
## Merry Christmas and a safe and happy holiday

**Wishing you a very festive season and looking forward to being of assistance with your questions for information in 2019**

**The LASRA Library**

## Leather studio opens in Far North shed

Kaeo woman Dominique Heileson has breathed new life into the old building with 'EekieBooteekie', a shop filled with leather goods from hand bags to tassle products made from offcuts, in a bid to create a business that produces less than one per cent waste. The 160 year old building was widely believed to have been used as a blacksmith's shed but now has been transformed with colourful one-off leather pieces adorning the walls.

Heileson was the winner of a regional scholarship from AMP earlier this year and at a special lunch for the award at The Pear Tree, she was reminded of the empty shed next door.  After a head injury, Heileson sold her car and purchased an industrial sewing machine.  "It was part of my rehabilitation - I taught myself. "It's cool to be able to still work and sell and nice to open the space with the character of the old photos and things."

Heilesen opened three weeks ago and has already had a number of people share their memories of the shed. Heilesen has also started training people with hopes to create jobs in Northland and is aiming to enter a handbag competition in New York next year.

Check  Eekie Boo-Teekie @*eekiebooteekie* instagram profile

From *stuff.co.nz*

## Applied DNA wants to tag 300 million square feet of leather in next five years

Applied DNA Sciences, a provider of DNA-based product authentication solutions, has signed an agreement with the Eurofins BLC Leather Technology Centre to work on the commercial implementation of the comprehensive leather traceability system they have been working on for the past 18 months.

A research project to develop this system was launched in April 2017. Brand partners for this initiative included Clarks and Puma. BLC and Applied DNA  announced the completion of the project in May

2018, saying at the time that it had been “successful in every respect”. The partners will now continue their collaboration to implement the system, based on Applied DNA’s SigNature T technology, on a commercial level.

Upon making this announcement, Dr James Hayward, president and CEO of Applied DNA, said: “This agreement with BLC significantly enhances our position for the commercial implementation of our leather tagging system. We already have keen interest in the commercial adoption of our system from several project sponsors. We are targeting a defined goal of having 300,000,000 square feet of DNA-tagged leather under contract over the next five years. BLC’s knowledge in the industry and technical expertise will be invaluable to these efforts.”

For his part, Adam Hughes, managing director of Eurofins BLC Leather Technology, said there was “a strong need” for a system of traceability for semi-processed and finished leather. He added that the system developed alongside Applied DNA is cost-effective and allows for the application of “a unique molecular tag in a way that is impossible to counterfeit”.

From *leatherbiz.com*

## 153-year-old boot recovered from Auckland beach shipwreck


It's taken several heavy duty moving trucks, five days and more than $1 million to remove a 153-year-old shipwreck from a West Auckland beach. The Daring, a schooner uncovered by shifting sands at Muriwai Beach in May, was successfully removed, fully intact, by the Daring Rescue Team on December 12.  "It's a beautiful piece of work," Paul said. "The Daring was made in an earlier era of boat building, and it is the only kind probably in the world that is still fully intact."

An intact boot, along with coins, a cup, clay pipes and multiple wine bottle caps dating back to the 19th century were all found on the ship.

From stuff.co.nz

## New training course part of ZDHC Academy revamp

The Zero Discharge of Hazardous Chemicals (ZDHC) Foundation has announced that it has updated its online chemical management training portal, the ZDHC Academy. It was launched at the end of 2016 with the aim of making high quality and certified training courses available to all members of the textile, apparel, footwear and leather industries. The portal is populated with content from a pool of seven accredited training providers and there are more than 60 individual trainers involved.

As part of the upgrade of the ZDHC Academy, the organisation has made it easier for users to search for suitable courses, register for training and track their learning progress.  ZDHC is also now offering a new training course about wastewater management. It will introduce participants to key elements of ZDHC's Wastewater Guidelines, show how to implement them, and how to conduct a root cause analysis should test results show non-conformance. It also offers an overview of each stage of the wastewater treatment process.

Announcing the launch of the updated platform, Christina Raab, who oversees the ZDHC Academy, said: "With more than 1,000 training participants and nearly 80 in-person training sessions in 2018 so far, we wanted to take our training platform to the next level in terms of clarity and user-friendliness. We are excited about the growing uptake of our Academy worldwide and committed to continuously setting the mark on training content and quality together with our accredited training providers and partners."

ZDHC has also said that additional training course are being finalised and should be announced in January 2019.

From *leatherbiz.com*

## Roof jump leads to sustainable leather goods company


During a particularly rowdy night out while studying at university in 2014,  James Richardson jumped off the roof of his flat and broke both his legs. While recuperating, he delved into the YouTube vortex and

came across hand-crafted leather goods. A few tools and some time later, Sonder Leather was born. Richardson, 25, is regularly pumping out wallets and travel folios from The Corner Store co-working space on Cashel St. Still maintaining a day job as the South Island rep for a national eco-packaging company, he spends his Saturdays pressing and hand-stitching sustainably-sourced kangaroo leather.

The first person who bought one was my physio, and then I started giving them away for 21st presents," Richardson said. "I whacked up a website to see what would happen, and it carried on from there." Still a part-time gig, Richardson said it was his casual approach which let him take risks that "probably wouldn't fly" if it were his full-time job. "If I was depending on it for income, I'd probably be doing lower price, higher quantity, using cheaper material. I definitely wouldn't be hand-stitching them because that takes ages," he said.

Richardson said he promised a lifetime guarantee on his products. His driving wallets are sold for $149, and travel folios for $169. He buys the leather from an Australian company, who sourced their leather through the sustainable kangaroo quota system regulated by the Australian government. "The kangaroos get so ridiculously overpopulated they tend to ruin the environment for other native species, so they have to keep the population under control. "If there was a synthetic material that I could get the same properties from, I'd use it in a heartbeat. This is as close to a sustainable leather that you can get."

"Essentially Sonder is a big experiment into whether people care about who is making their stuff and that it's made to last," he said. Check out Sonder here. https://www.sonder.co.nz/

From *stuff.co.nz*

## Clariant says green is the new black

Clariant announced the release of ColorForward 2020, the 14th edition of the annual colour forecasting guide.

While consumer preferences have been trending toward warmer tones in recent years, Clariant colour-trend watchers see a shift to cooler blues and greens in the palette they developed for 2020. In fact, of the twenty colours in the latest edition of ColorForward, five of them are different shades of green. Some are genuine and natural looking, while others seem more artificial or ‘digital.’

That doesn’t mean the 2020 trend colours don’t include some warmth, says Judith van Vliet, ColorWorks® Designer and a leader of the ColorForward team. There are a range of reds, yellows and even a couple of oranges. These tend to be bright and, in many cases translucent or tuned up with special effect pigments.

“There are a lot of things going on in the world these days,” van Vliet explains. “Not all of them are negative, but the sheer volume of ideas, images and information confronting us, and the speed at which it comes at us, can seem overwhelming. Instead of trying to escape, which often seems impossible, people are seeking ways to harden themselves as a sort of emotional self-defense. We see other trends springing from developments in gene modification, increasing surveillance and loss of privacy, and the potential for ultra-high-speed travel.”

From *textileworld.com*

## Chanel to drop fur and exotic leather

Chanel has announced it will no longer use fur and exotic leather, which includes crocodile, lizard, snake and stingray skins in its future collections. Without unveiling its projects any further, the luxury fashion label cited the difficulty in sourcing skins that match its ethical standards as one of the reasons behind

the decision. “The future of high-end products will come from the know-how of what our atelier is able to do,” Bruno Pavlovsky, President of Chanel, told WWD.

The luxury French label said it will, instead, work on developing new sustainable materials that have a low environmental impact.

From *ILM.com*

## Silvateam says veg-tanned leather comes top for antibacterial action

Research carried out by plant-based leather chemicals manufacturer Silvateam suggests that vegetable-tanned leather will help endow footwear with antibacterial properties more effectively than chrome-tanned leather or synthetic material.

Sales director, Eric Poles, shared early results from the company’s studies into antibacterial properties at the tenth AICC convention for the Veneto region on November 23. He said the company will continue its analysis and publish the full results when it is able, but he made it clear that early results show a much greater antibacterial effect with veg-tanned leather. He said this points to extra comfort being an important advantage that footwear brands will be able to offer consumers by using veg-tanned leather in their shoes.

From *leatherbiz.com*

## TFL presents colour trends for Spring/Summer 2020

The specialty chemicals manufacturer’s trends and fashion collection for Autumn-Winter 2020-21, which will be presented at the Global TFL Fashion Centre in July 2019, will also be available for viewing online.

Twice a year, in January and July, TFL traditionally publishes its Colour Trends in a printed brochure. More recently, the chemical supplier also started presenting a Fashion Collection with new inspiring

article creations in its Global Fashion Centre located in Castelfranco, Italy.

The TFL Colour Trends have been available electronically for some time and, from now on, the manufacturer says it will also present its Fashion Collection in the same manner. To be presented in a video, TFL's Fashion Collection Trends will highlight the essential TFL products for tanners to develop their leathers accordingly. "This service may also allow customers who can't attend the Fashion Presentation event in Tuscany to get inspired by 'Fashion made in Italy'", said TFL.

To see a short video of the selection process click here

From *tfl.com*

## APL releases Woolmark-certified running shoe

US footwear company Athletic Propulsion Labs (APL) has teamed up with wool promotions body, The Woolmark Company to create a shoe made from 80% Australian merino wool.

APL has described the TechLoom Breeze Merino Wool model as its "most sustainable and lightest running shoe to date". It is the first technical-knit footwear to be certified by The Woolmark Company. It features APL's patented, stretch-rebound TechLoom upper, which the company has said offers greater elasticity, strengthens the shoe and provides greater support, especially during performance and sports lifestyle activities. The engineered knit employed to create the shoe has been in development for more than two years. It is designed to keep its form and shape, with filament-wrapped wool yarns used to strengthen the shoe so as to reduce abrasion and extend the life of the product. In addition, stain and odour-resistant yarns have been incorporated.

APL co-founder Ryan Goldston said: "We are extremely excited to introduce our Merino Wool TechLoom Breeze that we developed with The Woolmark Company. What makes this product truly unique is its luxurious feel thanks to the inclusion of 80% Merino wool yarn. But it also has amazing performance capabilities too. This is our most sustainable shoe yet and I'm confident that when our

customers put on the shoes, they'll be blown away by how light, comfortable and luxurious the shoes are.”

From *sportstextiles.com*

## Lanxess says polymer silicones can be used safely in leather sector

Specialty chemicals company Lanxess has said that polymer silicones can be used safely, if they are used as intended, in the leather industry. "In our experience, they represent an economical, sustainable and safe chemical product class," the company said.

In a statement, the company said it supports the leather industry in reconciling economic interests, ecological compatibility and consumer benefits, and has been consistently focusing its leather production portfolio on sustainability for years.

According to Lanxess, products' concentrations are well below the specified limit with regard to the latest restriction by the European Chemicals Agency (ECHA) on cyclic siloxane compounds. Some of the silicone-based products marketed by Lanxess for the manufacture of leather, contain trace amounts of cyclosiloxanes as unavoidable raw material residue in the manufacture of leather chemicals. Dr Martin Kleban, HSEQ representative at Lanxess, said: “Given the maximum concentration in the chemical formulation and the amount of product applied in leather manufacture, it is highly unlikely that the reporting threshold of 0,1 percent (w/w) of cyclosiloxane in leather will be exceeded if the chemical formulation is used according to our recommendation.”

In June, the European Chemicals Agency (ECHA) included the chemicals D4 (octamethylcyclotetrasiloxane), D5 (decamethylcyclopentasiloxane) and D6 (dodecamethylcyclohexasiloxane) to the EU REACH Candidate List for Substances of Very High Concern (SVHC). The notification requirement for substances, mixtures or articles containing D4, D5 or D6 has been set at a concentration of 0.1 percent (w/w). Kleban said: “In many cases, silicone based products contain unavoidable amounts of D4, D5 and D6, and these substances are not intended components of the product.” “In our opinion, polymer silicones can be used safely, if they are used as intended. Furthermore, in our experience, they represent an economical, sustainable and safe chemical product class. After all, we want to offer our customers safe, high-quality products,” he added.

From *Trade-Arabia New Service*

## Lanxess targeting new car interior odour

China’s automotive industry has made car interior air quality improvement a top-priority issue. The country’s New Vehicle Interior Air Quality (VIAQ) policy aims to harmonize the testing of harmful substances in car interiors and reduce their side effects.

Leather odour results from a complex mixture of multiple chemicals, and can intensify and change over time. Within leather products, these chemicals known as Volatile Organic Compounds (VOCs) may reach levels that are potentially harmful to humans. Today more than 70 known substances are released by leather, and their detection, localization and analysis is extremely problematic. This hampers efforts to improve odour by reducing emissions of selected compounds, especially when working within the confined space of an automobile’s passenger compartment. Additionally, improvements in sustainable processes such as recycling systems and water-efficiency in leather production can negatively impact odour ratings. The safest strategy is the reduction or avoidance of molecules contributing to smell, such as acetaldehyde. Hence, the decision by several countries to impose concentration limits on these components.

Talking at a Technical Luncheon held during the All China Leather Exhibition (ACLE) in Shanghai last Autumn, Dr. Volker Rabe, Head of Technical Product Management for Tanning Technology at LanXESS, presented the latest findings on VOCs and the minimization of odours from leather vehicle components. He also introduced LanXESS' latest solutions to reduce leather-related VOC-Acetaldehyde and odour issues in car interiors.

A few of LanXESS' solutions include Tanigan SR-CO1 and Levotan RV, which are chemicals that reduce acetaldehyde and VOC values in leather. According to Rabe, applying Tanigan SR-C01 on wet blue and/or crust can reduce the acetaldehyde that is generated by the decomposition of proteins. Meanwhile, Primal Fleshcoat AR-2 emulsion applied in finishing further reduces emissions and brings the volatile compounds to a minimum.

From *aplf.com*

## Lanxess unveils trends for Spring/Summer 2020

In January 2019, Lanxess will present a specially made collection with patterns that "reflect the future leather fashion in terms of appearance, surface touch and overall look". The leather chemical manufacturer has unveiled the description of the four broad themes for the season; Profumo d'Estate, Instantanee all'Aperto, Balconi Sul Mare and L'Estate Sta Finendo, with the corresponding colour cards.

The sample collection is also to contain recipes and practical processing suggestions for tanners.

An overview with descriptions and trends is available to see here

From *lanxess.com*

## Footwear Sourcing Shifts in Line With US-China Trade War

The trade war between the U.S. and China has had a negative impact on U.S. footwear imports from the top supplier.

With 10 percent tariffs imposed on China by the Trump administration, including on some leather raw materials, plus a threat of another 25 percent tariff hike in 2019 that hasn't yet come off the table, companies are seeking alternative sources and the latest data from the Commerce Department's Office of Textiles & Apparel (OTEXA) shows where they're turning. "Companies are really pulling back from China and footwear is much more exposed than apparel so far from the tariffs," said Nate Herman, senior vice president of supply chain at the American Apparel & Footwear Association. "Everyone is trying to get out of China as quickly as they can.

For the year through October, U.S. footwear imports from China fell 0.4 percent to US$11.91 billion worth of merchandise compared to US$11.96 billion in the same period in 2017. Other Asian nations and European suppliers picked up much of the slack. Among Asian countries, imports from Vietnam rose 14.4 percent to a value of US$5.17 billion, while Indonesia's shipments to the U.S. were up 4 percent to US$1.3 billion. Cambodia's grew 28.8 percent to US$279.07 million and imports from Bangladesh advanced 18.4 percent to US$109.67 million. "Cambodia has climbed out of nowhere," Herman said, adding that Indonesia, Ethiopia and Myanmar "are coming up fast." Traditional European footwear manufacturing countries also gained ground this year, with Italy up 12.6 percent to US$1.25 billion, Spain rising 4.6 percent to US$203.59 million, and Germany increasing 25.6 percent to US$133.45 million. Imports from Mexico were also on the rise, increasing 25.8 percent to US$383.98 million. On the other side, Brazilian imports fell 9.7 percent to US$155.19 million, as the country's economy continues to struggle.

Overall, the U.S. imported US$22.17 billion worth of footwear for the first 10 months of the year, an increase of 4.7 percent from the year-ago period. U.S. footwear exports were up 10.6 percent for the first 10 months of the year to US$465.14 million. Canada was the main recipient, with exports to the northern neighbour rising 1 percent to US$124.96 million, while exports to China nearly doubled to US$61.13 million worth of merchandise.

Source: *Arthur Friedman*

## Baseball gloves made from wagyu leather

Baseball gloves made with leather from Japanese black beef cattle bred in Miyazaki Prefecture — famous for its luxury wagyu beef — have attracted many fans, mainly among amateur baseball players, for their softness and distinctive fit.

A sporting goods company in Miyazaki city named Ballpark.com decided to manufacture the new product, named “Wagyu gloves,” in a bid to create a new local specialty utilizing high-profile Miyazaki wagyu beef, which is known nationwide for its delicious taste.

The major meat processing company Miyachiku has provided the skin of male beef cattle for the gloves. The leather is thin, light and its fibres are densely concentrated, characteristics that reportedly make durable, strong gloves that retain their original shape. The leather has a soft finish, due to the preservation of a sufficient amount of the oil originally contained in the skin.

From the *japan news*

## Leather promotion initiative gains momentum

Many stakeholders in the leather industry have been voicing the need to promote leather internationally in a coordinated way, with the aim of maintaining the perception of leather as a unique material, and reconnecting the younger generations with the value of leather. This view comes from Leather Naturally, an initiative to put forward the case of leather in the face of intense competition from synthetic leathers,

manufactured from non-biodegradable petrochemical derivatives, as well as growing pressure against the leather industry from groups such as Greenpeace and the animal welfare organization, PETA.

Leather Naturally has been urged by stakeholders to come up with a plan to positively highlight leather, and is set to implement a digital campaign. The organisation has created a multimedia platform that will engage with consumers around the world through social-media, emphasizing leather's attributes and strengthening the connection with consumers from Generation Z and Millennials with the aim of stimulating leather consumption.

Leather Naturally has already raised over 40% of the funds required for the five-year campaign, but still needs further support from the leather industry to reach the US$1,500,000 needed to get the campaign underway.

Hans van Haarst CEO of leather chemicals producer, Smit & Zoon commented, “We are convinced that cooperation in the leather value chain is needed to make it sustainable from an economic, environmental and social perspective. This campaign is a significant contribution to the industry needs. We will fund US$50,000 of this PR campaign, anticipating a high return for the industry. We strongly encourage others to join, instead of waiting for somebody else to take the initiative.”

Andreas Kindermann, CEO of Wollsdorf Leder added, “This year has shown that there is a lack of communication to young people. They are the customer of the future and our industry needs new ways of communication to reach out to them. This collaborative approach supports our industry, making leather the perfect material for the next generation by providing clear information and counteracting ‘fake news’.”

Support is also coming from different organizations across the sector. Recently, the member associations of GLCC – the International Council of Tanners (ICT), International Council of Hides, Skins and leather Traders Associations (ICHSLTA) and the International Union of Leather Technologists and Chemists Societies (IULTCS) – issued a release supporting the initiative and encouraging members to back the initiative.

From */www.aircraftinteriorsinternational.com*

## Venezuelan footwear sector ravaged by inflation

The Vice-President for the Economy, Tareck El Aissami confirmed a temporary occupation by the national government of 21 slaughterhouses, which had violated the agreed pricing policy. This measure will last 180 days and can be extended if necessary. The aim is to stop the flagrant abuses of pricing policy being committed on a daily basis by the owners of the abattoirs and ensure access to meat products for the Venezuelan population.

This measure is in response to irregularities committed by the owners of slaughterhouses after the government announced 100 days ago the cost structure of the meat industry as agreed with the owners. Retail meat prices are currently selling at almost ten times the agreed retail price.

El Aissami also requested the Attorney General’s office to initiate a criminal investigation to determine the responsibility of the owners of slaughterhouses for various crimes being committed in the meat industry. These crimes include diverting meat supplies to intermediaries to increase the selling price of meat products as well as extorting primary producers to pay in US dollars which he described as “economic blackmail”.  El Aissami guaranteed job security for the workers of those slaughterhouses being occupied and investigated, and stated that their wages will be provided by the national government.  "These measures will be taken to prevent meat from becoming a product of speculation

and resale and to ensure that it reaches the Venezuelan family", he concluded.

Reports from Venezuela say the footwear industry there is working at only 20% of its full capacity. The president of national footwear industry association Cavenal, Luigi Pisella, has said companies are finding it impossible to restock inventories because of high levels of inflation in the South American country. In recent comments to a national radio station, Mr Pisella said manufacturers faced a doubling or even tripling of the price of raw materials in a single month and were unable to buy in what they need.

As a result, he said the consumption of footwear in Venezuela has fallen from three pairs per person per year in 2012 to just 0.5 pairs now. He said this would correspond to a fall in the total number of pairs purchased by around 75 million pairs per year.

The most recent census put the population of Venezuela at around 31.5 million. With a similar level in 2012, footwear consumption nationally that year would have been 94.5 million pairs. And with the same level of population in 2018, current consumption rates would point to a total this year of under 20 million pairs.

From *footwearbiz.com*

## Decline in the volume and value of US hide exports continue

New figures released by the US Hide Skin and Leather Association (USHSLA) for the first ten months of 2018 show year-to-date exports of hides of 23.7 million cattle hides, bringing in export revenues of more than US$1.3 billion.

Compared to the same months last year, this means shipments are down by 6.7% in volume and by 19.7% in value.

Wet-salted hides have made up 19.6 million of the total volume exported, bringing in export revenues of US$939.7 million. These figures represent a fall of 4% in volume and of 24% in value compared to the figures for the January-October period in 2017. (20.3 m and US$1.2 billion)

In the case of wet blue exports, the latest figures show total shipments for the ten-month period of 4.1 million hides and revenues of US$418.8 million. This means a decline in volume of 20% and in value of 14%. (5.1 m and US$488.3 m).

From *leatherbiz.com*

## UK leather affected by Rules of Origin after Brexit

The UK Leather Federation (UKLF) says it has been in communication with the UK Department of Business, Energy and Industrial Strategy (BEIS) on the development of Rules of Origin (RoO) for export and imports after Brexit.

If the UK leaves the Single Market, it will have to negotiate new Rules of Origin (RoO) with the EU. “From our initial discussions, BEIS have concluded that leather will be heavily affected by revisions to RoO after Brexit. The calculated tariff wedge would be in excess of 2% of the value of exports by the UK leather sector, potentially putting significant pressure on margins”, said the UKLF adding that BEIS has sought to establish panels, with representation from across the sector to provide industry input into the Government’s understanding and negotiations.

The first of these panels took place in October and included representatives from across the leather supply chain. It served as an introduction to RoO and to establish how BEIS hopes to interact with

industry. “It is important that the view of the UK leather manufacturers, and all those in the leather supply chain, is understood by BEIS”, said the UKLF. Those who would like to be involved in the sector panel for the leather sector are invited to contact UKLF’s Director, Kerry Senior.

From *internationalleathermaker.com*

## Brazilian tanners take stock of higher volume of hides

Tanners in Brazil took receipt of 9.1 million cattle hides in the course of the third quarter of 2018, according to figures from the national statistics institute, IBGE. This figure represents an increase of 9.7% compared to the second quarter of this year. Compared to the third quarter of 2017, the new figure represents a rise of 4.3%.

States with the largest share of the national total were Mato Grosso with 17.4%, Mato Grosso do Sul with 12.6% and São Paulo with a share of 11.4%. Compared to the third quarter last year, cattle slaughter in Brazil rose by 3.7% during the three-month period to reach almost 8.3 million head.

From *leatherbiz.com*

## What’s new December 2018: papers added to the LASRA Library catalogue

### Screening of bacteriocin production from moderately halophilic skin isolates to inhibit moderately halophilic bacteria producing protease and lipase

*by P. Caglayan and M. Birbir*

Bacteriocins, produced from a wide variety of microorganisms to inhibit or kill different species of bacteria, have received increased attention in different industries. Hence, bacteriocins produced from moderately halophilic skin isolates were examined to demonstrate their inhibitory effect against enzyme-producing (protease or lipase) skin isolates. Eleven identified skin isolates, obtained from salted goat and sheep skins, were used as test isolates. Ten of these isolates (*Halomonas halodenitrificans, Halomonas halmophila, Salimicrobium salexigens, Gracilibacillus dipsosauri, Salinivibrio costicola subsp. alkaliphilus, Halomonas venusta, Planococcus rifietoensis, Marinococcus tarijensis, Halomonas eurihalina, Staphylococcus arlettae*) showed antimicrobial effect against each other.
Although *Halomonas halodenitrificans*, *Salimicrobium salexigens*, *Halomonas venusta* did not produce enzyme, the other isolates produced protease or lipase enzymes. While bacteriocin produced from *Halomonas halodenitrificans* was found to be effective against enzyme-producing *Gracilibacillus dipsosauri*, Planococcus rifietoensis and Halomonas eurihalina, bacteriocin of *Salimicrobium salexigens* was effective against enzyme-producing *Salinivibrio* costicola subsp. alkaliphilus, Marinococcus tarijensis and Halomonas eurihalina. Bacteriocin of *Halomonas venusta* was effective against enzyme-producing *Halomonas halmophila, Marinococcus tarijensis, Halomonas eurihalina, Idiomarina loihiensis and Staphylococcus arlettae*. The maximum bacteriocin production of these skin isolates was obtained at 37°C, pH 7.0, and 10% salt concentration. Antimicrobial activities of the bacteriocins against all test isolates were detected at 10°C-60°C, pH 6.0-8.0 and 3%-20% salt concentrations. Antimicrobial activities of all bacteriocins against test isolates were not detected after the treatment with proteinase K. Minimal inhibitory concentration (MIC) values of the bacteriocins against the test isolates were detected as 1/2, 1/4 or 1/8. Scanning electron micrographs of sheepskins showed that sterile bacteriocins of *Halomonas halodenitrificans*, *Salimicrobium salexigens*, *Halomonas venusta* may be used in leather industry to prevent the growth of protease and lipase producing moderately halophilic bacteria.

*JALCA* Dec 2018

## Tone in tone dyeing: attempt to use dye encapsulated silica nanospheres in leather dyeing

*by Sathya Ramalingam and Jonnalagadda Raghava Rao*

A commercial leather dye was encapsulated into silica by simple microemulsion technique and applied as dyeing agent in leather dyeing process. Comparative studies on the performance of free dye (non-encapsulated) towards encapsulated dye are evaluated. The resultant formation of nanospheres contain dye inside the silica matrix was investigated by UV-Visible, TEM (Transmission Electron Microscopy) and DLS (Dynamic Light Scattering) measurement. The confinement effect was identified by the formation of spherical particles of the silica through encapsulation. On whole the spectroscopic studies showed that the formed silica nanospheres are stable enough to utilize as dyeing agent in leather dyeing process. The performance of encapsulated nanospheres was evaluated by utilizing as dyeing agent for upper and garment leather processing. The dye entrapped inside the silica spheres had better affinity towards the leather as demonstrated by their uniform penetration throughout its cross section and its surface coloring. The dyeing properties of the encapsulated dye were appraised by color and fastness measurement. The results showed that the dyeing characteristics of the experimental leathers were greatly improved by using encapsulated dyes versus their control leathers. Hence the idea of supporting commercial dye on/inside polymeric silica substrate enriched the leather dyeing characteristics and provide the clue for any dye for any substrate.

*JALCA* Dec 2018

## Analyses of nitrogen metabolism functional microbial community in aerobic tanks of hydrolysis acidification and multistage aerobic process for tannery wastewater

*by Ding Shaolan, Tian Qianqian, Cao Kai, Li Hua and Yang Jianjun*

The actual tannery wastewater was treated by hydrolysis acidification and multistage aerobic process (A/O3). The growth status of microorganisms in three aerobic tanks was measured with the Biolog microplate method to reflect the ability of metabolizing nitrogen source. In the three aerobic tanks, the functional differences between different nitrogen source metabolism microbial communities in three aerobic tanks were compared and analyzed. The results of the present study have shown that when the concentrations of ammonium chloride and potassium nitrate were low, the metabolic activity of nitrifying bacteria was higher than that of denitrifying bacteria in aerobic tanks. With the increase of concentration of ammonium chloride and potassium nitrate, the metabolic activity of denitrifying bacteria was gradually increased, and gradually higher than that of the nitrifying bacteria metabolism. When the concentrations of ammonium chloride and potassium nitrate were 100 mg/L and 20 mg/L, and the concentrations of ammonium chloride and potassium nitrate were 150 mg/L and 30 mg/L, O1 has the best denitrification effect. However, when the concentrations of ammonium chloride and potassium nitrate were increased, nitrogen load was increased, the denitrification effects of nitrification and denitrifying microorganisms were fluctuated. And the diversity index analyses by five indexes showed that the metabolic capacity of microorganisms to carbon sources is good.

*JALCA* Dec 2018

## Closed-loop liming and chrome tanning systems in full-scale wet blue manufacture. Operational management, technical and environmental advantages

*by Richard Daniels, Jiasheng Su, Falei Zhang and Zhuangdou Zhang*

Closed-loop liming/unhairing and chromium tanning systems are now established for the full-scale manufacture of bovine wet blue leathers. The technology ensures full recovery and reuse of the concentrated used processing floats, and four major tanneries are now producing some 72,000 hides per week as high quality wet blue leathers from salted American, European and Australian wet salted hides. These are for their own use, sales, and contract tanning. In practice there are no discharges or washings for effluent treatment from either the liming/unhairing or the acid/salt pickle and chromium tanning processes. Accordingly, there is no chemical wastage from these two major stages within leather making. There are significant saving in processing chemicals – lime, sodium sulfide/hydrosulfide, salt, acids, chromium tanning agents and water too. The problems associated with treating waste waters from these two environmentally difficult stages are thus totally avoided. Based on independent on-site surveys within each of these four tanneries, this paper shows how the technology is managed in practice. In particular it shows how the process stabilizes within these processing loops, and how a continuous increase in neutral salts is avoided. *JALCA* Dec 2018

## The Leather Trades' Engineers of Massachusetts: Vaughn Machine Co. 1892-1904 Vaughn-Rood Machine Co. 1903-1905. Part 2

*by Lyons, Trevor*

The rise of a specific rival to the Vaughn Machine Co. is considered along with major changes in management at the internationally important leather trade engineer, based in Peabody, Massachusetts (MA), United States. By emphasising the essential role of George C. Vaughn in tanning machinery development, it establishes why a new contender – the Vaughn-Rood Machine Co., became a major challenger. It also reflects on the interesting account of how wrangles in the US Courts resulted in the transfer of patents and machinery designs, from the Vaughn Machine Co., to the Turner Tanning Machinery Co. Survival of the old established Vaughn business demanded a change from leather trade machinery into the expanding automotive sector. For a time this seemed to fill the void for the engineering concern. Demise however, soon followed. Subsequent to the brief history of the VaughnRood Machine Co., the paper concludes with the agreed takeover of this business, also by the Turner Tanning Machinery Co., and some of the later enterprises pursued by George C. Vaughn. *JSLTC* Nov/Dec 2018

## Mechanism of vegetable extracts on preventing the oxidation of chrome(III)

*by Ma Xingyuan; Yu Congzheng; Wang Rui; Ma Xiapeng*

To explore the mechanism whereby hydrolysable tannins and the monomers hydrolysed from hydrolysable tannins in preventing Cr(III) from oxidising into Cr(VI), we selected Valonia, Tara, plus monomers including gallic acid and ellagic acid as test samples to evaluate their complexing ability, reducibility, antioxidation ability and impact on preventing Cr(III) from oxidising into Cr(VI) as well as the relationship between their abilities and impact. With total phenolic value taken as a measurement basis, we took the equivalent quantity of every material based on its total phenolic value, and tested the effect on the same amount of Cr(III) and with the Folin-phenol method to total the number of the active phenolic groups, then we inferred the binding ability from the phenolic group activity. The complexation ability was determined by measuring the decrease of the phenolic value during a given interval in a system where we mixed every material with chrome powder and found the reducibility by using the absorbency method of K3Fe(CN)6 reduction, and analysed the antioxidation ability by DPPH. These abilities are major influential elements in preventing Cr(III) from oxidising into Cr(VI). The relationship between parameters was discovered. The main results were: generally speaking, that the complexing ability of these materials, in order from great to small, is in the order: ellagic acid, Tara, Valonia and gallic acid, which accords with their abilities to prevent Cr(III) from oxidation into Cr(VI) to a large extent. The

reducibility and antioxidation effect of these materials from large to small is in the order: ellagic acid>gallic acid>Tara>Valonia, and this has a positive affect on preventing Cr(III) from oxidation into Cr(VI) to quite a large extent, However, the order of reducibility and antioxidation doesn?t accord with the order of ability to prevent Cr(III) from oxidising into Cr(VI). *JSLTC* Nov/Dec 2018

## The relationship between the organoleptic properties of leather and the aggregate structure of collagen fibres

*by Ren Bianli; Fang Qi; Chai Yuye; Lan Yunjun; Zou Xianglong*

Samples of chromed sheep leather were prepared to establish the relationship between the organoleptic properties of leather and its structure after being retanned and oiled. The organoleptic properties and structure of them were characterized by stress-strain analysis, SEM and organoleptic test. The relationship was investigated from the point of fibre mobility. The results show that, when fibre bundles become thin and porosity increases, fibre mobility increases, as does softness, but tightness weakens. With the extent of fibre orientation decreasing, thickness increases, and smoothness decreases. Fullness is a special parameter related to leather thickness and fibre mobility . As collagen fibres have better motion capability when there is a decrease in the degree of orientation, fullness improves. *JSLTC* Nov/Dec 2018

## The rheological properties of grain leather broiler rabbits

*by Zapletal, P.; Bierowiec-Widorek, K.; Baleko, Jerzy; Czerniejewska-Surma, B.; Ochrem, A.; Maj, D.*

The studies examined the rheological properties of broiler rabbit grain leathers for leather gloves and shoes and determined whether they had the requirements defined by the standard. The study material included grain leathers of two groups of hybrid rabbits, 24 pieces each: Group I: Belgian Giant Gray x Burgundy (BOS x BU), Group II: Belgian Giant Gray x White New Zealand (BOS x BNZ). Broilers rabbit leathers were characterised by high values of strength parameters in static tests. Leather of BNZ x BOS hybrids processed for both gloves and footwear, had higher values of the tested features. However, they did not differ significantly from the results obtained for BOS x BU leathers. The values gave indications for both tests higher than the requirements of the relevant standards. The rheological and organoleptic properties of the rabbit broiler leathers tested proved that they can be used not only for gloves, but also for shoe uppers. *JSLTC* Nov/Dec 2018

## Synthesis of an amphoteric polymer auxiliary agent and its application to chrome-free leather

*by Luo Jianxun; Feng Yanjuan*

In order to reduce the disadvantages of chrome tannage, chrome-free tannage was developed by many technologists and tanneries. However, because of the structures and charge of the tanning materials in the chrome-free tannage, the absorption rate of the chrome-free leather for anionic dyestuffs, re-tanning agents and fatliquors is lower than that of the chrome-tanned leather. Therefore, in order to improve the absorptivity of the chrome-free leather for these products, an amphoteric polymer auxiliary agent was synthesized with methyl-acrylic acid, sodium methylallyl sulfonate and dimethyl diallyl ammonium chloride (DMDAAC) by free radical copolymerization using ammonium persulfate at 80°C for 3 hours. The molar ratio of methyl-acrylic acid, sodium methylallyl sulfonate and dimethyl diallyl ammonium chloride was confirmed to be 1.0/0.3/ 1.0. The structure of the amphoteric polymer auxiliary agent was characterized by FTIR, 1H-NMR, 13C-NMR. The charge and properties of the solution of the amphoteric polymer auxiliary agent were characterised. Applied results of the amphoteric polymer auxiliary on the

absorption of chrome-free leather for dyestuff and fatliquor, show that it has strong auxiliary absorptive capacity and the absorptive rate of dyestuff and fatliquor is more than 96%. *JSLTC* Nov/Dec 2018

## Development of reference materials for inorganic elements in leather powder

*by Qian Wang; Chao Wei; Liandi Ma*

Abstract Three reference materials for As, Cd, Co, Cu, Hg, Ni, Pb and Sb – 8 inorganic elements in leather powder were developed with relatively low, middle and high concentrations. The reference materials were prepared by adding an appropriate concentration using industrial process. The concentration range of the three levels is within the ± 200% of the limited value in the China statute Safety Technical Specifications for Children?s Footwear (GB 30585-2014).1 By using 16 units with duplicate analysis, it was shown that the samples were enough to demonstrate the homogeneity of these candidate reference materials. The statistical results from the stability test, also showed no significant trends in both short-term stability test for one week at 40°C and long-term stability test for 23 months. This set of reference materials, were used for more than two certification methods – including isotope dilution inductively coupled plasma mass spectrometry (ID-ICP-MS), inductively coupled plasma mass spectroscopy (ICP-MS) and inductively coupled plasma optical emission spectroscopy (ICP-OES). The combined relatively standard uncertainties of the reference values were estimated by considering the uncertainties of the analytical methods, homogeneity and stability. The range of the expanded uncertainties of all the elements is from 3% to 5%. The certified reference materials (CRMs) are primarily intended for use in the calibration and validation of procedures for the determination of inorganic elements in in leather or similar leather samples. *JSLTC* Nov/Dec 2018

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