: Chrudim, Litoměřice, Česká Lípa, Třebíč, Jihlava and Brno, which was the hub of leather processing in Czech lands [1].

Since leather processing stops being a craftsman's job after the first half of the 19th century and becomes an industrial field, there was a need for industrially educated specialists, the knowledge of whom would be based on scientific findings and not only on the empirically acquired experience of master craftsmen in leather processing. Thus, leather processing followed the suit of many fields and became an industry.



Fig. 2. Interior of tannery (beginning of 20th century). (Reference: <http://www.kozeluzna.cz/fotogalerie/detail/g3>)

Advantageous political conditions enabled the establishment of leather processing associations, which first occur in the 60ies of the 19th century. In the 90ies of the 19th century *The Central Association of Czech Tanners* is founded. The aim of this association was to establish a school for leather processing. In that time this kind of schools existed in many European countries: England, Italy, Belgium, Germany and even in the Hungarian part of the Empire, however, Austria lagged behind and had no such school for tanners. Factory owner from Kukleny Alois Nejedlý [2] took an active part in these efforts with the support of the town of Hradec Králové, which agreed to accept such a school on its territory, and also thanks to the activity of a chemist from Hradec Králové, Josef Jettmar. Nonetheless these efforts were in vain and the calling for the school for tanners was not approved.

3. The contribution of the teaching of professor Josef Schneider in the field of leather processing

Since the establishment of a school for tanners was uncertain and probably not achievable for a long time, the efforts for the lecturing in this field moved to a technical university, which at that time could provide for the introduction of lectures concerning the manufacture of hides.

The suitable person who put these efforts in practice was Josef Schneider (1864-1931) [3]. After his studies at the Czech state grammar school in Prague, he completed the studies in chemistry at the Technical University in Prague with flying colours. At the beginning of the 90ies of the 19th century he deepened and enhanced his knowledge at the chemical school in Mulhouse in Alsace, then a territory in Germany. By the end of 1892 he obtained the habilitation degree at the Czech Technical University in the field of *chemical technology of organic dyes*. Besides to J. Schneider, at that time Karel Kruis (1851-1917) [4] was active at the Czech Technical University as an associate professor, who obtained habilitation degree in the field of organic dyes extended to distilling industry in 1885.

With the arrival of Josef Schneider the students were again offered facultative additional lectures in the field of dyeing industry (K. Kruis stopped giving lectures in this field in 1885 and specialised in fermentation chemistry [5]). After his habilitation associate professor Schneider provided lectures on "Dyeing of hides", included in the curriculum for the first time in the academic year of 1896/97 and provided in the amount of two hours a week in the winter term. Although the name of the subject points to a content focused mainly on the field of dyeing in practice, Schneider dedicated a part of lectures to microscopic and chemical composition of leathers, which is naturally important for dyeing, but enables more general understanding of the leather processing and its methods on the part of students. The rest of the course was focused purely on the dyeing procedures. Schneider lectured about preparations before dyeing and about dyeing techniques of individual types of hides treated by dyes known at that time. It could not be denied that Schneider was a professional in the field of dyeing. Let's not forget that he obtained his chemical practice in this very field. However, he gained concrete experience that he could impart to his students during his practice in 1893 in leather dying workshops of Emil Miškovský and Josef Klement in Prague [6]. Two years later (1895) he published an article "The Chemistry of Leather Dying with the Introduction about Education" in *Kozeluzské listy* (Newspaper for Tanners). He offered the lectures about dying of hides again in the academic year of 1902/03.



Fig. 3. Professor Josef Schneider. (Reference: SCHÄTZ, Miroslav, *Historie výuky chemie*, Prague, VŠCHT, 2002, p. 224)

In the meantime, *The Central Association of Czech Tanners* continued its efforts to establish schools for tanners. In the same year it provided the Czech Technical University with a grant for one student who would be interested in the field of leather processing. The association then made other efforts. In 1904 they sent a petition to the Ministry of Religion and Education of the Empire demanding the introduction and establishment of lectures in the field of leather processing at the Czech Technical University. The association argued that until that time the efforts to start a school for tanners had failed, and also that the growing influence of chemistry in leather processing demanded trained professionals. Moreover, they pointed to the fact that this would be the first such institution in the Monarchy and its Czech nature would give an opportunity for studies to Czech students, who had so far had to rely on the studies at the leather processing institute in Freiburg in Germany, or in Leeds in England. The petition drew the attention of the ministry to the fact that the introduction of such lectures was not too demanding, the teaching could take place in the dyeing laboratory and the lectures could be provided by associate professor Schneider, whose activity in the field had been evaluated very positively.

The request was immediately handed over to the chancellor's office of the Czech Technical University and the teaching staff designated it for discussion to the committee composed of professors Štolba, Preis and Kruiš. The committee submitted its report before the end of the academic year of 1903/04. It unanimously recommended the introduction of the lectures. They saw it as an opportunity to provide additional teaching to the lectures about dyeing. Such lectures would certainly be suitable for students who had had some practice in the field or intended to study it full time. The committee also suggested that the lectures could be given as a facultative subject every other

year. It suggested Schneider to be the lecturer, at that time already an associate professor in the fields of dyeing, bleaching, printing and also in technical microscopy and knowledge of merchandise. The corps of teachers supported the report and approved it at its meeting on 12th July 1904.

However, the approval from the Ministry was not coming and the corps of teachers began to demand an answer from the beginning of 1905. The answer came in October 1905, the ministry refused the introduction of the lectures and specified the reason for this as the lack of money. The corps of teachers informed *The Central Association of Czech Tanners* and expressed their willingness to support possible other petitions and steps made to establish the lectures. The request was repeated, and, in the end, the ministry sanctioned the introductions of the lectures from the summer term 1907 onward by its decree from 26th January 1907.

The introduced lectures under the name of "The Processing and Dyeing of Leathers" were subsidised for 4 hours of lectures and 4 hours of exercise in the summer term each other year [7]. Associate professor Schneider more or less took over the programme of his previous lectures, added interpretations about chemicals used in this field, introduced the students to the equipment of plants for hides, but also lectured about the evaluation and the method of examination of hides before and after their dyeing. He put emphasis on the students being acquainted with all preparations and their properties and analysis.

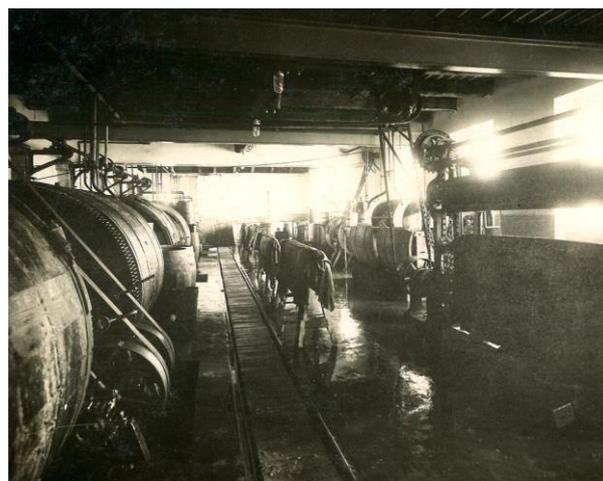


Fig. 4. Interior of tannery (20th century). (Reference: <http://www.kozeluzna.cz/fotogalerie/detail/g3>)

Then the lectures were offered in the usual interval. After the war Schneider, by then already a professor, asked for exercise with the subsidy of 16 hours of exercise. After the Czech Technical University and independent universities of chemical-technological engineering were created in 1920 the lectures on dyeing of hides became a part of the institution of professor Schneider.

4. The development of leather processing at technical schools – the activity of professor Václav Kubelka – and the establishment of a school for tanners

Even though the first lectures in leather processing were born in Prague at Czech Technical University and their father can be quite rightfully considered professor Josef Schneider, the main focus of the leather processing teaching moved to the Czech University of Technology in Brno and achieved high, internationally acclaimed levels.

Václav Kubelka (1892-1977) [8], by origin a graduate of Czech Technical University in chemistry, was first appointed an assistant teacher after his studies and obtained the habilitation degree during the war years at the University of Technology in Brno. After the establishment of the Czechoslovakian State he introduced lectures in leather processing, to the teaching of which he was delegated in 1919. The following year an independent institute of “*Chemical technology V*” (leather processing, chemical technologies of water and tissues) was set up and Kubelka was appointed a substitute professor (he became the full professor in 1927) [9].



Fig. 5. Professor Václav Kubelka. (Reference: *vutbr.cz*)

Thanks to his influence and also the support and the contributions of the leather processing industry he created at his institute “*The State Research Institute for Leather Processing Industry*“, founded in 1922 [10], the only of its kind in Czechoslovakia, the scientific reputation of which

crossed the frontiers of Czechoslovakia. Thus Brno became the hub for the teaching of leather processing. Professor J. Schneider continued with his teaching in Prague but since his specialization was mainly processing by dyes, he limited his lectures to the topics of hide dyeing. However, professor V. Kubelka in Brno encompassed the entire subject scope of leather processing.

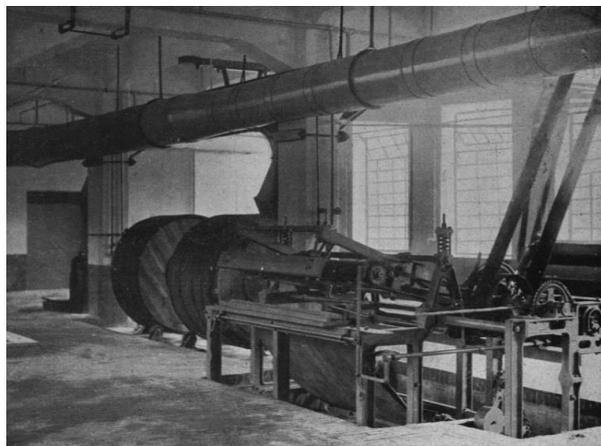


Fig. 6. Interior of the school for tanners in Hradec Králové. (Reference: *Památník k odevzdání budov koželužské školy Sekcí průmyslu koželužského při Ústředním svazu československých průmyslníků a k otevření Státní odborné školy koželužské v Hradci Králové dne 31. srpna 1924, Hradec Králové, 1924, p. 6*)

With the establishment of the Czechoslovakian State and after the development after the war years the specialists returned to the efforts to set up a high school for leather processing, the focus of the vain efforts of the *Association of Tanners* in the 90ies of the 19th century. Hradec Králové was still the town where it was to be set up. The school was formally opened in 1924 as a two-year specialised vocational preparation high school [11].



Fig. 7. School for tanners in Hradec Králové. (Reference: *Památník k odevzdání budov koželužské školy Sekcí průmyslu koželužského při Ústředním svazu československých průmyslníků a k otevření Státní odborné školy koželužské v Hradci Králové dne 31. srpna 1924, Hradec Králové, 1924, p. 1*)

5. Conclusion

The industrial development in the 19th century influenced all sectors of manufacture and the old leather processing craft was among them. Thanks to the late industrialization leather processing really became an industry and Czech lands had a leading position within the Austro-Hungarian Empire in this field. The development of industry required technically trained specialists and since the Czech society had a technical university in Prague at its disposal this was the place where the lectures of Josef Schneider were established with the contributions of the association's activity. Schneider's lectures belonged to the first ones on the European continent and formed the basis for the development of this field at Brno University of Technology, where the teaching, including research and cooperation with the association, was implemented by professor Václav Kubelka. Thus the leather processing field was fully industrialized in Czechoslovakia at the beginning of the 20ies.

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