BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

चर्म, खाल, और चमड़ा — शब्दावली

(*IS 1640 का दूसरा पुनरीक्षण*)

Draft Indian Standard

Hides, Skins, and Leather — Vocabulary

(*Second Revision of IS 1640*)

(ICS 59.140.20)

Leather, Tanning Materials and Allied Products Sectional Committee, CHD 17	**Last Date for Comments: 29th September 2024**

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FOREWORD

(*Formal clause will be added later*)

This standard was first published in 1960 and revised in 2007. In first revision, glossary of terms of most of the indigenous terms in use in the Indian hides, skins and leather trade, together with their synonyms and common terms in vogue were included or rephrased. However, the glossary of terms was primarily related to hides, skins and leather. Conversely, terms relating to footwear, chemical and other general trades pertaining to proprietary and patented items were not included.

In this revision, existing terms have been harmonized with the ISO 15115 'Leather — Vocabulary' to ensure consistency, alongside introducing new terms. Similarly, a few terms which have lost relevance and no significance have been deleted.

This standard is intended primarily to cover the technical definitions of terms, and it may not necessarily include all the legal implications of the terms.

Draft Indian Standard

GLOSSARY OF TERMS RELATING TO HIDES, SKINS AND LEATHER

(*Second Revision of IS 1640*

1 SCOPE

This standard defines the terms relating to hides, skins, processing and prevailing in the Indian leather sector

2 TERMINOLOGY

A

2.1 Abrasion Resistance

Ability of the leather to withstand surface wear from rubbing, chafing and other frictional forces.

2.2 Acid Number

The quantity of base, expressed in milligrams of potassium hydroxide that is required to neutralize the acid constituents present in one gram of oil, fat, wax and fatty acid.

2.3 Acid Soaking

Accelerated soaking process of dry cured hides and skins by adding acid.

2.4 Acrylic Syntan

Essentially a polymer of acrylic and/or Methacrylic acid(s) with a small amount of an agent like sodium alginate in corporate into the polymer.

2.5 Ageing

Keeping or resting in a heap or pile for a certain time with a view to maturing or seasoning.

2.6 Air-Dried Hides

Hides cured by exposure of the flesh side to mild rays of the sun until they dry.

2.7 Airless Spray

Spraying with hydraulic pressure instead of compressed air.

2.8 Air Speed Drying

Very rapid air drying in which relatively high temperatures and controlled humidity are used.

2.9 Albumins

A kind of simple corpuscular proteins containing sulphur, soluble in water and coagulate on heating (for example, egg white, which is known as egg albumin).

2.10 Alcohol Precipitation Value of Tannin Solution

A value which gives a measure of the total soluble matter in a tannin solution which may be precipitated by absolute alcohol.

2.11 Aldehyde Leather

White washable leather prepared usually from sheep or lambskin splits or degrains and tanned with formaldehyde or other aldehydes.

2.12 Alkaline Bate

Bate that has optimum activity in the *p*H range of 8 to 8.5.

2.13 Aluminium Tanning

A process of Tanning with basic aluminium sulphate stabilized with a masking agent like citrate.

2.14 Ammunition Leather

Vegetable, chrome and combination tanned leather curried and finished for making military boots (Example. 'Army Grain' and 'Russet'),

2.15 Amphoteric Syntan

Aliphatic amines condensed with no volaks using Mannich reaction in organic solvents.

2.16 Angle of Weave

The general orientation of the hide fibres with the grain layer, making an angle which varies from the vertical to the horizontal weave.

2.17 Angular Spray

Spraying of finishes at different angles to produce a two-tone effect; also known as Shadow spray.

2.18 Aniline Dyes

Dyes synthesized from coal-tar products also known as synthetic dyes.

2.19 Aniline Finish

Basically a dye based finish with or without a trace of organic pigments.

2.20 Aniline Leather

Leather whose natural grain is clearly visible either without a surface coating or with a non-pigmented surface coating.

2.21 Anionic Fatliquor

Emulsion of fats and oils in which the colloidal droplets of oil and fats are negatively charged, for example, fat liquor made with soap solution.

2.22 Antelope Finish, Suede

Lambskin, goatskin or calfskin sueded and finished to resemble antelope, a kind of deer.

2.23 Anti-blushing Agent

A material added to a lacquer to prevent precipitation of one or more of the solid constituents of the lacquer (*see* also 'Blushing').

2.24 Antique Grain

A surface pattern of markings or creases, usually irregular, in which the hollows or valleys are given a contrasting colour to produce a two-tone or two-colour effect. The creases are produced by embossing, boarding or other similar means.

2.25 Antique Leather

Leather of rough, irregular and wrinkled grain produced by pleating the skins and creasing them lightly in sacks or nets and treating them in strong tan solutions. Antique leathers are dyed to multi-coloured effects. Generally used for furniture and automobile upholstering.

2.26 Apron Leather

Leather made from heavy sheep skins or cattle hide splits and used in making apron, or dress for the forepart of the body.

2.27 Aqueous Finishes

Leather Finishing agents and additives dispersed in water medium.

2.28 Army Grain

Embossed, grained leather used for military leather goods (*see* also 'Ammunition Leather' and 'Russet').

2.29 Astringency

It is the property of contracting the tissues shown by many chemicals including tannins, but in its generic sense it refers to the peculiar sensation of contraction or constriction on the tongue produced by substances containing tannins.

NOTE — A numerical classification of the various tannins and vegetable tanning materials according to their degree of astringency is not possible, since a number of factors are involved. The astringency appears to be a function of the molecular size of the tannin, the proportion of tannin to total solubles (degree of purity), the hydrogen ion concentration of the solution, the electrical charge of the particles, nature of anions and neutral salts present (acid-salt ratio), temperature, and tannin content of the solution.

2.30 Automobile Leather

Leather used for upholstering motor car cushions.

2.31 Avaram, Tarwad or Tawar

A shrub, *Cassia auriculata* Buch. Ham., fam. Leguminosze, growing in Southern, Western and Central India. The dried avaram bark has a tannin content of about 18 percent and about 10 percent of soluble non-tans. It is the most valuable tan stuff found in India and is extensively used in Tamil Nadu and Maharashtra for the production of East India Tanned leather.

B

2.32 Babul Bark, Kikar

The babul or kikar tree Acacia arabica Wild., fam. Leguminosaz; the bark of this tree is the most important tanning material of northern India with average tannin content of 12 percent

2.33 Bag Hide

A leather produced usually from cow hide by vegetable tanning for making various kinds of bags, trunks, suitcases and other travel goods.

2.34 Bag Tannage

Age old native tanning process of India in which delimed hides after pre-tanning lightly in light tan liquor are sewn up as bags of which one end is open.

2.35 Band Knife Splitting Machine

Splitting machine fitted with a band knife used for splitting the hides and skins laterally into different layers.

2.36 Barbed Wire Scratches

Scratches in hides and skins caused by protruding points of barbed wire.

2.37 Barkometer — Type of hydrometer used in tannerie

Note —The correlation between specific gravity and barkometer reading (Bk) is as follows

Sl No.	Specific gravity	°Bk
(1)	(2)	(3)
i)	1.0	0
ii)	1.020	20
iii)	1.120	120

2.38 Barometer

A modified hydrometer used for measuring the density of tan liquors.

$$°\text{BK} = (spgr^{-1}) \times 1\,000$$

2.39 Bark Tanning

The process of tanning hides and skins with vegetable tanning materials.

2.40 Baseball Leather

Leather used for covers of base balls. The better grades of balls have covers of alum-tanned horse hide. Some cheaper grades are made up of kip and sheepskins.

2.41 Basicity of chromium

Number of hydroxyl groups borne by a chromium unit as a percentage fraction of the same present in chromic hydroxide.

2.42 Basicity, Percentage

The number of hydroxyl groups borne by a chromium unit as a percentage fraction of the same present in chromic hydroxide. Also known as Schorlemmer basicity and Freiberg basicity.

2.43 Basicity, Proctor's

The amount of sulphate in grams associated with 52 grams (1 gram-atom) of chromium in a chromic salt used for tanning.

2.44 Basification

Mild alkali treatment to ensure completion of tanning

NOTE — Treating the mineral tanned stock with a view to forming a large aggregate of metallic compounds and enabling reactive groups of skin to complex with tanning material.

2.45 Basil

Undyed and unfinished vegetable tanned sheep or lambskin, of comparatively large size.

2.46 Bastard

A term applied to sheep having hair. There is no biological verification of the notion that sheep and goats will interbreed producing a sheep with hair.

2.47 Bate

Enzymes mixed with an inert carrier used to selectively remove unwanted constituents of hides and skins.

2.48 Bate Pricks

Pin holes visible on over bated hides and skins.

2.59 Bate Burns

Skins damaged by too violent an action of bacterial bates.

2.50 Batik Effect

Dye designs made by dyes diffusing through the cracks on a fabric coated with a sizing material (i.e. materials which can be removed later on by washing starch or wax). Cracking can be brought about in a variety of ways such as staking, dry milling, embossing, etc.

2.51 Bating

Removing unwanted interfibrillary proteins by treating the hides and skins with bates to obtain soft and pliable leather with a smooth grain surface.

2.52 Baume

Liquid density measurement which can be converted to specific gravity

Note

1 Typically used to calculate the concentration of the process solution, for example salt solution, using the following formulae:

For liquids heavier than water, specific gravity = 145/(145 − n) at 15 °C (60 °F);

For liquids lighter than water, specific gravity = 140/(130 + n) at 15 °C (60 °F).

where n is the reading on the baume scale abbreviated as °Be.

2 Be is equivalent to 6.9 °barkometer reading, Bk.

2.53 Beam

Convex wooden slab sloping downward from about waist height over which a hide is placed for unhairing, trimming off excess flesh and ragged edges, and scudding by hand knife.

2.54 Beam House

Processing section of tannery in which raw stock is washed, soaked, limed, unhaired, bated and prepared for tanning.

2.55 Beam House Operations

Processing stages before tanning viz. soaking, liming, unhairing, fleshing, deliming, scudding, bating and pickling.

2.56 Beaver Lamb

Sheep or lamb skin with short fine wool, which has been dressed with the wool on, dyed and finished by a process giving a weather-resistant straightness and brightness to the wool lustered by ironing with formaldehyde on a rotary iron.

2.57 Bellows Hide

Curried, flexible and air-proof leather made from split hide, used for making bellows.

2.58 Belly

Part of hide or skin; Lower or bottom part of covered animal skin or hide, usually less valuable than other portions of leather. While flaying, hides are slit along the centre line of the belly so that when the hide is taken off.

2.59 Belting Butt

The butt portion of selected cattle hide that has been specially tanned, curried and dressed to produce strong, flexible leather with minimum stretch, suitable for the manufacture of transmission belting.

2.60 Belting Lace

Chrome tanned back, about 2.5 mm thick, heavily dressed with natural grease, suitable for cutting into strips for the purpose of joining transmission belting.

NOTE — The oil-treated back is generally known as ‘Helvetia leather’.

2.61 Belting Leather

Leather for machine belting generally made from the butt portion of high grade cattle hides.

2.62 Belt Leather

Leather used for waist belts and considered a subclass of fancy leather. Usually made from cattle hides, sheep and goat skins.

2.63 Bend

Half of a hide with the shoulders and belly portions trimmed off. It is the best portion of the hide. Bends of thick hides are used for making soles of boots and shoes, machine belting, etc.

2.64 Binder

Film-forming material, usually polymeric, used to adhere pigment particles and additives for coating the surface of the leather.

2.65 Bleaching

Lightening the colour by suitable chemical treatment.

2.66 Bleaching of vegetable-tanned leather

Removing oxidized tannins and insoluble materials from the surface layers of leather, in order to prevent cracking of the grain and to lighten the colour.

2.67 Bleaching Syntan

Auxiliary syntan which when complexed to chrome in a chrome leather makes its blue colour lighter.

2.68 Blended Tannin Extracts

Mixed extracts like myrobalan and Goran or mangroves, or myrobalan and cutch, etc, used to attain optimum yield and desired quality in leather (*see* Tanning Extract).

2.69 Blisters

Damages on skins usually caused by putrefaction as a result of bad or insufficient curing, preservation or sun-drying.

2.70 Block Printing

Printing using separate wooden blocks having curved designs for each colour. The total appearance will be the cumulative effect of all the colours applied.

2.71 Bloom

A light-coloured deposit of ellagic acid appearing on the grain surface of leather tanned with certain pyrogallol tannins, such as myrobalans, valonia, and divi-divi.

2.72 Blushing

A milky opalescence which sometimes develops on leather as a film when lacquer dries up rapidly. This may be either due to the deposition of moisture from the air or precipitation of one or more of the solid constituents of the lacquer or combination of both.

2.73 Boarding

To strike a grain pattern on the leather. This was done formerly by working the leather in a suitable manner with a cork faced wooden board from which the operation has derived the name. It can also be achieved by machines. The operation is also known as graining.

2.74 Boarded Leather

Leather grained or creased up by working with a cork faced board. This working is called boarding or graining because it produces different patterns on the grain side of the leather. It also softens the leather considerably. Boarding is also done by boarding machine consisting of cork or rubber covered rollers.

2.75 Boil test

Test of a piece of fully hydrated leather to check whether there is any shrinkage after placing in boiling water for 2 min to 3 min

Note — When the leather retains the original area, chrome tanning is considered complete.

2.76 Book binding Leather

Leather generally made from calf, sheep and goatskins and used for book binding.

2.77 Bound Organic Substance

The difference between 100 and the sum of the values of the percentage of volatile matter, water insoluble ash, solvent extractable substances, hide substances and water soluble substances in a leather. It is expressed as percent by weight of leather.

2.78 Box calf leather

Full chrome tanned calf leather, black or coloured, smooth or boarded, with a proteinic finish.

2.79 Box Finish

The finish in which the leather is glazed and boarded two-way, once from neck to butt and then from belly to belly.

2.80 Box Grain

The two-way boarding of box finish which produces fair, square shaped creases on the grain surface of the leather.

2.81 Box Sides

Leather manufactured from cattle hides by the chrome process and finished with box grain. The hide is split into two halves along the spine, each of which is called a side.

2.82 Branded/Brand Marked Hides

Hides with marks of scars caused by drawing various figures on the body of cattle with a red hot iron.

2.83 Bran Drench

A fermented infusion of wheat bran extensively used in tanneries in earlier times for deliming. It opens up the pores of the skin besides dissolving the lime in the pelt.

2.84 Brazil Wax

Also called carnauba wax and obtained as an exudation from the leaves of the wax palm *Coperniia cerifera* Mart., *fam*. Palmae.

2.85 Break of Leather

Surface wrinkles formed when the leather is bent, grain inward

Note — Adjectives commonly used to describe this characteristic are “tight”, “fine”, “loose”, “coarse”, “pipey” and “flanky”. Generally, the finer the wrinkles or grain break, the better the quality of the leather.

2.86 Bridle Leather

Strong, flexible type of harness leather of reasonably uniform thickness with a plain finish and a close shaved flesh. Made from ox or cow hide, vegetable tanned and curried.

2.87 Brined, Dry

Hides or skins treated with brine and dried or dry salted.

2.88 Brined, Wet

Hides and skins treated with brine and kept wet or wet salted.

2.90 Bronze Leather

A type of leather which is purposely finished with a bronze appearance.

2.91 Bronzing

Excessive concentration of crystallized dyestuff on the surface of the leather tending to give a metallic sheen. Bronzing is a dichroic effect produced by light reflected from the surface of the dyed leather. This happens when a spot has a different refractive index from the environment. Bronzing effect is obtained when leather becomes brown on exposure to sun.

OR

Making leather brown by exposure to the sun or making it shine with a metallic lusture.

2.92 Bruising

Softening leather by flexing grain outwards.

2.93 Brush Coat

The second coat of varnish applied in finishing patent leather.

2.94 Brush Colouring

The application of dyestuff to leather with a brush or swab, the leather being laid on a table. Also called table dyeing.

2.95 Brush-Off Effect

Brushed appearance to obtain contrasting shades of base coat and top coat.

2.96 Brushing Machine

A machine to sweep or clean with a brush; a scouring machine.

2.97 Buck

Actually, leather from the skins of a male deer. But nowadays, the term is applied to suede shoe upper leather, dressed and finished in the same way as real buck skin though not made from deerskin.

2.98 Buffalo Hides or Buff-Hides

The skins of a buffalo, *Bos bubalus*.

2.99 Buff Calf

Leather made from the skin of a young or immature buffalo.

2.100 Buffed Leather

Leather from which the top surface of the flesh side has been removed by an abrasive or bladed cylinder.

2.101 Buffing

Abrasive mechanical treatment to the grain or flesh surface of the leather

Note — *See* also snuffing.

2.102 Buffing Slicker

Hand slicker used for removing the coarse fibres of the flesh side of leather in the manufacture of russet and waxed leather.

2.103 Buff-Sole

An abbreviation for sole leather made from buffalo hide.

2.104 Burnishable Leather

Leather which will develop a shiny darkening appearance on rubbing or polishing.

2.105 Burnishing

Polishing by machine to give the shoe upper a bright, glossy finish. On better grade shoes, the sole and heel edges are washed and burnished.

2.106 Burring

Cleaning sheepskins with wool on.

2.107 Burst strength

Force required to completely rupture the full thickness of the leather test pie~~ce~~.

2.108 Butcher/Flay Cuts

Cuts or gashes in hides and skins caused by butchers while flaying.

2.109 Butt

A roughly rectangular part of a hide representing the part covering the back and upper regions of animal. The butt is the best portion of the hide being the thickest and most compact in structure.

2.110 Butt Split

The flesh layer obtained by splitting the butt by a splitting machine.

C

2.111 Cabretta

Skins of hair sheep or bastards. These have no wool, but straight hair like a goat. They produce a tough and fine leather suitable for gloves, shoes and roller skins for mills.

2.112 Calcium Soap

In leather processing, soap produced by the combination of fatty acids and lime. In the liming of hides and skins, lime acts on the natural grease of hides and skins and gives a calcium soap which is mostly removed from hides and skins by the process called scudding.

2.113 Calf Leather

A leather made from the skin of a young or immature bovine animal

2.114 Calf Skin

Skin of immature meat cattle. Cattle hides below a certain weight are classed as calfskins.

2.115 Calf Split

Split of a calfskin or the flesh layer of a calfskin.

2.116 Calf, Waxed

Vegetable tanned calf leather curried and finished on the flesh side with a wax composition.

2.117 Capeskin or Cape Leather

Term commonly applied to all glove and garment leathers made from sheepskins with the natural grain retained especially from South African hair sheep.

2.118 Captive Bolt

A pistol used as an alternative to the pole axe or knife for stunning, while slaughtering cattle. When fired, a plunger or bolt in the barrel penetrates the brain.

2.119 Card Leather, Card Clothing Leather or Carding Leather

The three terms denote the same material. It is a sheet of leather, one surface of which is covered with bent steel pins. It is used to cover the rollers of carding machines used for opening up raw wool fibres.

2.120 Carpincho Wax — *See* 'Brazil Wax'.

2.121 Case-Hardening

Defect due to high fixation of tannins on the surface at the initial stage itself preventing further diffusion of tannin into the skin/hide matrix.

Or

Defect due to rapid drying of green hides and skins during preservation or due to rapid drying of leathers after tanning preventing drying of inner layers of hide/skin or leather.

2.122 Case Leather

Leather used for making leather cases. Similar to bag hide leather and strap leather.

2.123 Castor Oil

Yellow to yellowish brown oil expressed from the seed kernels of Ricinus communis Linn. fam. Euphorbiaceae used as such or as a sulphated oil (Turkey Red Oil), in leather manufacture.

2.124 Casualty calf — Still born calf

2.125 Catechu, Cutch Tree or Khoir

Reddish brown dried extract of the heartwood of *Acacia catechu Willd., fam. Leguminosze*. With average tannin varies from 57 percent to 59 percent. Catechu extract is also used as a mordant in leather dyeing.

2.126 Catgut

Tough cord obtained from the intestines of cattle and sheep and used for strings of musical instruments, tennis rackets and for sutures.

2.127 Cellulose Extract

Ligno-sulphonic acid obtained as a by-product in certain processes of paper manufacture and marketed for use in tanning as sulphite Cellulose.

2.128 Cementing Substance

A well defined mass of substance uniformly distributed throughout the dermis of hides and skins composed of gluco-proteins or mucins containing some glucose or sugar in the molecules. It is insoluble in water but is only very slightly soluble in dilute solutions of neutral salts; is digested by alcohol, trypsin and pepsin; and readily dissolved in weak solutions of alkali, such as lime liquor. The bating process helps to make the final leather soft by the removal of this substance from the pelt.

2.129 Chamois

Leather made from the flesh split of sheepskin or lamb skin, or from sheepskin or lamb skin from which the grain has been removed by frizzing, and tanned by processes involving the oxidation of marine oils in the skin, using solely such oils (full-oil chamois) or first an aldehyde and then such oils (combination chamois)

NOTE

1. Also leather made from the skin of a mountain antelope or chamois, but such leather is rare.
2. In German language this term is also used to define chamois for clothing made out of deer skin.
3. Chamois are also made out of goatskins.

2.130 Cheeking

Reducing the thickness of heads of unhaired skin by splitting.

2.131 Chestnut Extract

Tannin extract made from the wood of either the European chestnut, *Castanea satiua Mills*. or the American chestnut, *Castanea dentata, Borkh., fam. Fagacae*. In the solid extract (in block or powder form), the tannin content is generally from 56 to 76 percent (non-tan, 5.5 percent to 9.5 percent) and the liquid extract from 29 percent to 49 percent according to concentration (non-tan, 5 percent to 10 percent).

2.132 Chevrette

The skin of a young goat which is being, or has been, recently weaned, or the skin of an immature goat, or leather made there from. Light weight goatskin or heavy kidskin is sometimes termed ‘chevrette’. In Germany the term ‘Heberling’ is used.

2.133 Chrome Exhaust Aids

Bidentate complexing agents (for example, dicarboxylic acids like adipic acid), which can link, up with two different complexing units and help in high fixation of chrome.

2.134 Chrome-free leather

Hide or skin converted to leather by a tanning agent free of chromium salts, where the total content of chromium in the tanned leather is less than or equal to 0,1 percent (mass of chromium/total dry weight of leather).

2.135 Chromed Hide Powder

In general terms, hide powder treated with predetermined quantity of chrome alum solution, washed, filtered and squeezed to contain about 75 percent moisture.

2.136 Chrome Liquor

Solution of basic chromic salt, usually basic chromium sulphate, used in chrome tanning.

2.137 Chrome Re-tan — Leather which has been first chrome tanned throughout its thickness and subsequently tanned with vegetable and/or synthetic tanning agents.

2.138 Chrome Sole Leather — Sole leather of greenish-blue colour produced by chrome tanning and stuffed with stearin, paraffin wax, rosin and other materials to render it firm and waterproof.

2.139 Chrome Syntan

Auxiliary syntan complexed with chrome.

2.140 Chrome Tanning

The process of tanning hides and skins with basic salts of chromium sulphate.

2.141 Chrome-tanned leather

Hide or skin converted to leather either by treatment solely with chromium salts or with chromium salts together with a small amount of some other tanning agent, used merely to assist the chromium tanning process, and not in sufficient amount to alter the essential chromium tanned character of the leather.

2.142 Chrome Tanning Extract

Solid extract of chrome tanning salts mostly in powder form.

2.143 Chrome Tanning Salt

Green crystals of a chrome salt, prepared by the reduction of sodium bichromate and sulphuric acid with a reducing agent.

2.144 Chrome Washers

Washers used for ginning rollers made from chrome leather.

2.145 Chromic Oxide Content of Leather

The quantity of chromium compounds found in leather, calculated as chromic oxide.

2.146 Chroming

Treating hides and skins with chrome liquor for tanning.

2.147Clearing Coat

Making the grain surface free from greasiness by brushing the surface with a weak solution of lactic or acetic acid or with ammonia. Also known as “Clearing the Grain”.

2.148 Cloak Hide

Flexible leather, printed with a long or oat grain, made from vegetable tanned split cattle hides of suitable thickness and curried to contain sufficient grease to render it suitable for saddlery and military equipments.

2.149 Clothing Leather

Leather used for making leather coats and breeches. Leather coats are made chiefly from sheepskins tanned either with or without the wool.

2.150 Coated and coated split leather

Leather and split leather where the surface coating, applied to the outer side, does not exceed one third of the total thickness of the product but is in excess of 0.15 mm.

2.151 Cod Oil (British Cod)

British cod oil is the oil derived from the livers of a variety of fish including shark and cod widely used for making sulphated oils.

2.152 Cod Liver Oil

Yellow brown oil obtained from the liver of the cod fish.

2.153 Cohesion

The amount of water which collagen or gelatin takes up under any given conditions is controlled by the balance between two opposing forces, one the force of osmotic pressure which causes water to pass into the protein and the other the resistance of the protein to the distension caused by the entry of water, conveniently termed as the cohesive force of the protein.

2.154 Cold Crack Resistance

Resistance of leather finish to crack and peel when subject to bending/flexing under a temperature not exceeding −5 °C.

2.155 Cold Sweat

A method of depilation of skins kept in a damp sweat pit until the mucous matter connecting the epidermis with dermis decomposes, thereby loosening the hair without injuring the true skin. In the cold sweat process, the temperature is not raised.

2.156 Collagen

Protein contained in connective tissue, cartilage and bones, the chief protein of raw hides and skins.

2.157 Collar Back

Harness leather in the form of a back, usually of good selection, curried and having a thickness of 4 to 5 mm.

2.158 Collar Leather

Leather used for covering horse collars. It is made of very light cattle hides of full thickness or of cattle hide splits.

2.159 Colloidal Tanning

The name applied to a process of vegetable tanning in which either a colloidal substance is added to the tan liquor or the hides are previously treated with it. Such substances avert the production of drawn grain or case-hardening even if comparatively strong and astringent liquors are used at the first stage of tanning.

2.160 Colour Coat

Finishing coat coloured with either dye or pigment or both.

2.161 Colour Fastness

The ability (of leather) to retain its dyes and colour without changing or fading with wear or storage.

2.162 Colour Matching

Composing a colour using a mixture of colorants to match a given colour.

2.163 Colour Measurement

The measurements of intensities of colour which are components of the colour on hand using either the so-called X, Y, Z or L, a, b system.

2.164 Combination Oil Tannage

A process of tannage in which the skin is first tanned with formaldehyde and subsequently treated by oil (*see also* ‘Oil Tannage’).

2.165 Combination Syntans

Phenolic syntans of medium molecular weight and medium OH:SO_3H ratio used as pre-tanning agents and agents for dispersing vegetable tannin sludges.

2.166 Combination Tannage

Tannage where the leather is tanned with more than one tanning agent, chrome-vegetable [chrome-retan, vegetable-chrome (semichrome)], alum-formaldehyde, formaldehyde-oil, etc.

2.167 Combing Leather

Soft mellow and tough leather from steer hides, heavily stuffed with grease and usually hand boarded or otherwise softened.

2.168 Compressibility

Percentage change in thickness of a test piece on being subjected to a specified pressure for a period of time.

2.169 Condensed Tannins

Polyphenolic substances related to flavanoid compounds based on catechin or proanthocyanidin.

2.170 Conditioning

A process whereby dried skins are put in a condition suitable for staking.

2.171 Cordovan Leather

Leather made from shell area of horse hide.

2.172 Corrected grain leather

Leather in which the grain has been partially removed by buffing or any similar mechanical treatment, and enhanced by a finishing treatment.

Note The original pattern is generally identifiable except for heavily corrected grains.

2.173 Crackle Finish

When one resin coat is superimposed over another of a very different glass transition temperature, the differential shrinkage of the top layer during drying leads to cracks known as ‘crackle’. If the two coats are differently coloured, then the bottom colour shows up through the cracks. The pattern can be fixed by a third clear coat.

2.174 Crazy (Horse)

A surface effect characterized by many minute cracks.

2.175 Crocking

Transfer of colourant to the contact fabric when dry rubbed or wet rubbed.

2.176 Cross Coat

The coat of finish applied to leather surface in a direction about 45° to the backbone.

2.177 Curing

A temporary preservation process of raw hides and skins.

2.178 Curtain Coating

Depositing a material as a film/curtain of its solution over a surface from a semi-cylindrical container through a narrow slot provided at the bottom.

2.179 Cutting Value

Utility value; or the useful part of a leather to make leather products.

2.180 Corium

Derma or true skin, beneath epidermis, the portion of the skin mainly consisting of collagen fibres which is converted into leather.

2.181 Cow Hides — Hides of the cow, bull and ox.

2.182 Cracking of the Grain

Opening or breaking of the grain layer by the double fold or key test.

2.183 Crocking

The rubbing-off of colouring or finishing materials from finished leathers. The term is usually applied to coloured suede leathers.

2.184 Crown Leather Leather or Helvetia Leather

Formerly used for laces, picker bands, light belts and other purposes where great toughness and flexibility are required. It is prepared from limed, drenched and partially dried skins with a paste of flour, buttermilk and soft fat.

2.185 Crumpled Hides

Hides that have developed wrinkles, due to drying on the ground instead of straining on frames.

2.186 Crup Leather — *see* 'Cordovan'.

2.187 Crushed Leather

Term applied to leather which has the natural or artificial grain flattened and accentuated by plating or any other process in such a way that the outline of the grain or design is preserved.

2.188 Crusts (Crust Leather)

Tanned hides and skins with natural colour, undyed or dyed, retanned, fat-liquored and dried but without any finish coat and yet may require further processing and mechanical operations.

2.189 Cured Hides

Hides that have been submitted to the process of curing to preserve them temporarily from putrefaction until they reach the tanner. They include wet-salted, dry-salted and air-dried hides.

2.190 Curing Agents

Chemicals used for preservation of raw hides and skins.

2.191 Curing Damage

Damage caused by ineffective curing.

2.192 Curing, Wet-Salted

Curing by the application of salt and keeping the hide wet.

2.193 Currying

A series of dressing and finishing processes applied to leather after tanning during which appropriate amounts of oils and greases are incorporated in the leather to render increased tensile strength, flexibility and water resisting properties.

2.194 Cutch

see 'Catechu'. Catechu extract, leftover after the separation of catechin. Rich in tans and red dye.

2.195 Cutch Tree

A tree belonging to the species *Acacia catechu Willd., fam. leguminosae*, is disturbed in the deciduous forests almost all over India.

2.196 Cut Throat

Skin originating from an animal which has been bled by means of a large transversal slit across the throat (ritual slaughter).

2.197 Cut Throat, *Halali*

A hide of an animal slaughtered according to Islamic or Jewish laws.

D

2.198 Degras, Moellen

Uncombined fish oil pressed out of sheepskin splits in the manufacture of chamois leather. As oiled skins are exposed to air oxidation in this process, the uncombined oil pressed out is also oxidized and thereby gets the valuable property of easy emulsification. On account of this property, degras is much used in leather manufacture for fat-liquoring and currying, so much so that it is now also artificially manufactured by oxidizing cod or fish oil by blowing steam and air into it.

2.199 Degrain

Suede leather, finished on the flesh side, the grain having been wholly or partially removed after tanning by splitting or abrasion.

2.200 Degreasing

Removing natural fat from the hide or skin by emulsification in an aqueous media and/or using a solvent media.

2.201 Degree of Tannage

Amount of fixed organic matter in 100 g of collagen

Note — Applicable to mineral-free leathers.

2.202 Deliming

Removing the alkalinity of limed pelt

2.203 Deliming Agent

Chemicals of acidic nature used to neutralize lime.

2.204 Depickling

Neutralizing the acid from the pickled pelt.

2.205 Depletion

Removing the swelling of the pelts

2.206 Dermatitis

A disease of the derma or true skin occasionally accompanied by intense irritation. It can be caused by contact with chrome liquors, formaldehyde or mineral oils

2.207 Dermis (Derma)

The true skin or that part from which leather is produced. Also called ‘Corium’.

2.208 Detanning

The process of removing tan from leather; especially done for scrap leather to make glue

2.209 Detannized Solution

Solution obtained after detanning scrap leather.

2.210 Detergent

A surface active agent which loosens or removes dirt, oil or grease.

2.211 Dhawa, Dhaura

Tanning material obtained from the twigs and leaves of the tree, *Anogeissus latifolia* Wall. fam. Combretaceae

2.212 Difference Figure

2.213 The difference between the pH value of a solution and its tenfold dilution. It is a

measure for the strength of acids and bases. This value can never exceed the value 1.

2.214 Divi-Divi — Tanning material obtained from the dried pods of the tree *Caesalpinia coriaria* (Jacq.) *Wind. fam. Leguminosae* with average tannin content varies from 28 percent 41percent

2.215 Doe skin Leather

In the glove trade a very supple leather usually white or cream but sometimes dyed with a fine suede finish made from lamb-skin or sheepskin flesh split and tanned by formaldehyde, oil or formaldehyde-alum processes (*see* 'Aldehyde Leather').

2.216 Doe skin Leather

In the shoe trade, a suede leather made from deerskin. The term is almost synonymous with buckskins.

2.217 Double Face

Double-sided leather made from lamb or sheep skins or other animals with wool, dressed, tanned, softened and dyed for desired properties.

2.218 Double Hole Stitch Tear Strength

The load required to tear the leather between two holes, a given

distance apart.

2.219 Drape

The property by which a dressing material covers parts of body following its contours (i.e.

ups and downs).

2.220 Drawn Flanks

Flanks of skins and leathers that have shrunk and show furrowed lines on the grain surface over the underlying blood vessels.

2.221 Drawn Grain

Drawn grain unwanted distorted grain appearance.

2.222 Drenching — The process of deliming with fermented wheat bran.

2.223 Dressed Hides

Tanned hides, curried or otherwise finished, for various purposes, such as belting, harness and saddlery, travel goods and for upholstery.

2.224 Dressing Agents

Oils, fats, waxes, etc., used for dressing and finishing hides and skins.

2.225 Dressing Leather

Vegetable tanned unsplit hides which may be dressed to suit the purpose for which

they are to be used, such as for harness, saddlery and other mechanical purposes.

2.226 Dried Hides — The method of curing hides by air drying is practiced usually in the North, North-West

and other drier parts of India.

2.227 Drum-Head Leather — Parchment or raw hide from sheepskins or calfskins for musical drums.

2.228 Drums

Cylindrical vessel with baffles inside and capable of rotation about its own axis, used for mechanical agitation in leather processing

2.229 Drum Stuffing

Incorporating grease and fats into the leather by using a specially fitted drum.

2.230 Dry drumming

Dry tumbling for leather with or without additives in a revolving drum to soften the structure and improve the nap.

Note Also referred to as dry milling.

2.231 Dry Milling

Tumbling pressed leather in a revolving drum to open it up and remove the creases.

2.232 Dry Pickling

A method of curing skins from wool sheep with sodium sulphate and sodium chloride. Sometimes hypo also is used with a little acid. Sulphuric acid is used in modern processes.

2.233 Dry-Salted Hides and Skins

Hides and skins cured by the process of dry-salting.

2.234 Dry salting

Curing by which the hides and skins are treated with common salt and dried.

2.235 Dye

A dye (or dyestuff) is most commonly an organic compound which may be used to impart colour to a substance.

2.236 Dyed crust leather - Leather tanned, dyed, fatliquored and dried, before finishing.

E

2.237 E.I.

An abbreviation of 'East India' in leather industry parlance. A descriptive term applied to crust, vegetable tanned cow hide (kip), buffulo hide and calf, sheep and goat skins, originating and tanned in the Indian sub-continent mainly in the south.

2.238 East India Kips (E. I. Kips)

Crust tanned kips (cow hide) from India are called kips, because they are not big enough to be classed with cattle hides of other countries and not so small as to be regarded as calfskins.

2.239 E.I. leather

2.240 East India leather

Vegetable-tanned leather with characteristic light beige or pale golden yellow colour manufactured by a process specific to a geographical location

Note — Registered Indian geographical indication number 95.

2.241 Egg Yolk

Yellow part of the egg protein.

2.242 Ellagitannin

A class of hydrolyzable tannins related to the gallotannins (from plant galls).

2.243 Elongation

The extension between bench marks produced by a tension force applied to a test piece. It is expressed by a percentage of the original distance between the marks on the unstretched test piece.

2.244 Elongation at Break

The extension between bench marks produced by a tension force applied to a test piece at the time of its rupture. It is calculated by taking the difference between the original length and the length at the time of rupture under the tension force, expressed as a percentage of the original length.

2.245 Elongation at Specified Load

The extension between bench marks produced by a specified tension force applied to a test piece. It is calculated by taking the difference between the original length and the

length at the specified load, expressed as a percentage of the original length.

2.246 Embossing

Producing a raised pattern by pressure upon the grain side of the leather. The pattern may be on a engraved plate or roller according to the type of embossing machine.

2.247 Embossed Leather

Leather with printed pattern or artificial grain.

2.248 Embossing Plate

Engraved plate which is mounted on a steam heated chest in an embossing machine.

2.249 Embossing Roller

Engraved roller usually of bronze, used in old type embossing machine.

2.250 Empty Leather

Leather lacking in fullness and substance.

2.251 Emu

A flightless Australian bird similar to the South American Ostrich.

2.252 Enzyme Bates

Artificial bates which owe their activity to enzyme. Mostly, the enzymes present in the pancreatic juice, namely, trypsin and steapsin, are so utilized. They dissolve and remove some constituents of the hide.

2.253 Enzymes

Biocatalyst of biological origin and are characterized by their extraordinary specificity and reactivity in living systems.

2.254 Epidermis

The outermost layer of the skin made up of epithelial cells; it covers dermis and is removed during unhairing,

2.255 Epithelial Tissue

The cellular tissue that covers all free surfaces within and without the animal body.

2.256 Epsom Salts — Magnesium sulphate.

2.257 Equinine Leather

Leather made from the hide of a horse, mule, colt, zebra and other equinine animals (*also known as* horse hide/horse leather).

2.258 Erector-Pilimuscle

One of the tiny involuntary muscles of the skins associated with hair that causes goose pimples to form, the hair to stand on end and oil to flow from sebaceous glands to the skin surface, a muscle active in the thermostat mechanism of the skin.

2.259 Eucalyptus

Name of genus of plants. There are some 600 or more species of Eucalyptus of which many are known to contain barks rich in tannin. The presence of a large amount of kino is characteristic of many species of eucalyptus. The tannin content of kino is high (*see* also “Kino”).

2.260 Excelsior Mill — A special type of bark grinding mill.

2.261 Exotic Leather — High fashion leather.

2.262 Extra Heavies (Cow)

Cow hides which are above 18 kg wet-salted weight.

2.263 Extract

In leather industry parlance, it denotes tannin extract. Extracts may be solid or liquid.

2.264 Extract Blended — Mixed extracts.

2.265 Extracting

Drumming wrung sole leather from the layer vats with a concentrated vegetable tan extract to incorporate into it as much vegetable tanning material as it will hold.

2.266 Extraction Substance

Substances (fats and other solubles) which can be extracted from leather with dichloromethane or petroleum hydrocarbon solvent 40/60

2.267 Extractive Matter

Soluble matters which are amenable to extraction; solubles.

2.268 Extract, Sulphited

Extracts which have been treated with sulphites and bisulphites with or without any organic acid, so as to make them more soluble and of better colour.

2.269 Eyelet Straps — Leather straps or flaps to cover the eyelets.

F

2.270 Facing Leathers

Term used to describe light weight leather generally used for facing seams and binding the edges of shoe uppers. Also applied to light weight smooth calf and lamb, skivers of which the inner surfaces of bill folds and wallets are frequently made.

2.271 Facing Stocks

The light leather for facing seams and binding the edge of shoe uppers.

2.272 Factory Leather

Sole leather used in shoe factories; not as firm or heavy as finders' leather used by shoe repairmen.

2.273 Fallen Hides

Hides taken from cattle which have died naturally as distinguished from those which have been slaughtered.

2.274 Fallen Stock

Stock which has been depleted from a swollen condition by bating or treatment with brine.

2.275 Faller Box

Box in which faller stock works.

2.276 Faller Stock

Hammering or a pounding machine used for making chamois leather.

2.277 Falling

To deplete or remove the swelling of limed pelts by bating.

2.278 Falling Solution

Saturated solution of sodium chloride used in pickling hides and skins

2.279 Fancy Leather

Light leathers of different shades of colour and finish for making artistic and fancy leather goods.

2.280 Fancy Trimming

Cutting the leather to give an artistic pattern.

2.281 Fast to Rubbing

Unchanged by rubbing either wet or dry.

2.282 Fat Glands

Sebaceous glands situated on either side of a hair and connected to the follicle by a duct at its upper part. They contain oily matter or sebum consisting of lecithin, cholesterols and in some cases higher aliphatic alcohols.

2.283 Fatliquor

Natural or synthetic oil-based formulation that can be an emulsion, solution or dispersion used to lubricate leather fibres

2.284 Fatliquoring

Application of fatliquor for lubricating and softening leathers

2.285 Fat Wrinkles

Wrinkles due to fatty growths found on many immature cow hides and calfskins.

2.286 Faults

Defects in hides, such as cuts, marks due to branding, goading, vulture pecking, pox and tick, warble holes and hair slip

2.287 Faulty Shearing

Scars left by the shearer on sheepskin at the time the animal is sheared.

2.288 Feeder Cattle

Cattle meant for food.

2.289 Fellmongering

Loosening wool on sheepskin and lambskin.

2.290 Fellmonger

Person engaged in separating wool from sheepskin.

2.291 Fibre, Gelatinous

Fibres which have degraded into a horny state due to overheating.

2.292 Filler

A material, such as mucilage, china clay, glucose, epsom salt, sulphonated oil, etc, introduced into heavy leather to give additional weight. Bottom leathers are often filled with tannin extract alone or mixture of a tannin extract and sulphite cellulose extract. Many heavy leather tanners also drum the leather with some type of filler containing mucilage, china clay, glucose, Epsom salt and sulphonated oil.

2.293 Filling

Introduction of conditioning substances into the leather to give weight and body

2.294 Finish

Coating on a leather surface.

2.295 Finish, Dull

A finish which leaves the grain of the leather dull and free from glaze (*see* also ‘Matt Finish’).

2.296 Finished Leather

Tanned leather processed and finished to the extent that can be used directly without any further treatment for

fabrication into industrial and consumer items or parts of such items. Examples of finished leather are ammunition leather, aniline leather, antique leather, apron leather, automobile leather, belting leather, bookbinding leather, box calf, box side, buff leather, capeskin or cape leather, carding leather, carriage leather, case leather, chrome tanned or chrome retan upper leather, chrome sole leather, chrome washers, clothing leather, combing leather, cordovan leather, crown leather, doeskin leather, fancy leather, football leather, fur finished shearling, furniture leather, gasket leather, glove leather, nappa leather, hydraulic (or packing) leather, harness leather, japanned leather, jerkins leather, lace leather, lining leather, meter or diaphragm leather, morocco leather, patent leather, rein leather, russet leather, Russia leather, saddle leather, skirting leather, sole leather, suede leather and upholstery leather.

2.297 Finishing

Chemical and/or mechanical operations carried out on crust leathers to impart the desired properties for the intended final use of the leather

2.298 Finished Split

A finished leather obtained from splits of the corium major (flesh split).

2.299 Finish, Matt — Dull finish.

2.300 Fire- Dried Hides

Hides cured by being stretched or tied on a frame and dried over a fire. This method is adopted in the damper climates of India.

2.301 Fir Extract

The extract of the bark of firs [*Abies balsamea Mill., A. fraseri Poir*., and *A. nordmanniana* Spach., fam. Pinaceae] is sometimes used for tanning.

2.302 Fish Skins

Skins or outer covering of fish. Skins of the shark are growing in commercial importance. They are used in making fancy leather goods.

2.303 Fish Tanned Skins

Tannage effected with fish oil.

2.304 Fixed Tannin

Tannin which is chemically fixed to the protein. It is represented by the difference between 100 percent and the sum of the percentages of moisture, oils and fats, water soluble matter, hide substance and insoluble ash.

2.305 Fixing Agent

Chemical or mechanical agent that holds the mordants, dyes, pigments, or free vegetable tannins on the leather fibres.

2.306 Flaccid

The soft, fallen, flabby condition produced in pelts by the bating process; a depleted condition with entire absence of plumpness or rubberiness.

2.307 Flank — Side of an animal between the ribs and the hip.

2.308 Flank Skins

Skins running thin along the belly and producing a flat open grain in the leather.

2.309 Flanky Finish

Appearance of crazing, checking or flaking with or without separation of finished film.

2.310 Flaying, Hand

As opposed to machine flaying; flaying done manually with a hand flaying knife.

2.311 Flaying Knife

Knife used to sever the subcutaneous tissues when removing the hide or skin from the carcass. It has a curved cutting edge and tip so as to reduce damage to a minimum.

2.312 Flaying Machine

Mechanical hand unit, replacing the flaying knife and consisting of two saw-edged circular blades placed together, moving in opposite directions and powered by electricity or compressed air. The machine is capable of producing perfectly flayed hides but not for skins.

2.313 Fleece

Woolly covering of a sheep or similar animal.

2.314 Fleshing Beam

Convex shaped sloping platform used as a rest for the hides and skins during the operation of fleshing in olden days. It is usually made of stone or wood and is inclined at an angle of about 45° with the floor.

2.315 Fleshing Knife

A flat curved piece of steel with knife edges 9 cm to 11.5 cm apart, used for hand fleshing of hides. The continental fleshing knife is longer being about 50 mm only.

2.316 Fleshing Machine

A machine comprising of a roller with sharp spiral blades used for fleshing hides and skins.

2.317 Fleshing

Removal of any adipose tissue on the flesh side of the skins usually done after they have been limed, A special knife is used for hand fleshing but the process is mostly carried out by means of a fleshing machine (*see also* ‘Fleshing Machine’).

OR

Bits of flesh removed from the hide by cutting or scraping in the fleshing operation. Those removed from the raw hides are called ‘raw fleshing’ and those removed from the limed hides are known as ‘limed fleshing’. Both kinds are used for glue manufacture and are generally called ‘glue stock’.

OR

Removing the flesh from hides and skins.

2.318 Flesh Side

Reverse side of the hide as opposed to the hairy or grain side.

2.319 Flesh Split

Inner or under layer of a *hide* or *skin* separated from the hide or skin by splitting horizontally in a machine.

2.320 Fleshy Hides

Defective hides in which a lot of flesh has been left with a view to increasing weight.

2.321 Flexural Endurance

Ability of finished leather to endure the stress applied due to repeated bending.

2.322 Flints

Air-dried hides. Also called ‘Flint Dried Hides’.

2.323 Floater

A handler pit in which no solid tanning material is used in laying the hides in the liquor.

2.324 Foal skin — Skin of a colt or filly.

2.325 Foam Finishing

Applying finishes onto leather in the form of foam. High viscosity foam made of a polyurethane dispersion, pigment, filler and a foam stabilizer, when made in a mixer, is stable upto a few hours and can be remixed after longer periods. To suit the high viscosity requirements of Reversible Roller Coaters, foam finishes were actually developed. But, the added advantage that resulted is that more finish can be applied more economically. Though suited for full grain leathers also, it is more beneficial to damaged and hence deeply buffed leathers and splits.

2.326 Fog Resistance

Resistance to the release of semi-volatile and low-volatile substances present in the leather at high ambient temperature.

2.327 Follicle

Hair follicle. A small cavity or pocket in which the hair grows.

2.328 Follicular Mange

Infestation of the skin of mammals by *Demodex folliculorum* which parasitizes the hair follicles or sebaceous glands of men and domestic animals.

2.329 Football Leather

Used for football covering, originally made from pigskins but is now generally made from cattle hides.

2.330 Forel

A grade of parchment made from fleshed sheepskin and having special properties of colour and surface rendering it suitable for bookbinding and fancy purposes.

2.331 Formaldehyde Precipitation Value

It is the percentage of soluble matter obtained when 10 ml of 40 percent formaldehyde solution and 5 ml of concentrated hydrochloric acid are added to 50 ml of a 0.4 percent ± 0.025 percent tannin solution and refluxed for 30 min.

2.332 Formaldehyde Tanning

Process of tanning hides and skins with a solution of formaldehyde for the production of white leather.

2.333 Fox skins — Skins of foxes valued for their fur.

2.334 Freeze Branding

Marks made on the butt/belly of animals for easy identification, using the more modern freezing technique (instead of hot iron branding which invariably damages the hides and skins besides causing cruelty to animals).

2.335 Fresh Hides

Hides taken straight from the animal carcass before curing and dressing.

2.336 Frigorifico Hides

Hides from South American meat canning plants, usually cured by the frigorifico method in which curing is done by brining the hides and subsequently strewing solid common salt on them.

2.337 Frizing

Removing the grain by hand, using a frizzing knife, after liming for 30 to 40 days. The process is used for making Mocha ‘Glove Leather’.

2.338 Fronts

Portion of horse hides or pigskins from neck up to the end of the butt.

2.339 Full-Chrome (Tanned)

The adjective ‘full’ is sometimes added to chrome tanned to emphasize that the leather is neither semi-chrome nor combination chrome but pure chrome.

2.340 Full Grain

Leather bearing the original grain surface as exposed by removal of the epidermis and with none of the surface removed by buffing, snuffing or splitting.

2.341 Full Grain (Full Top Grain)

Term applied to the outer surface or grain portion of a hide from which only the hair has been removed.

2.342 Full grain leather

Leather having kept its entire grain, with none of the surface removed by any corrective mechanical treatment.

2.343 Fullness

Characteristic of good leather signifying plumpness of substance.

2.344 Fur

Skins of some wild animals, covered with short fine hair, which is tanned or dressed for garments.

2.345 Fur Dressing

Finishing fur leather

Note — When dressing the furs, they are sheared (or trimmed), bleached (optional), dyed, combed and finally plush wheeled.

2.346 Fur Finished Shearling

Tanned and dressed sheepskin, bearing short or medium length wool and which has been treated by a process to straighten and brighten the wool.

2.347 Fur-on Nappalan

Fur-on leathers where the flesh side is finished as nappalans.

2.348 Furniture Leather — *see* 'Upholstery Leather'

2.349 Fur Tanning

Process of tanning or dressing furs, different from the process of tanning other varieties of leather in that liming and deliming are omitted.

G

2.350 Gadfly

A fly (tropical biting fly), which pierces the skin of cattle and horses and sucks blood, which may lead to sores.

2.351 Gall Fly — An insect causing gall.

2.352 Gallic Acid Value

Grams of gallic acid present in 0.1 percent solution of pure gallic acid, equivalent to 1 ml of 5 percent potassium permanganate solution (*m/v*). From this value, tannin content of a vegetable tan liquor may be obtained by multiplying with a factor specific to each tanning material.

2.353 Gall Nuts, Galls, Oak Galls

They are the best known of the vegetable galls (abnormal accumulations of plant tissue caused through external parasitic influence) used for tanning, especially those which have been known in the trade as Mecca, Aleppo or Turkish galls. They are considered to be derived mainly from *Quercus infectoria* Olivier., fam. Fagaceae, which occurs in Asia Minor and Eastern Mediterranean countries. The best gall is obtained before the insect escapes. The tannin content of the Turkish galls may vary between 36 to 58 percent. The aqueous extract is said to contain free gallic acid in addition to the tannin and an easily soluble form of ellagic acid. The tannin is not homogeneous and is stated to be built up as polygalloyl- ellagic acid.

2.354 Gallotannic Acid

It is a hydrolyzable tannin. It forms a colorless amorphous mass, light yellowish or buff coloured seals or a brittle vitreous mass becoming yellow in light, strongly astringent and acidic.

2.355 Galuchet

A kind of sharkskin tanned without removal of the hard, pebbly surface. Similar to boroso leather but with a coarser grain.

2.356 Gambal

The spreading piece used for suspending carcasses from hooks for flaying. Also called ‘gambrel’ or ‘spreader’.

2.357 Gambier

Uncaria gambier: Grows in Malaysia, Indonesia and China, Leaves and twigs of the gambier bush contain 40 percent condensed tannins.

2.358 Gash

A cut produced on the skin by the knife or the flaying appliance, cutting into the dermis or skin substance without there being an actual perforation.

2.359 Gasket Leather — *see* ‘Hydraulic Leather’.

2.360 Gas Lime

Slaked lime employed for removing carbon dioxide, carbon disulphide and hydrogen sulphide from a gas.

2.361 Gas Meter Diaphragm

A disc of flexible gas-tight leather for gas meters.

2.362 Gas Meter Leather

Leather capable of being rendered air-tight by impregnation with oils and used for diaphragms in gas meters.

2.363 Gauntlets

A glove with an extension to cover the wrist. Formerly, gloves of steel or leather covered with steel chain or small scales, worn by knights and warriors. Thick gloves, used in boxing, are also sometimes called ‘gauntlets’.

2.364 Gazelle — A small antelope.

2.365 Gelatin

Water-soluble high purity degraded form of collagen of the edible and the photographic grades.

2.366 Gelatin Number

The amount of tannin in grams held by 100 g of gelatin as developed by R. O. Page (1942) is referred to as the gelatin number.

2.367 Gelatin-Salt Reagent

A reagent used in tannin analysis consisting of 1 g of pure gelatin, dissolved in 100 ml of water containing 10 g of sodium chloride and having a *p*H of approximately 4.7 with the addition of acid or alkali.

2.368 Gill Box Leather

A leather used in textile machinery, similar to comb leather.

2.369 Gin or Ginning Leather

Leather, usually vegetable tanned bull or buffalo hide, used to form a roller in the ginning machine, which separates cotton from the seed.

2.370 Gingelly Oil

A semi-drying oil obtained by pressing the seeds of Sesamum indicum Linn., fam. Pedaliaceae. Also known as sesame oil.

2.371 Girth

The band by which the saddle is fastened to the back of a horse.

2.372 Glace Horse

Glazed horse hide leather, also called ‘horse chavereaux’ made from the neck of a horse hide.

2.373 Glace Kid

Leather with high gloss made from goatskins by chrome tanning used for making high class shoes. Also called ‘glazed kid’,

2.374 Glands, Sebaceous

The glands producing oily matter, sebum, located in the grain layer of the skin and connected to the hair follicle by a duct. Also called fat glands. The fatty substance secreted is however not a triglyceride but a wax.

2.375 Glands, Sudoriferous

The sweat glands, also called sudoriferous glands, are coiled sacs with spiral ducts leading to the surface of the skin. They are located in the grain layer near the hair bulbs and secrete sweat consisting of water, together with a little urea and mineral matter and other waste products which are passed out from the body through the skin pores.

2.376 Glassing

Producing a bright finish on the grain by means of a glass slicker.

2.377 Glassing Jack — Glazing machine.

2.378 Glass Paper

Powdered glass glued on paper for abrasive purposes.

2.379 Glass Slicker

Glass plate with smoothened and rounded ends, set in a wooden holder for setting out and polishing leather by hand (*see also ‘Slicker’).*

2.380 Glassy Layer — *see* ‘Hyaline layer’,

2.381 Glazed Finish

The operation of producing a bright, glossy or glasslike finish on the grain surface of leather by subjecting it to the action of a machine which rapidly draws, under pressure, a tool of glass, agate or other suitable material across the suitably prepared surface of the leather.

2.382 Glued Kid — *see* ‘Glace Kid’.

2.383 Glazed Sheep

Sheepskin tanned by the chrome process and glazed and finished for cheap shoe upper leather.

2.384 Glazing

Operation of producing a bright, glossy or glasslike finish on the grain surface of leather.

2.385 Glazing Glass

A roller made of glass used in the glazing machine.

2.386 Glazing Machine

A machine used for polishing and glazing leather.

2.387 Glazing Roller

A solid, cylindrical piece of glass, agate or steel used in glazing machine for polishing leather.

2.388 Glove Kid

Soft and supple leather, made from lamb or kidskins for making gloves.

2.389 Glove Leather

Leather used in making gloves. There are two varieties in general: (a) work gloves, for which leather from full-chrome splits are usually used, and (b) dress gloves, for which a more soft and supple leather, such as that from sheep, lamb and kidskins and to some extent from deer, pig, goat, kid and mocha skins is required.

2.390 Glove Leather, Cape

Glove leather made from sheepskin, with natural grain retained. This should be correctly confined to leather from South African hair sheep. Genuine capeskin from South Africa is a light, flexible, fine grain durable leather generally superior to wool sheepskin of the same or other districts. When used to designate other South African capeskin, it should be qualified as 'Domestic Capeskin', 'Spanish Capeskin', etc.

2.391 Glove Leather, Deerskin

Leather finished with grain surface intact.

2.392 Glove Leather, Kid

Chrome tanned grain glove leathers from goat or lambskins of wool or hair types. This is an instance of the public deceiving itself as the name is in popular vogue but is never used by manufacturers except for stock actually made of immature goatskins. In the glove industry goatskin leather is generally referred to as 'real kid'.

2.393 Glove Leather, Mocha Leather

Leather from Somali black-head or white-head sheep and also from Egyptian and Sudan sheep. It is one of the most expensive of the nap finished leather. After the grain has been removed by a severe liming process known as 'Frizing', the fine fibres below the grain are sueded.

2.394 Glove Leather, Mocha Suede

Arabian chrome tanned, black-head hair sheepskins (commonly called black-head mochas) in which the grain is removed by mechanical abrading rather than by hand frizing and the leather finished on flesh side. This leather retains most of the characteristics of the frized skin, particularly fineness of finish due to closeness of fibres of the skin. It is washable and wears well.

2.395 Glove Leather, Napa Leather

Grain sheep or lambskin glove leather, from domestic, New Zealand or South American sheep skins. Tanned either with chrome, alum or combination tannage and drum coloured.

2.396 Glove Leather, Peccary

Pig leather obtained from a species of wild boar, native to Mexico, Brazil, Argentina and Central American countries. It is fine grained and capable of being shaved down to light weight making it highly desirable for ladies' fine dress and short gloves. It is generally chrome tanned and is washable and very durable.

2.397 Glove Leather, Pig

Pig skin leather as used in the glove trade obtained from the skins of Carpinchos and chrome tanned. It is tough and durable and is suitable for dress making, and for driving and sport gloves. For dress gloves this leather is formaldehyde tanned. The skin often shows scars and scratches received during the life of these wild animals. Domestic pigskin is a tight fibred skin suitable only for work gloves.

2.398 Glove Splits

Flesh split cattle and buffalo hide leather specially prepared for gloves.

2.399 Gloving Leather, Carpincho

Pig leather obtained from a water rodent, indigenous to Argentina and Uruguay; looks like pig leather, is more elastic and softer than peccary glove leather. It is chiefly used in the manufacture of men's fine dress and sport gloves. It is generally chrome tanned and is washable. This is classed as a pigskin and also called as 'Carpincho'and 'Hogskin'.

2.400 Glue

Water-soluble, impure and hence dark coloured degraded form of collagen; generally used as an adhesive.

2.401 Glutaraldehyde Leather

A leather in which Glutaraldehyde has been used, normally in combination with other tanning agents, to make it more resistant to deterioration under moist conditions and perspiration.

2.402 Glyco Proteins

Proteins combined with sugars.

2.403 Goat Skiver

The tanned grain split of a goatskin

2.404 Goad marks

Patches or prick holes found on hides especially in the butt area when cattle are prodded with goading sticks. Some goad marks are considerably larger than a prick hole. These marks can affect the quality of hides.

2.405 Gold Beater's Skin

The membrane of the blind gut of the ox between the large and small intestine.

2.406 Gold Kid

Kid or fine goat leather finished with a coating of gold or gold alloy leaf.

2.407 Goran, Bara Goran

Ceriops decandra (Griff) Dinghov syn. *Ceriops roxburghiana* Arn., fam. Rhizophoraceae, is a shrub or a small tree found in the tidal forests of Sunderbans, east coast of India, Tenasserim, Andamans, Srilanka and various parts of Malaysia. The bark (tannin content, 20 percent to 37 percent) and the leaves (tannin content, 9 percent to 15 percent) areimportant tanstuffs. The bark imparts a red colour to the leather which can be avoided to a large extent by blending it with myrobalans *(Terminalia chebula* Retz. fruits) and the bark of *babul (Acacia arabica* Linn.) in suitable proportions, or by decolonizing and bleaching. (*see* also 'Mangrove').

2.408 Goshap — *see* 'Lizardskins'

2.409 Gothar or Katber, Bhander

*Zizyphus xylopyra*Wild., fam. Rhamnaccae the fruits and bark of which yield a vegetable tan material. The bark contains about 7 percent and the fruit 23 percent of tannin. It produces a good leather but results in much mucilage.

2.410 Gouch

Flaying defect of hides caused by the removal of the substance of the hide creating a depression or pit on the flesh side.

2.411 Gouge

Thinning of the skin caused by the knife or by the flaying appliance, without there being any actual perforation.

2.412 Gouges

A chisel with a hollow blade for cutting grooves or holes.

2.413 Grain

Outer side of the leather once the hair or wool and epidermis have been removed, characterized by follicles from hair or wool, feather follicles or scales, specific to each animal species

2.414 Grain Box — Square grain, grain characteristics produced when calf and side leathers are boarded from neck to neck and from belly to belly.

2.415 Grain, Brittle — Grain which is prone to crack.

2.416 Grain Burst

Tearing of the hair-side of the skin during flaying, whatever the process of flaying used.

2.417 Grain, Corrected

Where the grain of a leather is poor or damaged, very often it is buffed off and a finish applied which fills the buffed grain surface and hides the fact that the grain has been previously coarse or damaged. Resin finishes incorporated with highly concentrated pigment pastes and a little wax emulsion are very suitable for correcting grain finish.

2.418 Grain Crack Resistance

Resistance of the grain surface of the leather to rupture when subjected to mechanical stress.

2.419 Grain Damage

Any damage to the grain side of the skin, whatever its origin or nature, causing depreciation of the skin.

2.420 Grain, Dragged or **Grain, Rubbed**

Damage done to the grain by dragging the carcass or the hide on hard surfaces.

2.421 Grain, Drawn

Leather which has been 'case hardened' that is, the surface has been over tanned due to the use of an excessively strong and astringent tan liquor.

2.422 Grain, Forel

A type of parchment used for book binding and made from un-split sheep skin.

2.423 Grain Pitting

Small outbreaks in the skin appearing on the grain-side of the skin, leaving an empty space in the form of a crater after tanning.

2.424 Graining

Imparting lined or patterned effect on the grain side of leather by standing or embossing.

2.425 Graining, Four ways — To board in four directions.

2.426 Grain Layer

The top layer of the corium including the hair follicles. The individual fibres of this layer are finer than that in the rest of the corium.

2.427 Grain Leather

Any leather on which the original natural grain has been changed or altered to any degree by any process or manipulation.

2.428 Grain, Levant

Obtained by embossing the particular grain pattern on the leather and then boarding, seasoning and glazing to bring out the gloss. Levant grain finish is produced on goat and sealskins and also kips and hide bellies (*see* also 'Levant').

2.429 Grain, Old

Defect of the grain perceptible as raised and depressed patches on the grain surface. This is caused by the age of the animal and found more on bull than on cowhides. It is not possible to get a smooth leather from a hide having this defect.

2.430 Grain Pattern — *see* 'Grain'**.**

2.431 Grain, Pipey (Loose Grain)

A serious defect on the grain surface of the leather. The grain layer is so loosely held on to the layer underneath that it sticks out on slightly folding the leather, making blister-like formations on the surface.

2.432 Grain Quality

Quality of the grain, its smoothness and fineness and freedom from flaw, such as scratches, wrinkles, growth marks, etc., is one of the most important considerations in appraising the value of leather.

2.433 Grain Roller

Machine used for smoothening the grain so as to bring out a full lustre and a smooth feel.

2.434 Grain Scratches

Damages caused on the grain by thorns, barbed wires, etc.

2.435 Grain Side

The upper or hairy side of a hide.

2.436 Grain, Silky

Grain, smooth and with natural Iustre.

2.437 Grain, Split

upper or top layer of a *hide* or *skin* with grain surface, separated from the hide or skin by splitting horizontally in a machine.

2.438 Grain, Synthetic –- Artificial or embossed grain.

2.439 Grainier

Type of surface crystallizer in which the sodium chloride crystals are raked to one end by a reciprocating mechanism, allowed to drain on an inclined table and get discharged.

2.440 Grainy Leather

Leather with too coarse or russet grain. Also leather showing marbled grain.

2.441 Grassers

Calf or kip skins taken from animals that are poorly fed and possess coarser grain.

2.442 Grater

An instrument to pulverize by rubbing.

2.443 Grease

Glyceridic or hydrocarbon lubricant, solid or pasty at ordinary temperatures. It may be a mixture of lard, tallow, bone, fat, fish Stearine, Aluminium or lead soap having a butter-like consistency.

2.444 Green Fleshing — Fleshing in the raw state.

2.445 Green Hides and Skins

Freshly flayed hides and skins which are not cured.

2.446 Green Salting — *see* 'Wet-Salting'.

2.447 Green Stiffness

An intensely swollen condition of hides and skins caused by very alkaline lime liquor. Hides and skins get very plumped and stiff and become almost transparent with a slight greenish hue.

2.448 Green Weight

Weight of raw hides and skins, prior to any treatment.

2.449 Grey Scale

A scale used for measurement of change in shade of coloured leathers.

2.450 Ground Drying

Sun-drying of hides end skins for which they are spread on the ground, flesh side uppermost, and either weighed down with stones or pegged to the ground through holes around the edges. This method of drying is unsatisfactory and affects the quality.

2.451 Ground Hair

Young hair which is still growing, small and thin. Also called short hair. This does not become loose in liming as quickly as old long hair because it's root is more firmly embedded in the skin and can't be easily removed by the action of the depilants.

2.452 Growth Marks

Marks of the fold lines on hides and skins made permanent by the hardening of the tissues in the course of ageing while being part of the live animal.

2.453 Ground Fibre, Coarse or Fine

While grinding solid crude tanning material for the preparation of samples for analysis, not all the material become uniformly fine. Such ground material, when sieved on 1.40 mm IS Sieve yields coarse fibre (retained on 1.40 mm IS Sieve) and fine fibre (passing from 1.40 mm IS Sieve).

2.454 Ground Substance

see 'Interfibrillary Substance' and 'Cementing Substance'.

2.455 Grubby Hides — Hides full of warbles.

2.456 Grubs

Larvae of the warble or bot flies. Belonging to the species Hypoderma bovis and Hypoderma lineatum, which damage the hides by puncturing holes along either side of the spinal line. Hypoderma crossioccur in goats (*see* also 'Warbles').

2.457 Gusset Leather

A soft, flexible leather used for gussets in shoes, bags and cases.

2.458 Gypsum Stains — Marks caused by contact with calcium sulphate.

H

2.459 Haematin, Hematin, Haematein

The colour giving principle of logwood (Haematoxylon campediamun Linn., fam. Leguminosae) is haematoxylin which on oxidation produces haematin the real colouring matter which with iron or titanium mordants produces bluish black, with chrome mordants deep blue and with copper mordants a greenish blue coloured leather. Haematin is also a name given to logwood extract by some manufacturers. Henol Hemoline is another name given to logwood extract by other manufacturers (*see* also 'Logwood').

2.460 Haematoxylin — *see* 'Haematin'.

2.461 Hair

Hair is a keratinized dead structure, the cells of which are completely cemented together. They grow out of tubes of epidermis sunk into the dermis, the hair follicles. Hair is composed of a cuticle on the outside, usually a medulla in the centre and a cortex between the two.

2.462 Hair Follicle

Pocket or indentation of the skin surface in which the hair grows, also called hair sheath.

2.463 Hair, Ground — *see* 'Ground Hair'.

2.464 Hair Line

The line that marks the variation of the growth of hair on the 'front' and 'butt' of a horse hide. This line crosses the hide about three quarters of the way back from the head.

2.465 Hair Papillae —A projection from the dermis into the hair bulb through which nourishment is supplied to the growing hair.

2.466 Hair Pulp

The pulp obtained when hair is reduced by strong solutions of sodium sulphide or alkali.

2.467 Hair-Pulping Methods of Unhairing

Methods which facilitate unhairing by the destruction of hair by breaking the disulphide bonds, which stabilize the hairs. Lime-sulphide immersion method.

2.468 Hair Root

The portion of the hair which remains embedded in the skin.

2.469 Hair-Saving Methods of Unhairing

Methods of loosening hairs so that they can be easily removed without affecting its structure so as to utilize it further commercially.

2.470 Hair, Sheep

Some types of sheep grow hair in place of wool. They are indigenous to tropical countries like Brazil, Ethiopia, East, West and South Africa, India, Somalia, South Arabia and Sudan. Leather from skins of such sheep has a finer and tougher grain than from wool bearing sheep.

2.471 Hair, Short — *see* 'Ground Hair'

2.472 Hair Side

The side of hide or skin with hair on; the grain side.

2.473 Hair Slip

Slipping or loosening of the hair in hides and skins due to putrefaction

2.474 Hair, Summer-Winter

In summer, the hair on cattle hides is shorter and less dense than in winter. In India, hides taken off and cured in winter are, better in quality than those flayed and cured during summer.

2.475 Hair, White

The white hair of the cow's body which fetches a better price than black hair.

2.476 Halali — *see* 'Slaughtered'.

2.477 Half Fronts — Half of the front part of the horse hide.

2.478 Half Hair and Up

The term denotes that the hides possess hair of average or more than the average length and thickness and is a trade specification for the winter hides. Hides that are taken off and cured in the dry months are sounder than those cured during the rainy season.

2.479 Half Tanned Hides

Lightly vegetable-tanned hides. They are also called East India tanned kips and they consist mostly of cow hides and also to some extent of light buff-hides. It may be noted that the term is a misnomer.

2.480 Handbuffs — *see* 'Upholstery Leather'.

2.481 Hand Fleshings

Removal of flesh by a special type of hand knife from hides and skins. For this, the hide is spread over a beam with the flesh side up.

2.482 Hand Glazing

Glazing with a glass slicker by hand. The leather is spread over a table, grain side up and is rubbed with the slicker to get a shine on the leather,

2.483 Hand Grained

Grain which has been raised or worked up by hand boarding.

2.484 Handler

A person who hauls hides and skins during vegetable tanning process performed in pits.

2.485 Handling

Hauling the hides and laying them down into the liquor of handler pits.

2.486 Hand-Hole

A cut made at the edge of the hide in order to facilitate flaying.

2.487 Hand Seasoning

Hand application of seasoning solution with a soft bristle brush or plush pen on leather spread on a table, grain side up.

2.488 Hand Shaving

Scrapping with a hand shaving knife, the flesh side of tanned leather with a view to making the substance uniform and of desired thickness.

2.489 Hand Staking

Mechanical softening of leather by drawing it against a hand staker with considerable pressure so as to stretch and open up the fibres.

2.490 Hand Stock

Name for dry salted goatskins (especially in the American Market.)

2.491 Hand Stuffing

Incorporation, in the currying process, of grease into some varieties of vegetable tanned leather by the application of suitable grease mixture, known as dubbin, with a hand brush to well set semi-moist (sammed) leather.

2.492 Hard Grain Goat

Goatskin leather with a characteristic pin head grain pattern produced by hand boarding in a wet condition in at least four directions; vegetable tanned, sometimes also called Morocco.

2.493 Harness Leather (Gear Leather)

Bark tanned leather from buffalo or heavy ox hide suitably greased or curried for making harness and saddlery.

2.494 Hart — The stag or male of the deer.

2.495 Hartshorn Salt

Salt made from chippings and shavings of horns of harts, formerly the main source of ammonia.

2.496 Hasteners

Special preparations which are blended with other tanning materials to quicken the process of tanning. Also called ‘Accelerators’.

2.497 Hat Band Leather

Leather from sheepskin or calfskin, used for making sweat bands in hats.

2.498 Haziness

Cloudiness in a finish film; caused by the presence of alien substance(s) of a different refractive index in the film.

2.499 Head

Part of the hide which covers the head, which is usually cut off from a well trimmed hide. ‘Heads’ are also called mathanis and mundas.

2.500 Head, Split — The split of the head portion of the hide.

2.501 Head Splitting — Same as 'Cheeking'.

2.502 Healed Warble Hole

Scar formed as a result of the warble hole having Healed.

2.503 Heated Hides

Hides in which putrefaction sets in. It is called so, because heat is generated during putrefaction besides rise in temperature also hastens putrefaction. This is noticed from hair slips.

2.504 Heating

Beginning of putrefaction of the skin revealed by a premature loosening of the hair.

2.505 Heavies

Cow hides weighing 5.5 kg to 7.5 kg in the dry state.

2.506 Heavy Hide

A steer hide weighing more than 26 kg or a cow hide weighing more than 24 kg in the green salted state.

2.507 Hevy Leather

Thick leather for sole, machine belts, harness and saddlery, having comparatively greater weight than dressing and light leather is grouped under this category. It is sold by weight, while dressing and light leathers are sold on the basis of number of pieces or by area.

2.508 Hematein

Logwood dyestuff (hematein) is obtained by oxidation of haematoxylin $C_{16}H_{14}O_6$, $3H_2O$ from the logwood tree. It is used in tanning leather and also in dyeing and preparation of black leather pigment finishes (*see* also 'Logwood').

2.509 Hide

Raw skin of a mature or fully-grown animal of the larger kind.

Note — Cattle and buffalo.

2.510 Hide, Alum Tanned

Hides tanned with basic aluminium sulphate or with alum, in admixture with other ingredients like salt, flour, egg yolk, etc. as a traditional practice.

2.511 Hide, Bathed

Hides of animals which were bathed before slaughter.

2.512 Hide Beetle

Dermistes maculatus (vulpinous), a species of beetle the larva and adults of which damage the hides, skins and leather.

2.513 Hide, Brined

Hide cured by treating with concentrated solution of common salt, or 'brining'. In South America the process is largely used for curing hides known as 'frigorificos'.

2.514 Hide, Domestic

Hides obtained from the local or home market.

2.515 Hide, Exotic — Foreign hides.

2.516 Hide, Fallen

Hides from animals which have died due to natural death.

2.517 Hide Fibre

The collagen fibre in a hide.

2.518 Hide, Grubby

Dirty and grimy hide which is full of grubs.

2.519 Hide, Meaty

Hides with considerable amount of adhered meat.

2.520 Hide, Mountain

Hides obtained from cattle of hilly tracts.

2.521 Hide, Native — Hides from indigenous sources.

2.522 Hide Powder

Hide powder from well-washed, dried, delimed pelt disintegrated using a grinding mill.

2.523 Hide Powder Method

Official method of the "International Union of Leather Chemist's Societies (IULTCS)" for Analysis of Vegetable Tannin, in which tannin is absorbed by the hide powder.

2.524 Hides

In general leather sector parlance, the term includes raw, dressed or tanned skins of bullocks, cows, buffaloes, horses, camels, etc, although in statistics and commerce calfskins are also included. Accurately, hides are to be regarded as the outer coverings of large animals in raw or untanned condition. Hides when tanned yield leather.

2.525 Hides and Skins, Dry-Salted — Hides and skins cured by salt and air dried.

2.526 Hides and Skins, Green — Hides and skins in fresh natural state.

2.527 Hide, Split — *see* 'Split'.

2.528 Hide Substance

Amount of collagenous substance in 100 g of dry leather.

2.529 Hide, Unbathed

Hide of an animal which was not bathed before slaughter.

2.530 Hippiness

Defect noticed in the hides of cows which have had many calves, also defect in hides and skins caused by excrescences of animals. This prevents leather from lying flat and smooth; in extreme cases its removal leaves holes, breaks the pattern and reduces the cutting or commercial value.

2.531 Hogskin

The skin of swine; grain gloving leather made from the skins of the peccary and carpincho. The leather is sometimes buffed on the grain and is then known as 'Buffed Hogskin' (*see* also 'Carpincho').

2.532 Hole

Accident during flaying, complete perforation of the hide or skin caused by either the knife or the flaying appliance.

2.533 Hood Hides

Tanned hides used for making hoods for carriages.

2.534 Hoof

The horny protecting substance which grows on the feet of certain animals like horses, cows, etc.

2.535 Hoof Oil, Bubulum Oil — *see* 'Oil, Neatsfoot'.

2.536 Hopea Bark

The bark of genus of trees *Hopes odorota Roxb. fam. Dipterocarpaceae* reported to yield supple pale leather. The

leaves, bark and wood contain 11 percent , 13 percent to 15 percent and 10 percent tannin, respectively. The bark of *Hopea parriflora Bedd* containing 14 percent to 20 percent polycatechol tannins is recommended for blending with other tan extracts.

2.537 Horn

A hard projection on the head of certain animals usually bent or curved.

2.538 Horn Wounds

The wounds or scars on hides caused by the horns of other animals.

2.539 Horny Layer

The topmost layer of the epidermis consisting of dried epithelial cells.

2.540 Horse

A portable wooden stand or vehicle or on which leather and skins are piled for draining or for transporting from one department to another.

2.541 Horsing Up

Piling upon the wooden stand known as 'horse'.

2.542 Hose Leather

Flexible strong leather made from cattle hide, shaved level and so dressed with soft grease as to make it virtually waterproof.

2.543 Hot Stuffing

Incorporating grease in the molten condition into leather at a comparatively high temperature.

2.544 Hue

It is of the three dimensions of colour and hue is the quality recognised as red, blue, etc. as against light, dark or pure/dirty characteristics.

2.545 Humane Killer

A lethal weapon used for killing animals (*see* also 'Captive Bolt').

2.546 Humectant

A material, which keeps the surface of the leather moist and thus makes the material flexible.

2.547 Hump

Baggy portion of the hide of humped cattle. As Indian cattle are mostly humped, the bulk of the India hides have this baggy pocket on the shoulder. The leather cannot be stretch out quite flat unless cut into two halves or sides. East India kips are therefore, slit into two sides, called 'kip sides' before tanning and finishing.

2.548 Hunting Calf

Suede upper leather with the suede on the flesh side, made from a larger calfskin or from a veal. Somewhat coarser than suede calf (*see* also Reversed Calf).

2.549 Hunting Suede

Suede upper leather, finished on the flesh side, made from calf, heavy goatskin or cattle hide. (*see* also Hunting calf).

2.550 Hyaline Layer (Glassy Layer)

An exceedingly thin film constituting the extreme surface layer of the pelt; if it is damaged, the leather will not take the gloss or polish. It is also called the 'glassy layer'.

2.551 Hydraulic Leather

Leather made from cattle hides used for making pump buckets valves and other purposes. It is vegetable, chrome or

combination tanned followed by special stuffing (*see* also 'Gasket Leather').

2.552 Hydro Extractor

Centrifuge machine for removing surplus water from wet leather, also called 'whizzer'.

2.553 Hydrolyzable Tannins

Vegetable tannins, which are esters of a sugar and a tannic acid and hence on hydrolysis decompose into these components.

2.554 Hypo Bath

Second or the reducing bath of the double bath chrome tanning process which contains a solution of sodium thiosulphate or hypo ($Na_2S_2O_3$, $5H_2O$) to chemically reduce dichromate. With the introduction of readily available Basic Chromium Sulphate powder, this method is not being followed nowadays because unreduced dichromate is hazardous. Hypo solution also used for the deposition of sulphur in leather in the sulphur tanning process for making a variety of picking band leather.

I

2.555 Imitation Leather

Leather like substance made out of non-leather material much used for upholstering furniture and motor cars, which is very similar to genuine leather in appearance and some properties.

2.556 Immergan

Alkyl sulphonyl chloride used as substitute for oil tanning developed in Germany during World War II.

2.557 Immunization of Hairs/keratin

Stabilization of hairs when exposed to moderate concentrations of alkali in the absence of a reducing agent. The stabilization is attributed to the replacement of disulphide cross-links with more stable ones.

2.558 Impregnated Bend

Sole leather bend which has been impregnated with wax, hard grease, rubbery polymers or other agents in order to make it more water-resistant and/or durable.

2.559 Impregnated Leather

Leather, which by means of the addition of materials such as grease, wax and/or impregnating resins, etc. has been improved in some of its properties without thereby losing its typical leather characteristics.

2.560 India Rubber

Caoutchouc, coagulated latex of various rubber trees and shrubs.

2.561 India Tanned

Term applied to hides and skins tanned in India. This leather is considered as a raw material and is generally 'retanned' before finishing. Also called E.I. tanned or East India tanned hides and skins.

2.562 Industrial and Mechanical Leathers

Leathers used for industrial purposes and in mechanical parts of machines. The following types of industrial and mechanical leathers are defined in this Glossary:

a) Bellows hide

b) Bellows leather

c) Belting butt

d) Belting lace back

e) Engine leather

f) Gas meter leather

g) Hat leather

h) Helvetia lace leather

j) Helvetia leather

k) Hose leather

l) Hydraulic leather

m) Meter leather

n) Raw hide belting leather

p) Raw hide lace

q) Strap butt

r) White hide leather

s) White lace leather

2.563 Industrial Glove

Glove leathers used for protecting hands of the workers mainly made from chrome splits.

2.564 In-the-Pearl, Rough, Crust, Blue, White

Approximately equivalent terms used to describe stock which has been tanned but not finished. 'In the-rough' or 'rough tanned' is most commonly applied to vegetable tanned cattle hide leather; 'in-the-crust' to vegetable and 'in-the-white' to alum or formaldehyde tanned sheepskins and lambskins; 'in-the-blue' to chrome tanned skins; 'in-the-pearl' to chrome tanned stock; 'dried-in-the-blue' to crust leather from which white or coloured leather will be made as needed.

2.565 In-the-Pickle

Term used to describe skins from which the hair or wool has been removed and which are preserved in a condition ready for tanning, usually in a wet state with salt and acid and sometimes alum.

2.566 Insole Belly

Vegetable tanned hide belly suitable for insoles for footwear.

2.567 Insole Leather

Hide leather, including flexible splits, vegetable or combination tanned, in sides, bends, shoulders and bellies, suitable for the inner soles of footwear.

2.568 Interfibrillary Substance (Cementing Substance)

A well-defined mass of substance uniformly distributed throughout the dermis of hides and skins composed of gluco-proteins or mucins containing some glucose or sugar in the molecules. It is insoluble in water but is only very slightly soluble in dilute solutions of neutral salts; is digested by alcohol, trypsin and pepsin; and readily dissolved in weak solutions of alkali, such as lime liquor. The bating process helps to make the final leather soft by the removal of this substance from the pelt.

2.569 Intermediate Coat

A middle coat between base coat and final coat of leather finishing process. Also known as "Effect Coat"

2.570 Internal Plasticizer

A soft polymer used to plasticize a hard polymer (for example, softer acrylics in respect of harder acrylics and polyvinyl acetate in respect of polyvinyl chloride). The advantage is that unlike in external plasticizing, the plasticizing soft polymer does not migrate in course of time, making the film brittle. (*see* also 'self-plasticized').

2.571 Iron

Olden days practice and the term used for measuring thickness of sole leather; 1 Iron= 0.53 mm

2.572 Ironing

Process of hot pressing the finished and calendared leather with a laundry iron to give the leather a smooth appearance. Ironing may be done by a hand iron or by an electrically heated ironing machine.

2.573 Iron Oxide Pigment

Essentially iron oxides, for example, raw and burnt umber, raw and burnt sienna, ochres and red oxides such as Spanish brown. There are a number of commercial precipitated oxides of iron which are favoured more than the natural oxides for their standard quality. There is also an iron oxide which is of black colour.

2.574 Iron Stains

Stains caused by iron compounds by their reaction with vegetable tannins or vegetable tanned leather.

2.575 Iron Tannage

Tannage effected by basic iron salts much in the same way as basic chrome salts.

2.576 Isinglass — Pure fish gelatin.

2.577 Iso-electric Point

Refers to a point at which the pH value of collagen kind of protein has no charge or electrically neutral and has the least swelling. Usually, it is 4.7 for limed collagen.

2.578 Ivory Black — Bone black.

J

2.579 Jack

Glazing machine, stoning machine or a light rolling machine is often called a glazing jack, stoning or rolling jack. The pedestal, a support used for lasting shoes, is called lasting jack in the shoe industry. The three-legged iron equipment with the end of the legs having the shape of the foot used by cobblers in shoe repairing is also called jack.

2.580 Jacking

Setting and flattening sammed leather with a stone tool attached to a jacking machine which is similar to an inclined bed glazing machine. Jacking removes creases and folds in the leather.

2.581 Japanned Leather

Another term for patent finish on heavier types of Leather.

2.582 Japan Wax, Sumac Wax

Vegetable spermaceti obtained from the berries of certain Chinese and Japanese trees belonging to *Rhus spp., fam. Anacardiaceae*. Also called Chinese wax.

2.583 Jerkins Leather — *see* 'Clothing Leather'

2.584 Jungle Suede

A two-tone irregularly coloured fine suede leather, produced on the flesh side, dressed and dyed to simulate light and shade, and to emphasis the veins and natural characteristics of the skin.

K

2.585 Kahua Bark

Arjuna bark or bark of kahua, *Terminalia arjuna Wight and Arn*., *fam. Combretaceae*, from Central India containing 20 percent to 24 percent tannin. The leather produced by it is of a reddish tint, but the colour may be improved if dhawa leaves, myrobalans, sumac, etc, which have the property of bleaching the red colour are used in admixture with kahua bark.

2.586 Kangaroo Leather

Leather from the skins of Australian animal kangaroo. In general, the grain of kangaroo leather is much finer and

stronger than other skins.

2.587 Kaolin

Term interchangeable with china clay. A secondary clay aluminium silicate, chiefly used in tannin analysis.

2.588 Karada Bark

Bark obtained from a tree *Cleistanthus collinus (Roxb) Benth syn. Lebidiecropsis oribicularis Muell. Arg. fam. Euphor-biaceae*, commonly distributed in Deccan northwards up to Gangetic plain. Bark, leaves and fruits contain tannins. The bark contains 33 percent, leaves 19 percent, green fruit 14 percent tannins. Sometimes used for tanning. Karada is the name used in Orissa.

2.589 Karunda

Leaves of *Carissa spinarum Linn. fam. Apocynaceae* containing 9 percent to 15 percent of tannin and constitutes a promising tanning material, particularly in combination with other tanstuffs, such as the twig bark of *Emblica officinalis Gaertn. syn. Phyllanthus emblica Linn*. Infusion of these leaves has a great swelling action on leather.

2.590 Karanj Oil

It is a non-edible oil obtained from the seeds of the plant *Pongamiapinnata (Linn.) Pierre syn. Pongarnia glabra Vent. fam. Leguminosse*. In South India it is known as pungam oil.

2.591 Kattas (Kattais)

Light buffalo hides and buffalo calfskins weighing between 5.5 kg and 11.5 kg in the wet-salted condition are called kattas. The lighter ones weighing below 5.5 kg in the wet-salted condition are known as ‘kattais’.

2.592 Kattha

A comparatively pale coloured substance rich in catechin or containing some catechin tannins. It is obtained mostly from the hot water extractives of the heartwood of *Acacia catechu Wind*., and sometimes used for chewing in betel leaf (PAN) and in the indigenous system of medicine.

2.593 Keratins

The basic substance in all horny structures, such as the epidermis, hair, nails, horns, claws. It is resistant to enzymes, acids and alkalis.

2.594 Key Test

A practical test for ascertaining the grain crankiness of leathers. The tip of a key is pressed to the flesh side of leather and drawn with medium force by hand. If there are no cracks observed on the grain side, then the leather passes the test.

2.595 Khair Tree — same as ‘Cutch Tree’.

2.596 Khari Salt

Saline earth containing sodium sulphate mixed chiefly with sand and mud used for preserving hides. A soupy solution of this salt is applied to the flesh side of the hide 5 to 6 times, the hide being dried after each application, yielding a plaster of the muddy salt on the flesh side of the hide, which is often made intentionally thicker to increase the weight. The hides are known in the trade as ‘drysalted’, ‘khari-salted’, ‘khari s’,‘nimkis’ or ‘Plastered cured’. If the plaster is thick the cure is called ‘heavy’, otherwise it is called ‘light’.

2.597 Kicker

Box like receptacle containing sawdust used for processing fur skins. Into this box dips a footshaped projection which is mechanically moved to and fro for softening dry pelt.

2.598 Kid

A full chrome leather made form kid or goatskin and primarily meant for shoe upper. The only exceptions to this are gold and silver kid, which may be semi-chrome tanned.

2.599 Kids

Skins of smaller size (less than 64 cm).

2.600 Killeds

Term formerly included ‘slaughtered’ and ‘commissariats’ but is now used to denote practically all ‘framed hides’.

2.601 Killing

Preparing wool or furskins for dyeing. Killing is often done with sodium carbonate, ammonia or ammonia and hydrogen peroxide.

2.602 Kino

A general term used to designate gums of various trees containing kinotannic and other tannins which are mainly employed in tanning and also in pharmaceutical preparations as astringent. In India, kino is obtained as a dried juice from the trunk and bark of various trees, such as:

Sl No.	Kino in India	Extracted components
(1)	(2)	(3)
i)	*Pterocarpus marsupium Roxb., fam. Leguminosae*	Yields Indian kino or Malabar kino (tannin content 50 percent to 80 percent).
ii)	*Eucalyptus spp. fam Myrtaceae*	For example, E. calophylla R. Br. yields ‘Botany Bay Kino’; E. camaldulensis Dehn-hardt syn, E. rostrata , Schlecht, yields Eucalyptus kino or red gum.
iii)	*Butea monosperma (lam.), Taub. Kuntze syn. B. frondosa Koenig ex Roxb., fam. Leguminosae*	Yields ‘Butea gum’ or ‘Bengal kino’

2.602.1 It contains a high percentage of tannin but imparts a red stain.

2.603 KIps, Commissariats, Slaughtered

Skins of animals slaughtered in army slaughter houses.

2.604 Kips, Dead

Light weight medium cow hides (Indian) obtained from animals which have died a natural death.

2.605 Kips, East Indian — *see* ‘East India Kips’.

2.606 Kiss Plate

Touching the finish face of a leather in a hydraulic press with a plain plate just hot enough to smoothen the finish and make it somewhat glossy but without affecting the softness of the leather.

2.607 Kiss Spot

Light stain on vegetable tanned hides and skins due to pelts touching each other in the early stages of tanning.

2.608 Knee-Staker

Metal blade set upright on a wooden support which may be a rigid upright portion of the stand or an upright stake. The skins for staking are worked over the blade using both hands and knee to give the necessary pressure on the skin. Staking pulls apart the tibres of the skins which should remain quite soft on drying.

2.609 Koch Extractor

An apparatus used for preparing extracts of solid tanning materials.

2.610 *Konnam* Konnan Bark

Bark of a South Indian tree, *Cassia fistula Linn., fam. Leguminosae* used as a substitute for avaram bark. It is not so rich in tannin (contains 12 percent to 18 percent tannin), as avaram bark but gives a very smooth grained leather of a very pale colour. Also known as amaltas, rela, sonali.

2.611 Kustias

Bengal goatskins cured both by wet-salting and dry-salting. They produce fine grain on glace kid and are very popular for glace kid manufacture. Yield 3.7 to 4.3 m^2 per dozen and weight 45 to 52 kg per 100 skins.

L

2.612 Lace Leather

Leather used for lacing together sections of driving belts.

2.613 Lacquer

A solution of a film forming polymeric material in an organic solvent.

2.614 Lacquer Emulsions

Dispersion in water of a solution of nitrocellulose or other film forming substances dissolved in organic solvents.

2.615 Lake

Insoluble calcium, barium or manganese salt of a dye co-precipitated with an insoluble substrate such as alumina-blanc fixe. It is made by treating the solution containing the dye and aluminium sulphate, first with soda ash and then with barium chloride.

2.616 Lambskin — Skin of a lamb with fleece on.

2.617 Lambskin Leather

Leather made from lamb and sheepskins. The skins are almost identical in appearance after tanning.

2.618 Lamp Black

This is carbon in finely divided condition prepared by the incomplete combustion of tar, colophony, vegetable oils and the pitch or heavy oils of tar. It is used in the leather industry for blackening certain classes of greasy or waxed leather and also in the preparation of ‘japan’ used in the making of patent, japanned or enamelled leather. Also used in making case in based pigment finishes of black colour.

2.619 Laminated Leather

Leather where a foil (polymeric film) layer, not exceeding one third of the total thickness, is applied by a transfer coating process

Note — Other methods of applying a foil (polymeric film) are plating, embossing and ironing

2.620 Lanolin — A purified form of wool grease.

2.621 Larch Bark

A tanning material available and used in Scotland.

2.622 Larrigan Leather

Oil-tanned light hides used largely for moccasins.

2.623 Latigo Leather

Strong leather used extensively where strength and body are desired.

2.624 Lattice Drums

Cage-like drums holding the stock but rotating with a low speed in a vat containing tanliquor to accelerate vegetable tanning.

2.625 Leach Pit

Pits in which tannins from the vegetable material are extracted.

2.626 Leaching

The process of preparing infusions of tanning material in leach pits.

2.627 Leather

Hide or skin with its original fibrous structure more or less intact, tanned to be imputrescible, where the hair or wool may or may not have been removed, whether or not the hide or skin has been split into layers or segmented either before or after tanning and where any surface coating or surface layer, however applied, is not thicker than 0.15 mm.

Note

1. If the tanned hide or skin is disintegrated mechanically and/or chemically into fibrous particles, small pieces or powders, and is then, with or without the combination of a binding agent, made into sheets or other forms, such sheets or forms are not leather.
2. If the grain layer has been completely removed, the term leather is not to be used without further qualification, e.g. split leather, suede leather.
3. The material shall be of animal origin.

2.628 Leather Board

Scraps of leather ground in the form of pulp and mixed with bonding materials like rubber latex and made into a sheet.

2.629 Leather Carbonized

Leather which has been ignited and reduced to carbon.

2.630 Leather Charcoal

Charcoal made from leather wastes.

2.631 Leather, Dressing

A variety of curried vegetable tanned leather used in making heavy boots and travel requisites (*see* also 'Dressing Leather').

2.632 Leather Gauge

A graduated instrument for measuring thickness of leather.

2.633 Leather in Crust Condition

Leathers which have been tanned and dried but not finished.

2.634 Leather Powder

Leather which has been shredded into fine particles.

2.635 Leather Rough Tanned

Leather which has been half tanned and not finished.

2.636 Leather Substance

The sum of hide substance and fixed tan. In reporting analytical results of E. I. tanned hides and skins, it is taken as the difference between 100 and the sum of the percentages of moisture, oil and fat, water solubles (adjusted to include all Mg as $MgSO_4 7H_2O$), and ash of insoluble in leather.

2.637 Leather, Veiny

Leather showing marks or lines of blood veins on the grain surface.

2.638 Lecithin

A group of phospholipids naturally occurring, amphoteric phosphatide or triglyceride in which one fatty acid radical is replaced by a phosphoric acid complex. The fatty components confer miscibility with oil and hydrocarbons whilst the phosphoric radical accounts for its hydrophilic character. It occurs in egg yolk, soya bean oil and ground nut oil.

2.639 Levant

Term used to describe leather from goat-, sheep- and seal skins drawn in tannage into a grain pattern. Like ‘Morocco’ this name has come to define a pattern as well as original leather. The word unless followed by ‘grain’ refers to leather from drawn goatskin; embossed goatskin being called ‘Levant grained goatskin’.

2.640 Levelling Agent

Auxiliary syntan, which reduces the affinity of tanning material or dyes on the surface of leather thus preventing the patchiness during tanning or dyeing and helping in uniform tanning or dyeing

2.641 Light Hides

Hides of light weight, a steer hide weighing from 22 kg to 26 kg or a cow hide weighing from 13.5 kg to 24 kg in the green, salted state.

2.642 Lignin Extract

Solubilized lignin by-product of the sulphite paper industry containing mainly lignosulphonic acids as calcium salts. Used in tanning blends to modify the character of the tannin blend and in adjusting pH, etc. Often called sulphite cellulose extract. Lignin extract is a useful adjunct in the vegetable and combination tannins.

2.643 Lignin Sulphonates

Solubilized lignin by treatment with sodium bisulphite. Used along with tannin extract:

a) to reduce cost,

b) to reduce tannin affinity in the initial stages,

c) to prevent sludge formation, and

d) to adjust the *p*H.

2.644 Lime Blast

Formation of patches of insoluble calcium carbonate by the reaction of atmospheric carbon dioxide with the lime present in the pelts when they are exposed to the atmosphere.

2.645 Lime Burnt

Heat damage of pelts due to contact with unslaked particles of lime.

2.646 Lime Fleshing

Fleshing hides and skins after the liming operation.

2.647 Lime Liquor

Saturated solution of lime having excess of undissolved lime which forms a milky liquor on stirring, used in unhairing hides and skins prior to tanning.

2.648 Lime Liquor, Mellow

Lime liquor which has a mellow or mild caustic action and consequently produces less swelling and plumpness. A mellow lime liquor may be a little used liquor or it may be obtained by mellowing fresh lime liquor with ammonium salts.

2.649 Lime Paint

Depilatory solution mixed with slaked lime or china clay to form a thin paint which is applied to the flesh side of sheep, goat or calfskin.

2.650 Lime Paste

Mixture of slaked lime and water of thick consistency.

2.651 Lime Pit

Rectangular brick or concrete pits in which hides and skins are treated with lime liquor; varies in capacity from 1 350

litres to 5 500 litres.

2.652 Lime Process

The process in which hides and skins are treated with lime liquors.

2.653 Lime Soap

Soap formed by the action of lime of oils and fats of hides and skins.

2.654 Lime Splitting

Splitting of stout limed pelts, done on the band knife splitting machine.

2.655 Lime Stains

Stains caused on pelts by lime liquors.

2.656 Liming

Treating raw hides and skins with lime liquor with a view to plumping and/or unhairing.

2.657 Lining, Leather

Leather used for making shoe linings which include sheep, lamb, kid, goat, cattle, calf, kip and splits.

2.658 Lining Shearling

Tanned and dressed sheep or lambskin bearing short wool suitable for use in lining footwear.

2.659 Lipases

Lipases or triacrylglyecrol acryl hydrolyses are enzymes, which hydrolyse triglycerides at an oil- water interface.

2.660 Liquid Dyes

Dyes in a concentrated solution form.

2.661 Lizardskins (Goshap)

Skins of a class of reptiles. The following are different commercial varieties:

a) **Water Lizards or Ramgodi (Varanus Salvator)**

Their skins have beautiful natural markings, for which they are valued. Skins of the mature animals measure 250 to 500 cm in width across the middle. Skins of width from 175 to 250 cm are regarded as under- sized and fetch much lower prices than the mature skins. Ramgodis are available principally in Bengal, and skins from different districts differ considerably in their average size, thickness, markings and flawlessness of the grain. Skins from Dacca and Barisal in Bangladesh are regarded as the best, while those from Sunderbans are smaller in size and thinner in substance and consequently regarded as inferior, though the markings of the Sunderbans skins are often very pretty.

b) **Land Lizards**

These are of three varieties: (a) The oval grained yellows (V. fluvescens) coming mostly from Bengal, are the best as on tanning they yield a stainless leather which is greatly prized for ladies footwear because it possesses pretty oval shaped protuberances on the grain which can be dyed in delicate shades. (b) Bengal Blacks of kalagaddi (Varanus monitor) which are larger in width 175 to 350 cm and stouter. The grains are rounder and smaller than those of the yellows and are black pigmented, the pigment persisting even after tanning. These cannot be coloured into delicate shade and are hence rated lower in value than the yellows. (c) Greyish as well as the yellowish small grained, Sonugadi (Varanus griseus) of UP and Punjab. In size they are like the oval grained yellows but thinner and their grains are small and round. The yellow ones produce a stainless leather but the others remain pigmented with greyish spots even after tanning. They are usually valued even lower than the Bengal Blacks.

2.662 Logwood, Campeachy Wood (Patang)

The heartwood of Haematoxylon campechianum Linn., fam. Leguminosae constitutes the logwood of commerce

which contains haematoxylin, the colouring principle of logwood. It was originally obtained from the Bay of Campeachy, but it is distributed in Central America and Africa. The species H. campeachianum is cultivated in India. The dye extracted from the wood is used for the production of black colour on leather and fabrics, with the help of iron, chromium and titanium mordants (*see* also 'Haematin').

2.663 Loose Grain

Grain whose attachment to corium has been eroded, giving rise to pronounced wrinkles when leather is bent, grain inside.

2.664 Lowenthal Method

A volumetric method of tannin analysis where the tannin is oxidized by potassium permanganate solution, though not very accurate often employed as a routine method in the control of tan liquors.

2.665 Lower Ends

The lower grade goods in assortments.

2.666 Lyotropic Agent

Agents, which can sever H-bonds. Both anions and cations have lyotropic effects for example: Cl- and Ca+. The ions have been arranged in Hofmeister series. Lyotropic agents bring about denaturation of proteins and are responsible for permanent swelling in liming of hides and skins.

M

2.667 Machine Buff — *see* 'Upholstery Leather'

2.668 Maclurin

Maclurin (moringatannic acid), $C_{13}H_{10}O_6$, H_20 and morin, $C_{15}H_{10}0_7$, (flavone) are two natural mordant dyestuff of a yellowish hue occurring in fustic. Morin is prepared by precipitation from an extract of old fustic (*see* also 'Fustic').

2.669 Malpighian Layer

Layer of epithelial cells in the epidermis next to the grain surface of the derma.

2.670 Mange (kharish)

A parasite causing skin disease occurring in animals.

2.671 Mangrove Bark

The term 'mangrove' is used in a wide sense for any of the trees that may constitute the vegetation on the tidal mud flats of the tropics and part of the sub-tropics. While mangrove swamps or forests vary from one part of the world to another, they all have one constant and outstanding feature, namely, the presence of trees of a mangrove family Rhizophoracea especially those belonging to such genera as Rhizophora, Bruguiera, Avicennia and Ceriops. A notable feature of the mangrove trees is the richness of the bark in tannin. In India, several varieties of mangrove occur mainly in the Sundarbans in West Bengal. The more important species of mangrove together with their indigenous names and average tannin contents are given below:

Sl No.	Botanical Name	Vernacular Name	Tan Content of Bark (Percent)
(1)	(3)	(4)	(5)
i)	Rhizophora mucronata Lamk.	bhara kandal	25
ii)	Rhizophora candelaria DC.	----------	25
iii)	Ceriops fagal (Perr.) C.B. Robins. syn. Ceriops candolleana Am.	chauri goran	29

iv)	Ceriops decandra (Griff) Dinghov syn. Ceriops roxburghiana Am.	bara goorun twig bark leaves	19 to 25 9 to 15
v)	Bruguiera Conjugata (Linn.) Merr. Syn. Bruguiera gymnorhizza Lam.	kankra	28 to 35

2.671.1 The tannin content of mangrove is liable to vary a great deal not only between different species but within the same species.

2.672 Mangrove Extract

The name mangrove kutch or 'cutch' used for the tanning extract prepared from the mangrove bark is actually a misnomer but being in universal use it is accepted, the name 'cutch' being originally used for the extract prepared from heartwood of Acacia catechu. Mangrove 'extract' is regarded as the cheapest form of tannin available to the tanner. The average tan content of mangrove extracts (solid) is probably about 65 percent with about 17 percent nontans. The tannin is of the catechol class. It is very soluble and has weight-giving property when used with heavy leather. However, it produces undesirable colour which is very difficult to bleach, and the leather is also inclined to be harsh and thick grained when mangrove is used alone.

2.673 Mangrove Liquor

Liquid extract, reddish brown in colour, extremely astringent and yielding a thin, harsh leather. It is a catechol tan, rich in neutral salts but deficient in acid.

2.674 Marbled Leather

Variety of fancy leather made usually from sheepskins on which a mottled or marbled effect has been produced by dyeing it in different shades of colour at different places.

2.675 Market Hides

Bazar hides as opposed to slaughter house hides.

2.676 Marks, Strain

The loose substance of most sheepskins is liable to damage as a result of undue straining in the process of take-off or curing. The effect is that the grain is damaged and the tensile strength reduced.

2.677 Masked Tanning — Tanning with mineral tanning salt masked either with sodium or calcium salts of organic acids developed by Theis et al in 1940s in the U.S. ensures quicker penetration and even distribution of chrome.

2.678 Masking agent

Weak acids and their salts added during mineral tanning to prevent precipitation of tanning salts.

2.679 Matrix

A mould built on the bed of an embossing press to sharpen the design of the pattern produced on leather by the embossing plate.

2.680 Matt — Dull, lustreless, opposite of glossy.

2.681 Matt Finish — Dull finish.

2.682 Max White

Titanium dioxide ground in a mixture of casein, sulphated castor oil and paraffin oil for use in the fat-liquoring and finishing of white leathers.

2.683 Mean Molecular Weight of Tannins

The value obtained from the depression of the freezing point of the electrodialyzed solution of tannins containing 1 percent to 2 percent of total soluble.

2.684 Meating

Removal of particles of meat from the flesh side of a hide or skin.

2.685 Mechanical Leathers

Leathers used in various sorts of industrial machinery.

2.686 Medical Sheepskin

Tanned shearling used to prevent bedsores and capable of being repeatedly washed and disinfected.

2.687 Medium Buffs

Formerly sometimes referred to as ‘special machine buffs’ (*see* also ‘Upholstery Leather’).

2.688 Medium Lime

Lime liquor through which one pack of hides has passed.

2.689 Metal-free leather

Hide or skin converted to leather, where the total content of all tanning metals (Cr, Al, Ti, Zr, Fe) in the leather is less than or equal to 0,1 percent (mass of all metals/total dry weight of leather)

2.690 Metallic Pigments

Metallic flakes dispersed with a lubricant in an organic solvent to make a paste.

2.691 Metallized Leather —

Leather given a metallic lustre by the application of metallic foils or powders.

2.692 Meter Leather

A special leather made from sheep, goat or calfskins in such a way as to make it air tight. lt is used for measuring bags of gas meters. Also known as ‘Diaphragm leather’.

2.693 Methylamine (Dimethylamine) Liquors

Used as sharpening agents in lime liquors for use on hairy sheepskins for gloving and clothing leathers to obtain silky grain.

2.694 Micelle (Micella) (Collagen)

Ultimate units of the collagen fibrillar structure probably about 0. 000 002 mm in diameter. Each micelle probably comprises 12 polypeptide cross-linked chains.

2.695 Microbes

Micro-organisms like bacteria, fungi and moulds.

2.696 Micro-emulsion

Emulsion in which the particle size of the dispersed phase ranges from 10 V to 60 V.

2.997 Middle Split

Middle layer of a heavy *hide* or *skin* separated from the hide or skin by splitting horizontally in a machine.

2.998 Mill-off Effect

The effect is obtained by removing part of the heavily pigmented coat with a relatively poor adhesion to the crust by dry drumming, when the leathers are completely ally. After milling, a highly resinated penetrating finish coat to seal the surface is applied as top coat.

2.998.1 Alternatively, a base coat with good adhesion maybe followed with a marginally adhering contrasting colour coat and then milled and top-coated, Rota-gravure rolls are now available to obtain Mill-off effect.

2.699 Mimosa

Acacia decurrens Willd., fam. Leguminosae. One of the numerous acacias growing naturally in Australia, also cultivated in South Africa, East Africa and South India and also known as 'Bark Wattle'.

2.700 Mimosa Bark

Commonly known as wattle bark which is the bark of black wattle Acacia mearnsi De Wind. syn. A. mollissima auct. non-Wind. Acacia decurrens Wind. var. mollis Lindl., fam. Leguminosae. It contains about 30 percent to 45 percent tannins and is imported into India for use in vegetable tanning. Same species are now also grown in India also known as 'Bark Wattle'.

2.701 Mimosa or Wattle Extract

Tanning extract made from wattle bark. Atypical commercial extract of bark wattle may approximately have a tannin content of 62 percent and a soluble non-tan content of 20 percent giving a ratio of about 3:1, Wattle is essentially a catechol tanning material. It has a high pH value, a low acid and salt content and a comparatively low viscosity especially in warm solutions. It is largely these attributes that make it suitable for preparing tanning blends suited to almost any purpose.

2.702 Mineral Syntans (Metal Complex Syntans)

High molecular weight resinuous products with liganding sites most suited for irreversible binding of the metals like Cr (III), Al (III) and Zr (IV). These are homogeneous complex mixtures, which will have the advantage of uniform distribution in the leather.

2.703 Mineral Tannage

Tannage effected by salts of chromium, aluminium, iron and zirconium.

2.704 Mirbane Oil

Nitrobenzene having a characteristic odour and preservative property, much used for preserving organic preparations which are likely to go bad on storing, such as leather and shoe finishes.

2.705 Mitten

A glove without fingers.

2.706 Mitten Leather

A variety of durable quality glove leather made from calfskin by the chrome process.

2.707 Mixed Tannage

Tannage effected by a mixture of tan materials. Instead of using an individual tanstuff in bark tanning more than one material is sometimes used in admixture, a practice which has been found to yield very satisfactory results.

2.708 Mocha

A kind of glove leather (*see* also 'Glove Leather').

2.709 Modulus

The tensile stress required to stretch the test piece from the unstrained condition to a fixed elongation.

2.710 Moellon Degras — *see* 'Degras Moellon'.

2.711 Moellon Oil — *see* 'Degras Moellon'.

2.712 Mold

Any one of the saprophytic fungi which form slimy or cottony growths on foodstuffs, leather, etc.

2.713 Molybdate Value

The molybdate value is given by the expression:

$$\frac{(\boldsymbol{b}-\boldsymbol{a})}{\boldsymbol{c}} \times \mathbf{1000}$$

where,

b = weight of the residue obtained from the reaction between molybdated reagent and tannin solution, dissolved in hot water and re-evaporated;

a = weight of the residue obtained after evaporating to dryness 10 ml of filtrate obtained by reacting 10 ml of tannin solution (4 times of the analytical strength solution) and 10 ml of molybdate reagent, a mixture containing 10 percent solution of ammonium molybdate and 15 percent ammonium chloride solution, well mixed and filtered; and

c = actual tannin content as obtained by hide powder method from 10 ml of tannin solution.

2.714 Montan Wax, Lignite Wax

A hard wax obtained by extraction from American and German lignites. It is used as a substitute for carnauba wax and beeswax.

2.715 Monton

A sheepskin shearing tanned and finished for fur purposes.

2.716 Moon Knife

Circular blunt edged knife with a wooden handle in the centre used for softening the leather.

2.717 Mordant Dyestuff

Dyestuff that can be fixed on fibres only with the aid of a mordant.

2.718 Mordants

Substances used for fixing (rendering insoluble) dyes on fibres. They are of two kinds:

a) metallic mordants, for example, aluminium salts, and

b) Tannin mordants.

2.719 Morocco and Morocco Leather

Goatskin leather with a characteristic grain pattern developed naturally or by hand boarding or graining only. The commonest and most characteristic grain is hard grain. By long usage, especially in the fancy goods trade, denotes goatskin of any vegetable tannage that has been hand boarded in wet condition but in the strict sense it should be limited to goatskins tanned exclusively with sumac. Leather made from vegetable tanned goatskins with a grain resembling that of genuine Morocco but produced otherwise than by hand boarding, for example, by embossing or embossing followed by boarding, should be termed ‘Morocco grained goat’, or ‘Assisted Morocco’ and used for book binding, upholstery work, etc. The process for making this leather was originally developed by the Moors of Morocco.

2.720 Moths

Insects of the order Lepidoptera akin to butterflies; their caterpillars feed on leaves and a variety of products including hides.

2.721 Mould — *see* ‘Mold’.

2.722 Mould Green

Mould producing green coloured spores.

2.723 Mould White

Mould producing white coloured spores. Also referred to as ‘bread mould’.

2.724 Mouldy

Covered with or resembling mould.

2.725 Mucilage

A soft jelly-like material of vegetable substances prepared for leather finishing to produce a flexible film on leather.

2.726 Mucins

The viscid secretion of the mucous membrane, proteins, known as gluco proteins which occur in the interfibrillary or cementing substance of hides and skins.

2.727 Muco-protein

Proteins combined with amino sugar type of protehtic groups

2.728 Mud Cow Hides (or Mud Buffaloes)

Cow or buffalo hides thickly plastered with mud during curing by dry-salting.

2.729 Mud Curing

Curing by the use of muddy khari salt. It is alleged that mud sometimes completely replaces the salt.

2.730 Myrobalans

Fruits of Terminalia chebula Retz. fam. Combretaceac containing about 30 percent to 32 percent pyrogallotannin. There are 4 chief market qualities J's (Jubbalpores), V's (Vingolras), B's (Bhimlipatams) and R's (Rajpores). Myrobalan liquor has a bleaching action on leather.

2.731 Myrobalan Extract

The solid extract is prepared by extracting the myrobalan nuts of Terminalia chebula with water and evaporating the extract. The extract has about 55 percent tannin and 30 percent soluble non-tans. The powdered or spray dried extract has a higher tannin content of about 60 percent. Myrobalan extract liquor deposit insoluble matter, that is, bloom, on standing. It is well suited for blending with other tans and is generally so used.

2.732 Myrtan — *see* 'Redunca Extract'.

N

2.733 Nance Process

A process of tanning under high vacuum in which the water is expelled from the pores of the pelt at a temperature of 2 ° C to 27 °C in the form of vapour thus facilitating quick penetration of tan liquor into the pelt.

2.734 Nap

Vertical and fine fibres cut short enough to produce a velvety two-tone effect when a two way stroke is applied by hand.

2.735 Nappa

Soft full grain leather, through dyed and lightly finished.

2.736 Nap Finish

Velvety finish given to the outer surface of leather after the natural grain layer of the leather is removed.

2.737 Nappa Leather

Soft, full grain gloving or clothing leather made from unsplit sheep, lamb, and goat or kid skins. It is usually tanned with alum and chromium salts and dyed throughout its substance. In France and Germany also made from side leather for footwear and leather goods purposes.

2.738 Nappalan

Wool-on sheepskin, finished by coating on the reverse side.

2.739 Nappalan Finish

Finishing on the flesh side of hides and skins.

2.740 Natural Dyestuffs

Vegetable colouring matters. The most important natural dyestuffs used in the tanning industry nowadays are logwood, fistic and perch wood.

2.741 Neradol

Condensation product of formaldehyde with phenol or naphthalene-sulphuric acid used as tanning agent. This was the forerunner of a group of similar substances since prepared and used as synthetic tanning materials.

2.742 Neutralization

Raising the pH of a mineral-tanned leather towards neutral from an acidic zone by treatment with a solution of salt of a weak alkali or buffer mixture.

2.743 Nigrosine

Basic azine dyes strongly chelated to iron that the metal cannot be easily removed. Has deep blue colour very close to black absorption region converting the entire visible range extending into the near IR also. In conjunction with phenolic bodies, they give very deep black colour. Produced as amorphous powder. Soluble in dimethyl formamide, dimethyl sulfoxide, chloroform or equal mixtures of lower alcohols and lower aromatic hydrocarbons. Soluble in pure aromatics or alcohols only in the presence of some fatty acids.

2.744 Nitrocellulose Finish

Solutions of specially manufactured nitrated cotton and a resin and plasticizer in a solvent ester usually butyl acetate. The product can be diluted with methylated spirit, toluol or petroleum solvents and the resulting solution may be sprayed on to the grain surface of the dyed leather and dried to give a waterproof finish.

2.745 Non-tan

Part of total solubles in tannin extract solution. Usually a sugary matter contains gallic acid, soluble mineral salts and other acids which do not possess tanning property and are not absorbed by the hide powder but gives weight and fullness to the leather.

2.746 Non-tannin — same as ‘Non-Tan’.

2.747 Novolaks

Thermoplastics, soluble phenol formaldehyde resins obtained by use of acid catalysts of excess phenol; can be cured to thermosetting, insoluble form with hexamethylenetetramine. Used principally in finishing leather.

2.748 Nubuck

Leather snuffed (buffed) to give velvety effect, where the original grain pattern is still visible.

2.749 Nut, Gall — *see* ‘Gall Nuts’.

O

2.750 Oak Bark

An important tannin material much prevalent in European countries. In the UK the two most common oaks, serving as traditional material for the tanner have been, *Quercus robur Linn. syn. Q. pedunculatia Ehrh and Quercuspetraea Liebl. Syn. Q, sessiiflora Salisb., fam. Fagaceae*. In general the tannin content of English oak bark varies from 8 percent to13 percent. Oak bark tannin is predominantly a mixture of pyrogallol and catechol tannin.

2.751 Oak Bark Tannage

Tannage with oak bark in pits without hot pitting for 5 months to 6 months by a process embodying layering for not less than 3 months.

2.752 Oak Tanned Leather

Leather tanned with oak bark or extract in combination with other types of tanning materials.

2.753 Oak Wood

Wood of the oak tree, particularly those found in Yugoslavia used for tanning purposes. It is fairly astringent and is rich in sugary matter.

2.754 Oak Wood Extract

Tannin extract from the heartwood of oak particularly from the two common European oaks *Quercus robur Linn. and Quercus petraea Liebl. syn. Q. sessilliflora Salisb., fam. Fagacea* containing usually 6 percent to 9 percent of tannin. Formerly the extract obtained was marketed in the liquid form (tannin content about 26 percent) later in the solid form (tannin content 60 percent to 65 percent). It yields dark coloured leather than oak bark. Used mainly for the tanning of sole leather and other heavy leather which yields good weight and renders water resistance properties. Oak wood extract is a tannin of the pyrogallol class. It is usually mixed with other tanning materials in order to obtain modified of colour.

2.755 Ochre

Also called yellow ochre, oxide yellow, Chinese yellow. A natural pigment consisting of hydrated oxides of iron and manganese mixed with clay and sand. The term is frequently restricted to a pale yellowish brown variety.

2.756 Offal

The less valuable parts of a hide such as the heads, shoulders and bellies.

2.757 Oil, Birch

Oil obtained by the distillation of birch tar, consists of phenols, guaiacol, cresol and xylenol. Also used in medicine and as a disinfectant.

2.758 Oil, Castor — *see* ‘Castor Oil’.

2.759 Oil Chrome Leather — Chrome side leather dipped in molten paraffin wax.

2.760 Oil, Cod Liver

Yellow brown oil obtained from the liver of the cod used in tanning and currying of leather and also in medicine.

2.761 OiI Croton

TigIium oil, obtained from seeds of *Croton tiglium Linn., fam. Euphorbiaceae*. Brownish yellow oil of poisonous nature, used as denaturant for curing salt.

2.762 Oil, Dark Brown Cod — Poorer quality cod liver oil mostly used by tanners.

2.763 Oil Dressing

The process of tanning with animal oils, which are used in the manufacture of certain soft leathers particularly chamois skins after undergoing the preparatory processes, are impregnated with the oil by heating or kneading in a machine known as ‘stocks and kickers’.

2.764 Oil, **Drying**

An oil that thickens or hardens on exposure to air.

2.765 Oiled Leather — Leather which has been treated with oil.

2.766 Oil of Eucalyptus

An essential oil distilled from the leaves and branchlets of *Eucalyptus globulus Labill., fam. Myrtaceae* and used as an antiseptic in leather finishes.

2.768 Oil, Fatty

Fat which is liquid at ordinary temperature.

2.769 Oil Fish

Drying oil obtained from all parts of different species of the common fish.

2.770 Oiling Off

The process of rubbing oil on the grain side of wet or sammed leather with the object of making the leather soft and in the case of vegetable tanned leather, preventing the colour of the tannages from darkening by oxidation which it will do if the surface is not protected from direct exposure to air by a thin coat of oil before drying. Practically, all vegetable tanned leathers are oiled off before dyeing, fat liquoring and striking out. A chrome tanned leather is oiled off after dyeing, fat-liquoring and striking out.

2.771 Oil, Linseed (Flaxseed Oil) — A yellow to brown oil obtained by expression or solvent extraction of the seeds of the flax plant *Linum usitatissimum Linn., fam. Linaceae*. Used in the manufacture of paints, varnishes lacquers and for other purposes. Much used in patent leather manufacture.

2.772 Oil, Mineral — Earth Oil, petroleum.

2.773 Oil, Mustard

A fatty oil from seeds *of Brassica nigra (Linn.) Koch B. hirta Moench. syn. B. alba Boiss.; B. alba Hook. f. and Thorns. fam. Cruciferae*.

2.774 Oil, Neatsfoot (Bubulum Oil, Hoof Oil)

Pale yellow liquid obtained from shin bones and hooves of cattle, used in leather manufacture as a lubricating and waterproofing agent. Much used for fat-liquoring glazed kid after emulsification with soap or after sulphation.

2.775 Oil Pull-Up

Two-tone effect observed when a leather is pulled up; the lighter colour at the place of application of force is due to differential distribution of oil caused by the pulling force. Made by brushing suitable non-volatile oil of low viscosity and high refractive index on dyed crust leather followed often by a resin, protein or PU finish.

2.776 Oil, Rape

Brownish yellow oil obtained from rape seed *Brassica campestris Linn. var toria Duthie and Fuller fam. Cruciferae* which is the source of the Indian rape oil.

2.777 Oil-Seal Leather

A highly specialized impregnated heavy leather with high resilience to heat for use in mechanical equipment where oil leakage has to be prevented.

2.778 Oil, Shark Liver — Oil extracted from the liver of shark.

2.779 Oil, Sod — *see* ‘Sod Oil’.

2.780 Oil, Sperm

Sperm whale oil. A light yellow liquid which is a true wax even though a Iiquid. Used as a high grade lubricating oil. In the leather trade, it is used for the manufacture of raw hide pickers and also as an oiling and fat-liquoring constituent.

2.781 Oil, Sulphated

Product of treatment of vegetable, animal or fish oil with sulphuric acid with subsequent washing and neutralization and used as emulsifier, wetting and softening agent. These oils are also commonly known as sulphonated oils though the term is a chemical misnomer.

2.782 Oil Tannage

Process of tanning with animal oils, used in the manufacture of certain soft leathers particularly chamois and certain kinds of buckskin. Generally, fish oils are used for this purpose.

2.783 Oil Tanning

A process of tanning involving the incorporation of fish or marine animal oils into prepared skins. These oils are subsequently induced to undergo oxidation and other chemical changes in contact with the skin fibres, leading to

chemical combination of oil derivatives with the skin.

2.784 Oil, Turkey Red — Sulphated castor oil.

2.785 Oil-Wheeling

Drumming sole leather after extracting, tempering, bleaching and rinsing with various materials to increase the yield of leather and improve its properties.

2.786 Ooze Calf

Chrome tanned calfskins are finished into several kinds of fancy leather.

2.787Ooze Finish — *see* 'Suede Finish'.

2.788 Ooze Leather

Prepared by snuffing the grain until it has a soft velvety appearance.

2.789 Open Vat Extraction — Process of extraction of tannin carried out in open vats.

2.790 Organic Pigments

Organic dyes insoluble or insolubilized to act as pigments, brighter, purer and richer in colour than their inorganic counterparts but more susceptible to sunlight, chemical attack and bleeding and also expensive than inorganic based.

2.791 Organic-tanned leather

Hide or skin converted to leather by natural or synthetic organic tanning agents, where the total content of tanning metals (Cr, Al, Ti, Zr, Fe) is less than or equal to 0,3 % (mass of all metals/total dry weight of leather).

2.792 Organ Leather

Various types of leather used for organ pipes, also manufactured from the caecum or blind gut of animals.

2.793 Orthopedic Leather

A general term for the types of leather in the manufacture of artificial limbs, braces etc. for orthopedic purposes. The leather may range from Chamois and horsehide glove to case and strap leathers.

2.794 Osmotic Swelling

Swelling caused by the osmosis of water into the hides and skins when the latter are immersed in acid or alkali solutions.

2.795 Oxazolidine

N and O containing heterocyclic compound used either as a pretanning agent or along with chrome. Leathers pretanned with it can be degreased at higher temperature. When used with chrome it serves to exhaust the bath.

2.796 Ozokerite, Ceresin Wax, Earth Wax, Mineral Wax, Cerosin,Cerin

Natural wax of white, yellowish black or green colour occurring in the vicinity of coal in GaIicia, Poland, Utah, Wyoming and other places. Soluble in benzene, turpentine, carbon disulphide and other organic solvents. It consists of paraffin hydrocarbons and is used in the manufacture of candles, sealing wax, paints, polishes, waxed paper, bottles for hydrochloric acid and in ointments.

P

2.797 pH — Negative logarithm of H^+ ion concentration of a solution, Actually pH increases with OH^-ion concentration. At pH = O, the H^+ concentration is unity and when this concentration is minimum the pH is actually negative. This scale was devised by Sorensen in 1909 and introduced in leather industry in 1911 by Wood and colleagues. pH changes indicate the charge profile of hide/skin/leather and hence very important in the penetration and fixation of charged species by the amphoteric collagen/leather. Neutral pH is 7.0. Below 7.0 is considered as acidic and above 7.0 as alkaline.

2.798 Packing Leather — *see* 'Hydraulic Leather'.

2.799 Paddle

A rotating system of radial wooden planks fitted to wooden circular plates at the two ends. The paddle is partly immersed in a pit containing the liquor and stock being processed and provides the much needed agitation when it rotates.

2.800 Painted Hides

Hides, the flesh sides of which have been treated with a lime-sulphide mixture.

2.801 Painting

The application to the flesh side of raw hides and skins of lime paint which is a mixture of slaked lime, water and sodium sulphide or sodium hydrosulphide.

2.802 Pancreatic Ferments

Enzymes, chiefly trypsin, present in the pancreatic juice. The pancreatic ferments have an efficient bating action on hides and skins and in fact are the constituent of the artificial bates of the trade. Some of these ferments have also been found suitable for unhairing hides.

2.803 Pancrcatin

Enzymes chiefly trypsin obtained from the pancreas of an animal.

2.804 Pan Scale

Calcium sulphate from brine crystallization used in cattle feed and as a fertilizer.

2.805 Paperiness

Emptiness of leather due to less filling up or due to lack of substance.

2.806 Parchment

Dry, translucent or opaque untanned hide or skin material.

2.807 Pasting (Paste Drying)

Drying damp leather in a stretched out condition by pasting leather, with the flesh side up, with an adhesive to a smooth glass or enameled plate. Pasting imparts to leather a smooth grain surface and a larger area than drying by toggling or nailing.

2.808 Patent Leather

Leather with generally a mirror-like effect, obtained by application of a layer of pigmented or non-pigmented varnishes, or synthetic resins, whose thickness does not exceed one third of the total thickness of the product.

Note

1 The term patent split leather also exists.

2 Varnishes and lacquers are usually based on linseed oil, nitrocellulose, polyurethane and/or other synthetic resins.

2.809 Pattern

The shape given to a hide in flaying or curing.

2.810 Pattern of Hide

Contour of a hide when spread out flat.

2.811 Pattern, Poor

An outline or contour of a hide or skin which when spread out flat does not conform to the standard or correct pattern adopted by the trade.

2.812 Peach Wood — *see* ‘Brazil Wood’.

2.813 Pebbled Grain

Denotes the wrinkled grain that is likely to be formed when fallen hides are in an extended condition and are put in a paddle for tanning. The free motion in the paddle favours the formation of pebbled grain.

2.814 Pebbling Machine

Machine used for making the leather smooth by working with a marble slicker.

2.815 Peccary — *see* 'Glove Leather'.

2.816 Pelt

Hide or skin prepared for tanning by removal of the hair or the wool, epidermis and flesh

Note The term pelt can also be used for the skin of an animal with fur or hair still on it.

2.817 Pelt Weight

Weight of hides and skins in the limed condition or in any condition after liming and before tanning.

2.818 Pendulum Jigger

Pendulum glazing machine which can also be worked by hand.

2.819 Penetration Time — Duration of flexing in minutes which is just sufficient to cause water to penetrate from the wetted (grain) surface to the other face of the material.

2.820 Pepper Box

The pattern produced on grain surface of leather from grubby hides which often resembles buck-shot marks.

2.821 Percentage Basicity

The number of hydroxyl groups borne by a chromium unit as a percentage fraction of the same resent in chromic hydroxide.

2.822 Permanent Swelling

Swelling brought about by Iyotropic agents (*see* 'plumping').

2.823 Persian Morocco

Hair sheepskin with morocco grain, natural or embossed. The term is applied in bag trade to sheepskins and in the book trade mostly to goatskins (as distinguished from 'Turkey Morocco') but it should be correctly confined to hair sheepskins.

2.824 Persian Skiver

A thin grain layer split from an E.I. tanned sheepskin after dressing.

2.825 Phenoloxidase

An enzyme used for oxidizing tannins. Obtained from the Ieft colleterial gland of cockroach, *Blatta orientalis*, which secretes a watery solution of a non-coagulable protein in which lipids are absent, but which contains a phenoloxidase.

2.826 Phosphate Tan

Phosphates can be used to tan pelts; polymeric sodium metaphosphates have superior properties. Polyphosphates may be employed as pretannage. Phosphates can also be used as sequestering agents.

2.827 Phosphorated Oils

Oils treated with phosphorus pentoxide to endow them with special characteristics.

2.828 Phlobaphene

Red coloured deposits formed by condensed tanning materials due to acid-induced polymerization.

2.829 Phosphate Fatliquor

Fatliquor in which the oil has been trans-esterified with phosphoric acid.

2.830 Phosphate Oils

Made by trans-esterification of an oil with phosphoric acid to replace some of the fatty acids of the oil. The chief advantages of these are:

a) They can react with collagen as well as mineral tanning agents like chromium and aluminium. Being reactive lubricants thus, the desired degree of lubrication can be had with lesser amount of phosphate oil.

b) They can hold four times more raw oil than sulphited /sulphated oils and hence can impart greater fullness to leather.

c) Moreover, they can act as fire-retardants too.

2.831 Piano Leather

A name covering special quality leathers used for various purposes in the manufacture of pianos both manual and mechanical. The leathers are made from selected skivers, full grain sheepskins or deerskins.

2.832 Picking Band Leather

Specially tanned leather used for cutting into various types of leather straps called picker straps or picking bands used in textile mills.

2.833 Pickling

Treating the pelts, hides or skins with acid and salt to lower the *p*H.

2.834 Plush Wheeling

Hand polishing using a rotating wheel with a grinder stone/plush cloth.

2.835 Pre-metallized Dyes

Azohydroxy/azomethine dyes complexed with chrome prior to application to the substrate to be dyed.

2.836 Pickled Skins

Skins after pickling process, wherein they are treated with acid and saturated brine solution.

2.837 Pigment (Colouring Matter)

A finely ground opaque coloured material insoluble in water often added to leather finishes to provide colour and to mask defects in the grain surface of the leather.

2.838 Pigment Finishes

Finishes and coating colours made from either mineral pigments or from lakes, used for the production of level shades of colour on leather and are extensively used in the finishing of leather.

2.839 Pigmented Leather

Leather whose natural grain or surface is completely concealed with a finish containing pigments

Note The term pigmented split leather also exists.

2.840 Pigskin

Skin of a young swine, generally used for the manufacture of saddle leather, fancy leather goods and other purposes (*see* also ‘Glove Leather’).

2.841 Pigskin Strips

Rectangular pieces of pigskins obtained from lard containing portions of the animal, the rest of the skin being usually left on the meat. These strips are used by tanners.

2.842 Pine Bark

Among the true pines, *Pinus spp., fam. Pinaceae*, many species are known to contain tannin in the bark, the amount varying from less than 5 percent to over 20 percent in a few instances. The bark of the *chir* pine, *Pinus roxburghii Sarg*. a common tree in the Himalayas has been used in that region for local tanning. It may contain from 11percent

to 16 percent tannin. Pine bark of other *Pirnus spp*., has also been used locally for tanning in Northern Europe, North America, New Zealand, South Africa and Australia. It gives a light colored leather with a fine pine oil smell.

2.843 Pinholes

The wool follicles of sheep with dense wool that go deep into the substance. If the wool is not sufficiently loosened some of the grain tissue is dragged away when the wool is pulled, causing pinholes.

2.844 Pinned Belly (Pinned Shoulder)

Set out and rolled leather made from a vegetable tanned cattle hide belly or shoulder.

2.845 Pin Seal or Pin Grain

Natural grain of high grade sealskin tanned for fancy leather; also imitated on sheepskins, goatskins, calfskins and cow hide which should be described as ‘pin grain Sheepskins’ or ‘pin grains’.

2.846 Pipey — *see* ‘Grain, Pipey’.

2.847 Pit Liming

A traditional method in which hides and skins are limed in rectangular brick or concrete pits varying in size from 300 liters to 50 000 liters according to the class of goods to be processed. The pits may be dug up to ground level or maybe built above the ground. They are provided with waste exits or the liquor removed by pumping. The smaller pits are used for skins and larger ones for hides.

2.848 Pit Tannage

Tannage, especially of sole leather, performed in pits.

2.849 Pitted Leather

Leather with holes larger than pinholes caused by bacterial action on leaving the skins too long in the soak pits in warm weather.

2.850 Plastered Kips — Dry-salted kips.

2.851 Plastic Patent

A material made from vinyl resins or other materials to resemble patent leather. According to the US Federal Trade Commission ruling, the use of term ‘Plastic patent leather’ is incorrect.

2.852 Plasticizer

A material added to a solution or mixture for the purpose of softening (or rendering plastic) the film obtained on drying the mixture. Cellulose lacquer solutions invariably dry to form harsh or brittle films on leather but if mixed with a plasticizer, the film becomes pliable and non-cracky. Plasticizers have generally high boiling points and hence they remain in the film, ensuring plasticity. These are generally high boiling liquids like tricresyl phosphate, diamyl tartrate, ethyl citrate and others. Sulphated oils can be used as plasticizers in aqueous leather finishes.

2.853 Plating

Producing a smooth grain surface on leather by pressing it on a bed with a smooth heated metal plate under very high pressure.

2.854 Pleating — Folding, braiding.

2.855 Pliable — Supple, flexible.

2.856 Plump — Fat and distended

2.857 Plump Hides

Stout and substantial hides. Swelling of the pelt imparting, a rubbery feel and elasticity.

2.858 Plumping

Softening and swelling of hide fibres containing a little amount of water. Plumped pelt is a bit elastic.

2.859 Plumping Agent

Chemicals causing plumpness.

2.860 Plumping Power

Capacity for causing plumpness.

2.861 Plush wheeling

Hand-polishing using a rotating wheel with a grinder stone/plush cloth.

2.862 Pocca Marks — *see* 'Goad Marks'.

2.863 Poky Hides

Hides bearing marks of the ravages of ticks. Also called ticky hides.

2.864 Polyphenols

A constituent of all parts of plants. Synonymous with gallic acid, tannins.

2.865 Pungam Oil — *see* 'Karanj Oil'.

2.866 Poor Pattern — *see* 'Pattern, Poor'.

2.867 Post Mortem Changes

Chemical and structural changes that naturally occur, in a hide between the time of slaughter and that of the curing or other preservative operations.

2.868 Pressing

Removing the bulk of water from wet leather by means of a hydraulic press.

2.869 Pre-tanning

Preliminary tanning carried out prior to main tanning with an objective of avoiding casehardening and for acceleration of tanning.

2.870 Procter Extractor

An apparatus employed for the preparation of extracts of the solid tanning materials.

2.871 Primes — The best selections

2.872 Printed Leather

Leather bearing a surface pattern produced usually by embossing, but sometimes by other methods.

2.873 Pritch Pole

Pole used to hold the carcass of an animal upright during flaying.

2.874 Proctor's Basicity

The amount of sulphate in grams associated with 52 grams (1 gram-atom) of chromium in a chromic salt used for tanning.

2.875 Prod Marks

Marks caused by a pointed instrument like a goad or an awl.

2.876 Proteases — Enzymes which act on proteins

2.878 Protected Leather

Leather treated with certain special chemicals to circumvent deterioration or oxidative damage on exposure to air or light. The treatment is often applied to vegetable tanned upholstery and bookbinding leather.

2.879 Puer or **Puering** — Infusion of dog dung used for bating.

2.880 Pulled Skins

Skins from which wool after being loosened in fellmongering, has been removed by painting or sweating.

2.881 Pulling Over

A term applied to the removal of the wool, loosened in fellmongering, by painting or sweating. The wool is actually pushed off by hand and sorted as it is removed.

2.882 Pulling Over Machine

A machine to pull off the wool from sheepskins.

2.883 Pullmen and Payne Process

A process of formaldehyde tannage in an alkaline bath for the manufacture of white leather.

2.884 Pull-up leather

Leather that, by design, lightens in colour when stretched.

2.885 Pumicing

Removal of long fibres and smoothening the leather surface by rubbing with pumice stone. The leather is coated with a suitably boiled linseed oil preparation.

2.886 Pump or Engine Leather

Rolled hard vegetable tanned leather derived from cattle hides.

2.887 Pure Dressed

Curried leather, without adulterants to give extra weight and that has been dressed by hand with dubbin.

2.888 Purity of Tan Material

Parts of tannin per hundred parts of water soluble solid matter in a mixture containing vegetable tanning materials. Also parts of tannin per 100 parts of water.

2.889 Pyrogallol Tannins

Name applied to a class of tannins which produce blue black coloration with ferric salt and deposits an insoluble substance known as bloom on the leather. Also produce acid by fermentation in the tan liquor which influences tanning.

2.890 Pyroxylin

Nitro-cellulose (11 percent to 12.5 percent Nitrogen) used for making lacquers; shipped always with about 30 percent by weight of alcohol to prevent explosion.

Q

2.891 Quebracho

The trees exploited for tanning under the name of quebracho and of commercial importance are:

a) Schinopsis balansae Engl., fam. Anarcardiaceae, and

b) Schinopsis lorentzii Engl.

They are closely related trees, their heartwood being rich in tannins; *S. balansae* containing 20 percent to 25 percent and *S. lorentzii* an average of 16 percent to 17 percent of tannin.

2.892 Quebracho Wood Extract

The solid extract is dark brownish-black and contains 62 percent to 63 percent tannins and 7 percent to 8 percent of non-tannins. It belongs to the catechol class.

2.893 Quercitannic Acid

Tannic acid from the bark of *Quercus coccinea Muenchh. fam. Fagaccae* used in tanning and dyeing.

2.894 Quercitron Bark

Derived from two Central American oak trees. *Quercus velutina Lam. syn. Quercus tinctoria Bartr. and Q. nigra Linn, fam. Fagaceae*, yield two yellow dyestuffs on infusion. One of the pigments is quercetin ($C_{15}H_{10}O_7$, H_2O) which is an isomer of morin. Quercitron bark extract is often used in conduction with haematin in order to provide a more jet black colour.

2.895 Quinone

Para-benzoquinone, a yellow compound which is fixed by hide substance from solutions, at about pH 8 and yields a leather of high shrinkage temperature and water resistance. Low yields and the high cost of its synthetic production have prevented its commercial exploitation.

R

2.896 Radiation Curing

Insolubilizing finish films (formed of aqueous dispersions) using radiation, either UV or Electron beam.

2.897 Ramgodia — *see* 'Lizard Skins'.

2.898 Randall and Stickney Gauge

Trade name for a precision gauge for measuring the thickness of leather accurately to 0.025 mm.

2.899 Range, Butt or Bend

In respect of sole leather, a butt or bend range is a strip of sole leather of convenient width cut from a butt or bend at right angles to the back bone. In respect of other hide leathers, a butt range is a strip of hide leather of convenient width cut from the fore end of a butt usually after tanning but sometimes before tannage.

2.900 Rapid Tanning

Tanning made quicker than by the usual methods; in respect of Vegetable tanning, Vacuum Process, Pressure Tanning, Bag Tanning, Pre-Tanning prior to regular vegetable tanning, Drum Tanning and Colloidal Tanning are the available methods for the purpose. In respect of chrome tanning, Pickle less/ Masked Tannage, Dry/Powder Tanning and Injection Tannage procedures are resorted to.

2.901 Raw Hide

Hide which has only been treated to preserve it.

2.902 Raw Hide for Mechanical Use

Cattle hide that has been dehaired and limed, often stuffed with oil and grease, and has sometimes undergone other preparatory processes but has not been tanned. Raw hide is used principally for mechanical purposes for belt lacings and pins, loom pickers, gaskets, pinions and gears. Some raw hide is dressed with hair left on.

2.903 Raw Hide Belting Leather

Semi-tanned cattle hide leather suitable for manufacture of high speed machine belting.

2.904 Raw Hide Lace

Buffalo hide, limed, dehaired, dried out and lightly oiled.

2.905 Raw Hide for Luggage

Translucent material made from the grain side of cattle hides freed from hair and the flesh layer, and dried out in the limed state usually without any tanning process being applied. The surfaces of luggage made from it, are usually varnished to give protection from moisture.

2.906 Reactive Dyes

Dyes, which can react with the groups of the substrate (for example, Triazinyl dyes).

2.907 Real Meherpore Cure Hides

Hides cured by the application of a very light coating of khari salt without any intention of increasing weight.

2.908 Red Heat

Coloration usually red, which appears on the flesh side of salted raw hides and skins. The stains do not generally damage the hide or skin. The organisms responsible for red heat are not found on the raw hides or skins but are introduced through the use of certain marine salts. Two, types of bacteria have been isolated; a red *sarcina* and a yellow one, belonging to the sub-genus of the genus *sarcina fam. Micrococceae*. Red *sarcina* is non-proteolytic but the yellow one is proteolytic and can liquefy gelatin.

2.909 Reds

Phlobaphenes, that is, red or brown colouring matter from barks.

2.910 Reducing Agent

In tanning, the name is applied to sugar, molasses, hype, sulphur dioxide, etc, which are used to reduce hexavalent chromium into trivalent chromium for making chrome liquor or basic chromium sulphate powder for chromium tanning.

2.911 Redunca Extract

'Redunca', 'Wandoo' or 'myrtan' is a solid extract, obtained from the wandoo tree, *Eucalyptus wandoo* Blakely syn. *E. redunca var. elata* Benth,, fam, Myrtaceae of Western Australia, Both the bark and wood are used as commercial sources of tannin which consist mainly of the pyrogallol class with a small proportion of catechol materials. The tannin in the bark may vary from 13 percent to 21 percent and for the wood from 8 percent to 13 percent. A solid extract (myrtan) produces a pale coloured solid firm leather.

2.912 Red Woods

These dye woods are divided into 2 classes:

a) **Soluble** — which comprise brazil, pernamhuco or fernambuco wood, peach wood, lime wood, sappan wood, bimas red wood and nicaragua wood. All of them contain the colouring principle, brazilin, ($C_{16}H_{14}O_5$) which by oxidation is converted into brazilein, ($C_{16}H_{12}O_5$) giving purple shades with chrome mordants and crimson with alum.

b) **Insoluble** — comprising cain wood or cambe wood, bar wood, saunders wood, sandal wood, bresille wood and caliator wood. The dyeing principle is santaline. These woods have a limited application for dyeing wool with aluminium, chrome, tin, or iron mordants.

2.913 Rein Back

Harness or bridle leather in the form of a back, usually of good selection, curried and having a close shaved flesh.

2.914 Rein Leather

Leather for the strap of a bridle.

2.915 Rejects

The term usually refers to material that have been discarded or no commercial value. Badly cut, branded, worm damaged and marked hides, having more flaws than deads.

2.916 Reliming

Putting the stock after unhairing into fresh lime liquors in order to:

a) Plump them for easy fleshing

b) Open up the substrate for quick penetration of reagents in subsequent processes

c) Condition the stock for the required degree of softness.

2.916.1 Reliming can be accelerated for the required degree by sharpening the lime liquor by the addition of an alkali like caustic soda.

2.917 Rendering

Separating fats from protein connective tissue and other water insoluble substances by treating small pieces of animal

matter with hot water or steam.

2.918 Reptile Skins

Skins of the class of animals namely snakes, lizards, turtles, crocodiles, etc.

2.919 Resilience of Leather

It is measured by percentage rebound of a standard plunger dropped onto the leather surface under standard conditions.

2.920 Resin Dispersion

Aqueous dispersions of methacrylate and other acrylate resins have a milky appearance and acid reaction and can be diluted with water or mixed with aqueous dispersions of casein, pigment finishes, binders, etc. Commercial dispersions contain from 30 percent to 40 percent of a highly polymerized acrylate resin. As the resin is thermoplastic, the finishes when dry on the leather cannot be glazed by the glazing machine or ironed by hot iron and they are usually hot plated by a leather press. These resin dispersions were first used as an undercoat for nitrocellulose finishes in the manufacture of upholstery leather to prevent the migration of the plasticizer from the nitrocellulose film into the leather and thus making the nitrocellulose film brittle. It has also been used along with aqueous pigment dispersions for application to well snuffed or corrected leather grains and also in mixtures with water pigment dispersions, which are then applied to leather, dried, and rendered fast to wet rubbing by the application of a colorless, nitrocellulose lacquer top coat.

2.921 Resin Finished

Leather with a pigment finish, incorporating a synthetic resin binder.

2.922 Resin Tannage

Filling the hide/skin with synthetic resins like urea-formaldehyde, melamine formaldehyde etc.

2.923 Retanned Leather

Same as ‘Combination Tanned’.

2.924 Reticular Tissue

This tissue holds the collagen fibers in bundles and consists of very fine filaments running in all directions and forming a network.

2.925 Reversed Calf

Calf leather of heavier weights finished on the flesh side with oils to make it more water resistant than suede. It is used for shoes where a nappy sport leather is required. Originally called ‘Trench Calf’ in England; the term ‘Hunting Calf’ is also used. The term ‘Service Leather’ is used but is generally applied to splits and side leather.

2.926 Reverse Setting — Setting in opposite directions.

2.927 Ringworm Damage

Circular scars in calfskins caused by a fungal skin disease.

2.928 Ripping Knife

Knife designed for easy opening of a hide or skin before flaying, similar to the flaying knife but having a straightened cutting edge, also useful for slaughtering, bleeding, eviscerating, etc.

2.929 Roan

Sumac tanned sheepskin of medium size, used for a variety of purposes and finished to suit particular requirements. Skins which are loose or pipey on the grain are usually embossed. Finishes known as ‘hard grains’, ‘straight grains’, etc, are produced by embossing and subsequent boarding. Tight grained roans are often finished without embossing.

2.930 Rocker

A device for moving leathers hung in a frame, up and down, so as to prevent kiss spots.

2.931 Rolled Bellies — Compressed bellies.

2.932 Rolled Leathers — Compressed leathers.

2.933 Rolled Sides — Compressed sides.

2.934 Rolled Splits — Thick splits rolled into stiff leather for making insoles.

2.935 Roller Basil

Leather with a smooth finish, a specially fine grain and a compact firm structure commonly natural coloured but sometimes dyed red, made from hill sheep, vegetable tanned and designed to be suitable for covering the drawing rollers of cotton spinning machinery and for other purposes, such as book binding for account books.

2.936 Roller Coater

The same as those used in printing industry, both direct and offset; adopted by leather industry in 1960's; useful for simple application of finishes, tipping of embossed leathers and printing fashion designs. Roller coater was first employed in split leather finishing.

2.937 Roller Leather

Leather made from sheep skins tanned by vegetable process and finished so as to have a smooth and plain grain and even substance. This leather is much used for rollers of cotton spinning machinery.

2.938 Rolling

Subjecting heavy leather to the action of a smooth brass or gun metal solid cylinder which moves on the grain surface of the leather under considerable pressure. The action makes the surface smooth and stiffens the feel. Light leathers are also rolled with a little pressure with the object of smoothening the grain surface but not stiffening the feel.

2.939 Rolling Machine

Machine used for compressing leather by means of a heavy roller.

2.940 Rolling-Off

The operation of the final rolling of sole leather under heavy pressure, when the latter has been completely dried out.

2.941 Rolling-On

The operation of rolling sole leather when the latter is in an evenly damp condition.

2.942 Root of the Tail

The point where the tail is joined to the body.

2.943 Rosin Colophony

Sticky light yellow to red brown product obtained by distilling off the more volatile turpentine from the oleoresin of the pine trees, *Pinus spp*. to produce water proofness and tackiness in leather as in golf grip leather.

2.944 Rough Rounding Tanned — Crust tanned, half tanned.

2.945 Rough Tanned Leather — *see* 'Crusts' ('Crust Leather').

2.946 Rounding

The operation of cutting off the offal, that is, the bellies and the shoulder from the substantial portion of a hide, namely the butt. It is usually done after the hides have been unhaired by liming. Only the hides meant for the manufacture of heavy leathers like sole, belting or picking bands are rounded. The butts are given a superior tannage and the off also go through a cheaper tanning process.

2.947 Rounding Machine

Machine for cutting the offal from the butt.

2.948 Round Spots

Rings of a thickness of 2 mm to 3 mm and an outside diameter of 1 cm, appearing after removal of the hair.

2.949 Rub Fastness

Fastness to rubbing, with a felt pad, either dry or wet.

2.950 Rub-Off Finish

Two-tone appearance made by partial removal of the top colour so that the bottom colour shows up. To achieve this first the leather is finished in one colour and fixed with a lacquer coat. Then a second colour coat is applied, dried and wiped out partially when dry. The second coat is subsequently fixed with a topcoat.

2.951 Run

Elastic stretch of leather in one direction.

2.952 Run Pelts

Sheep skins dewooled by sweating whose grain surfaces have been pitted or liquefied in spots by worm-like organisms.

2.953 Russet

Vegetable tanned leather used for making military boots dressed in its natural colour and finished on the flesh side (*see* 'Ammunition Leather' and 'Army Grain').

2.954 Russet Calf

Vegetable tanned calf leather with a russet finish.

2.955 Russet Harness

Completely finished leather of bright, clean, uniform colour and finish.

2.956 Russet Lining

Vegetable tanned leather having a russet colour made from sheep, goat or calf.

2.957 Russet Sheepskin

Leather tanned in cold leached hemlock bark extracted, used for shoe linings with colour resulting from the hemlock.

2.958 Russet Upper Leather

Vegetable tanned cow hides with russet finish.

2.959 Russia Calf

Smooth finished dyed calf leather scented with birch tar oil, vegetable tanned and made in imitation of the old fashioned genuine 'Russia calf' which was a calf leather tanned with the bark of willow, poplar and larch, curried on the flesh side with a mixture containing birch tar oil giving it a characteristic odour. lt would be generally dyed as red.

S

2.960 Saddening

Producing a dull shade in the dye bath by adding special substances.

2.961 Saddening Agent

A substance, the addition of which to the dyeing produces a duller shade of colour.

2.962 Saddle Leather

Leather used for making saddles usually made from vegetable tanned cattle hide.

2.963 Saffian Leather

Soft goatskin leather similar to Morocco leather.

2.964 Sal Bark

Bark of the trees *Shorea robusta Gaertn*. and Shores siamensis Miq. fam. Dipterocarpaceae; found in India and Siam. Contains about 10 percent tannin and used locally in tanning.

2.965 Salem Myrobalan

Myrobalan nuts produced around the district of Salem in Tamil Nadu State yield a paler coloured tannage than any others and are reserved exclusively for the E.I. kips and skin tanners of South India (*see* also 'Myrobalan').

2.966 Salometer

An instrument for measuring the weight of a salt solution per unit volume.

2.967 Salt, Khari — *see* **2.596** 'Khari Salt'.

2.968 Salt pitting – Grain damage caused by salts.

2.969 Salt Spots

Small cavities, white or light brown in colour, heavily encrusted in the hide and which can only be eliminated with difficulty when the skin is scraped.

2.970 Salt Stains

Stain caused by halophilic bacteria present in wet-salted hides and skins and also by salt contaminants.

2.971 Sammying or **Samming**

reducing the moisture content of pelts or leathers by squeezing between the rollers in a machine.

2.972 Samming Machine

A machine for drying leather to the sammed condition. Also called' Wringing Machine'.

2.973 Sam, Sammie, Sammy

To condition leather with water for securing a uniform water content of about 30 percent to 40 percent by weight; to dampen leather in saw dust.

2.974 Santiniketan Leathers

Vegetable tanned leathers hand-worked and dyed with lac dye; made around Calcutta.

2.975 Sappan Wood

The wood is obtained from *Caesalpinia sappan* Linn. fam *Leguminosae*. It is used to some extent in leather dyeing.

2.976 Satin Calf or Leather

Leather finished on the grain side. After stuffing with grease, the grain is slightly buffed or snuffed. The leather is then finished with suitable materials so as to get a silky feel. The leather is generally made from hide and calfskins or the grain of which is more or less damaged. It is used for shoe uppers.

2.977 Satin Finish

A dull or matt finish on leather as distinguished from 'Glazed Finish'.

2.978 Scabby

Afflicted with scab or mange.

2.979 Scalding

Loosening hairs by placing a skin in hot water; used in the past to remove bristles from pig skin.

2.980 Schorlemmer's Basicity — *see* Percentage Basicity; known as Lehigh Basicity also.

2.981 Scored Hides

Hides damaged during flaying by cuts that do not completely penetrate them.

2.982 Scores

Long cuts on the flesh side due to careless flaying.

2.983 Scotch Grain

A pebbled pattern embossed usually on cattle hide or calf leather and made to resemble the heavy coarse grain leather

which originated in Scotland.

2.984 Scouring

Removing loose tan and blooms on the grain and flesh sides of leather. This is done either manually by hand using stiff brush and stone tools or by machines. A machine fitted with stones or a drum type machine is now used for the purpose. About 11 percent material is lost when sole leather is scoured.

2.985 Scouring Machine

A machine which cleans by rubbing.

2.986 Scratch Resistance

Resistance of a finish to direct scratching with a sharp instrument expressed as kilograms/mm square of the width of the scratch.

2.987 Screen Printing

Colouring the leather surface through a screen, which has a stenciled design and fixing the colour. For every colour, a separate screen is necessary.

2.988 Scud

A slimy material containing the natural dirt of hides and skins; remnants of epithelial tissue, hair pigment, lime soap, etc, left in the grain layer.

2.989 Scudding

Removing scud from unhaired hides and skins by scraping or chemical treatment.

2.990 Scudding Beam

A convex platform made of wood covered on top with zinc sheet or split and hollowed trunk of a palm tree set at an angle of about 45 °C cover which the hide or skin is worked with blunt scudding knife.

2.991 Scudding Knife

A blunt curved knife used for scudding.

2.992 Scuff Resistance

Resistance to abrasion by a rough surface. Assessment is made by comparing a scuffed finished leather surface with a grey scale.

2.993 Sealskin

Skin from the seal, an amphibious carnivorous mammal.

2.994 Season

An aqueous dispersion of binder with other ingredients like plasticizer, dye and/or pigment etc to be coated onto a leather surface for finishing purposes.

2.995 Seasoning

Application of finish season.

2.996 Season Hides

The expression is usually applied to winter hides.

2.997 Sebaceous Glands

The glands producing oily matter, sebum, located in the grain layer of the skin and connected to the hair follicle by a duct. Also called fat glands. The fatty substance secreted is however not a triglyceride but a wax.

2.998 Sebum

The fatty material of the sebaceous glands of the skin, which is a wax.

2.999 Seconds

Another name for 'Deads'.

2.1000 Selection Straight

Selection on the basis of properties of leather which are recognized by trade to denote its proper grade.

2.1001 Self-basifying Chrome

Chrome extract containing difficultly soluble basic substances like $MgO/CaCO_3$ and hence its gasification increases while penetration proceeds.

2.1002 Self-plasticized

Film-forming agent having itself the required degree of flexibility. This is achieved by suitable tailoring of the polymer either by suitable choice of monomers or through grafting.

2.1003 Semi-alum Leather

Leather that has been tanned first with vegetable tannins and then with aluminium salts.

2.1004 Semi-aniline Leather

Leather that has been coated with a finish containing a small amount of pigment, so that the natural grain is clearly visible.

2.1005 Semi-aniline Finished

Leather, which has been aniline, dyed or stained, incorporating a small quantity of pigment, not so much as to conceal the natural grain of the hide.

2.1006 Semi-chrome

Leather tanned first with vegetable tannin and then with chrome salts.

2.1007 Semi-chrome leather

Leather which has been tanned first with vegetable tannin and then retanned with chromium salts.

2.1008 Sequestering Agents

Compounds which are capable of forming complexes with metals and are useful for the prevention of undesirable effects due to metals. Thus leathers which have been treated with certain meta-phosphates are immune against the catalytic effects of iron compounds.

2.1009 Sesame Oil

A semi-drying oil obtained by pressing the seeds of *Sesamum indicum* Linn., fam. *Pedaliaceae*.

2.1010 Setting

Reducing the wrinkles/growth marks and smoothing the grain by pressing between two rollers.

2.1011 Setting Out

A process used in leather manufacture for stretching out the leather. It removes growth and fold marks as well as any coarseness of the grain thereby making the leather surface perfectly flat or smooth. Setting is usually done on properly sammed leather either by hand or by machine, the set leather being then hung up for drying.

2.1012 Shading Agent

Any dye which is used after first dyeing to bring the shade to the required tone.

2.1013 Shagreen

Epidermis of sharkskin.

2.1014 Shake Tare

Weight taken after shaking the hides free from loose salts.

2.1015 Shaking

Sweeping and beating wet-salted hides against a piece of stone or stump of wood to free them from the loose salt before weighing.

2.1016 Shanks

That portion of the hide which covers the leg of an animal.

2.1017 Sharkskin

Genuine sharkskin leather is made from the top grain of skins of certain species of sharks and is used principally in shoes, belts, wrist-watch straps, luggage, fine leather goods and for industrial purposes. It has varying natural grain markings of fine, smooth, mesh-like grain similar to pin seal. The term is wrongly applied to other leathers, such as horse butts embossed with a shark grain.

2.1018 Sharpening Agents

Reducing agent whose addition accelerates the loosening of hair.

2.1019 Sharp Tan Liquor

An astringent liquor.

2.1020 Shaved, Weight

The weight of a pack of leather taken after shaving. This is an important weight for calculating the quantity of different materials required for dyeing and fat liquoring in the manufacture of chrome leather.

2.1021 Shaving

Mechanical operation carried out to make the thickness of the leather uniform.

2.1022 Shearing Cuts

Cuts made on sheepskin while shearing the wool of live sheep.

2.1023 Shearlings

Tanned and dressed skin of a sheep still bearing the original wool that has been cut to an approximately even length.

2.102 Sheen

Lustre/Glitter/Sparkle. Sharper reflection of a surface at an angle far greater than the angle of specular reflection.

2.102 Sheepskins

Unsplit sheepskin leather, not skivers.

2.1025 Shell

In horse hide, the part covering the rumps is known as the shell area. It has a denser and tighter fibre structure than the rest of the butt.

2.1026 Short Weight — Under weight.

2.1027 Shoulder

The part of the hide between the fore shanks and the head.

2.1028 Shrinkage Temperature

Temperature at which an untanned skin or leather immersed in a water bath starts shrinking when heated uniformly.

2.1029 Shrunken grain leather

Leather specially tanned so as to shrink the *grain* layer, with a grain surface of prominent but uneven folds and valleys.

2.1030 Side

Half of a whole *hide* obtained by dividing it along the line of the backbone.

2.1031 Upper Leather, Chrome

A side of a chrome tanned leather used for shoe uppers.

2.1032 Siding or Corduroying

Poor flaying shows up on the skin by a series of shallow and generally parallel streaks.

2.1033 Sig Water

An alkaline solution of soda ash, borax or ammonia used to wash the grain surface of leather preparatory to applying dye solutions by hand or by machine; formerly solution of stale urine.

2.1034 Silica Tanning

Tanning using dispersions made from water glass (i.e. Sodium silicate); a filler tannage; usually done in combination with either chrome or zirconium tannage.

2.1035 Silicones

Polymers of dialkyl silane diols; used as slip agent or to impart smooth feel and some degree of water-proofness.

2.1036 Silver Kid

Kid or goatskin leather with a bright silvery appearance on, the grain side produced by coating with aluminium leaf.

2.1037 Silver Wattle

A tree, native of Australia (silver or blue watt]) *Acacia dealbata* now regarded as a variety of *A. decurrens* grown in India, is inferior to those of black wattle in tanning. The bark contains about 11 percent to 15 percent tannins (see Bark Wattle, Bark Mimosa).

2.1038 Simulated Grain — Artificial grain.

2.1039 Skin

Outer covering of smaller types of animals, e.g. sheep and goats, or of the immature animals of the larger species, e.g. calves.

2.1040 Skirting Leather

A term for a specialized vegetable tanned cattle hide leather used for skirts or hanging portions of saddles that come between the legs of a rider and the horse.

2.1041 Skiver

Tanned outer or *grain split* typically of a sheepskin or lambskin, but sometimes applied to goatskin or calfskin.

2.1042 Slack Tanned

Having an insufficient degree of tannage to produce the desired characteristics in leather.

2.1043 Slating — Scudding,

2.1044 Slate, Knife

A knife made of a slate and used for scudding.

2.1045 Slating Stone — Scudding beam.

2.1046 Slate

Sheepskins dried for export after dewoolling and called ‘Papras’ in India.

2.1047 Slaughtered, Hallali

Average first class hides without defects or blemishes. Air-dried slaughtered should have not more than two warble lumps. The term does not necessarily imply that the animals were killed in slaughter houses.

2.1048 Slicker

A metal blade set in a wooden holder for setting out leather by hand.

2.1049 Slicking

The operation of stretching out the leather by a slicker. This is done for removing part of the moisture, crease marks or wrinkles.

2.1050 Slink Lamb

Tanned and dressed sheepskin bearing fine curly wool made from the pelt of a still-born or young lamb.

2.1051 Slip Agent

Agent incorporated into a finish to free the embossing plate from the finish on removing the compressive force.

2.1052 Slunks

Skins of still-born calves weighing 2 kg or less in the green condition and 1 kg and less in the dry condition.

2.1053 Smoked Hides — *see* 'Fire Dried Hides'.

2.1054 Snuffed Finish

Leather of which the outer surface of the grain has been removed more or less lightly by emery wheel. Also known as 'corrected grain'.

2.1055 Snuffing

Lightly *buffing* the *grain* surface of leather, usually by a machine with an abrasive covered cylinder.

2.1056 Soak Fleshing

Fleshing hides during the preliminary soaking operation as distinct from fleshing after liming.

2.1057 Soaking

Rehydration of *raw hides* and *skins* to their original moisture and washing out the curing salt, dirt, dung and adhering blood.

2.1058 Soaking Agents

Chemicals used for making the dry hides absorb moisture from soak liquor and hasten their softening. They are also known as wetting agents.

2.1059 Soak Liquor

Liquor used for soaking hides and skins usually with some softening agent, with or without a preservative.

2.1060 Soak Pit

Pits in which hides and skins are soaked.

2.1061 Soak Lining

The piece of leather lining which is put on the insole inside the shoe.

2.1062 Sodium Hydrosulphide

A sharpening agent used in liming; it is just as effective, but less caustic in its action than sodium sulphide solution.

2.1063 Sodium Sulphydrate — Same as sodium hydrosulphide.

2.1064 Sod Oil

In England, the type of fish oil used for chamoising does not remain after oxidation, in a sufficiently liquid condition to be pressed out, as in the case of moellon degras used on the continent of Europe. In England, the chamois leather, after the oxidation of the fish oil, is washed with washing soda or sodium carbonate whereby the oxidized fish oil is removed from the chamois leather partly in an emulsified form and partly in the form of soap. The alkaline wash water is then treated with sulphuric acid when the fish oil is separated from the soap and from the emulsion. This separated oxidized fish oil is known as sod oil and has properties of moellon degras and is used for similar purposes (*see* also

'Moellon Degras').

2.1065 Sole Leather

Leather used for soles of boots and shoes. Sole leather is generally made from thick hides, such as those of buffalo or ox. Generally, sole leather is vegetable tanned; chrome tanned sole leather has very limited use.

2.1066 Solid Leather

Designates an article the body of which is made of leather. If the term 'solid' is prefixed to the name of the particular skin, for example, solid pigskin, it indicates that the article is made essentially of a single thickness of leather of the kind specified.

2.1067 Solubilized Extracts

Several tanning materials, such as quebracho, hemlock, etc, contain large quantities of sparingly soluble tannins, which can be rendered soluble by treatment with alkali sulphites or bisulphites. Extracts thus prepared are called solubilized extracts.

2.1068 Solvent Dyeing

Dyeing in an organic solvent medium. The method is useful for water insoluble dyes. The colour of the dyed leather is fast to washing.

2.1069 Solvent Fatliquoring

Fatliquoring with an emulsion of water in oil dissolved in organic solvent(s).

2.1070 Solvent Resistance

Resistance to organic solvent extraction; very much desirable in respect of garment leathers as they are subjected frequently to dry cleaning.

2.1071 Sonagaddi — *see* 'Lizard skins'.

2.1072 Sonali Bark, Amaltas

Bark of Cassia fistula Linn., fam. Leguminosae, used as a tanstuffs contains 12 percent to 18 percent of tannin. In Tamil Nadu, it is sometimes blended with avaram for the production of E.I. tanned leather. Alone it produces a soft leather, but of a colour which is slightly darker and redder than avaram tannage. It is largely used for tanning Iizard skins for export, alone or sometimes blended with babul or avaram bark and myrobalans. Supplies usually come from Madhya Pradesh, Bengal and Orissa. In Tamil Nadu, it is also known as konnam (konnan).

2.1073 Sour Bark

Bark which is fermented and has produced acids.

2.1074 Sour Dip

An acid solution containing epsom salt and fermenting corn sugar into which dry sole leather is dipped to improve its colour and feel.

2.1075 Sour Liquor

Liquor in which acids have been produced by fermentation.

2.1076 Spanish Grain

Finish produced by embossing on fancy, or upholstery leather a modified natural grain which was formerly produced by drawing or striking a hide or a skin in a strong tan liquor to shrink the grain resulting in a curious pattern on the surface owing to unequal shrinking of different portions.

2.1077 Spent Bark

Bark from which tannins have been extracted or leached out.

2.1078 Spew/Spue, Fatty

White surface deposition emanating from the leather.

2.1079 Split

The under layer of a hide or skin or part of a hide or skin separated by splitting. If the name of the animal whence it originates, or the word ‘hide’ or ‘skin’ or the part of the animal whence it comes is included in the description, then the word ‘split’ must be used as a noun, for example, pig split, hide split, butt split and not as an adjective, for example, split pigskin.

2.1080 Split Finishing

Finishing the flesh splits. Involves scaling the split surface either with a soft polymer which can get into the pores of the split leather and can have good anchorage and then finishing the surface with resin binder, etc., or by laminating the split leather with a thick PU foil.

2.1081 Split leather

Layer from a *hide* or *skin* made from a *flesh split* or a *middle split*without any *grain* structure, tanned to be imputrescible.

Note

1. A split is a layer of hide or skin obtained by dividing it horizontally (splitting) to obtain at least two separate layers; the top layer is called *grain split* and the bottom layer is called flesh split; for heavy hides also a middle split can be obtained.
2. If the name of the animal whence it originates, or the part of the animal whence it comes, is included in the description, the term “split leather” will be used as a noun, e.g. pig split leather.

2.1082 Split, Grain

Upper or top layer of a *hide* or *skin* with grain surface, separated from the hide or skin by splitting horizontally in a machine.

2.1083 Split, Flesh

Inner or under layer of a hide or skin separated from the hide or skin by splitting horizontally in a machine.

2.1084 Split, Middle

Middle layer of a heavy hide (3.48) or skin (3.88), separated from the hide or skin by splitting horizontally in a machine

2.1085 Splitting

Dividing or cutting leather, hides and skins into thin pieces along a horizontal plane. Cutting a hide vertically with a knife into sides, bends, bellies, etc, is also called splitting.

2.1086 Split Hides

The outer or grain layer of a hide from which the under or flesh side has been split to give it a reasonably uniform thickness.

2.1088 Split Skins

Skins which have been split into two parallels with the grain or flesh surface. The term is used to describe the portion of a hide or skin split into two or more thicknesses other than the grain or hair side.

2.1089 Splitting Horse

A wooden frame for supporting a hide while cutting it into two sides.

2.1090 Splitting Machine

A machine equipped with a gripping cylinder and band knife for splitting hides or skins or leathers horizontally into splits or for levelling the thickness of leather.

2.1091 Spot Hides

Hides sold for cash or pricing decision on the spot in the normal course of business.

2.1092 Spray Drying

Drying substances in solution by spraying in a current of hot air which evaporates the water and leaves the solid in the

form of a fine powder.

2.1093 Spray Dyeing

The process of dyeing leather by spraying the dye solution through a spraying apparatus with the help of compressed air.

2.1094 Spreading

The tendency for an oil to creep over the entire surface of water on which it is placed; this is important in stuffing and in oiling off leather.

2.1095 Spready Hide

A hide with a large area in relation to its weight.

2.1096 Stage Hide

The hide of a male of the ox kind that was castrated later in life than the steer, often when a year old. The longer the castration is delayed, the more the hide becomes like a bull's. It has no recognized designation in the hide market, but is classed as steer or bull whichever it resembles more closely, causing frequent difficulties in classification.

2.1097 Staining

The process of dyeing and colouring leather by applying the dye solution on it with a brush. This method is adopted usually in colouring heavy or spready hides when it is desired to keep the flesh side clean and undyed.

2.1098 Staking

Flexing leather to separate fibres sticking together and thus to make it softer.

2.1099 Staking Powder

A powder used on leather before it is staked, so that friction is reduced. Generally, French chalk is used for the purpose.

2.1100 Staling

The process of sweating sheep and lambskins for dewooling.

2.1101 Steel Drops

Alcoholic solution of ferric chloride used for staining haematin treated leathers to black, especially black Morocco goats. Iron salts render the grain of the leather hard or harsh.

2.1102 Steer Hide

Leather made from the hides of steers, usually a heavy Leather for soles or belting, although the term is sometimes used to cover any cattle hide leather especially in the fancy leather goods trade. The term has been used also to designate an embossed grain with a two-tone finish used for personal leather goods.

2.1103 Sticking Piece

The dewlap or hanging skin under the throat of cattle, where the butcher first inserts his knife in the slaughter.

2.1104 Stirrup Butt

Strong flexible leather usually 4 mm to 5.5 mm thick, as level in thickness as possible and with a close shaved flesh, made from ox hides rounded into butts approximately 1 m to 5 m long and used as a strap for holding stirrups.

2.1105 Stitch-Tear Resistance

The load required to tear the leather between two holes, a given distance apart and is expressed as so many kgs/cm thickness of the leather.

2.1106 Stock Liquor

Strong tan liquor used to strengthen liquors weakened by tanning stock in them.

2.1107 Stoning

Smoothening down leather with a stone slicker or “stoning jack’ principally for removing growth marks and coarse grain from sammed leather.

2.1108 Straining

Stretching of wet leather or skin upon boards or frames and fixing in that stretched condition by toggles, nails or pegs preparatory to drying out.

2.1109 Strain Marks — *see* ‘Marks, Strain’.

2.1110 Strap Leather

Heavy leather and leather of medium thickness, curried to required pliability, from which leather straps for various purposes are cut.

2.1112 Stratum Corneum

The uppermost layer of the epidermis made up of dried hardened and flattened cells which is shed as scurf.

2.1113 Stratum Granulosum

The third layer of the epidermis from the surface and containing keratohyaline granules.

2.1114 Stratum Lucidum

The layer of the epidermis in between stratum corneum and stratum granulosum.

2.1115 Stratum Rete Mucosum or Stratum Germinativum

The lowest layer of epidermis containing germinating cells, It is in immediate contact with derma, and constitutes the chief and most important layer of the epidermis. The cells of this layer are at all times reproducing new cells.

2.1116 Stretched Pattern

Pattern obtained after stretching the hides and skins on frames or boards.

2.1117 Stretch of Leather

The percentage increase in length of a strip of leather upon the application of a given pull per unit area of cross section of the strip.

2.1118 Striker

Fixing agent for mordants generally used where dyeing is to be done with basic dyestuffs. Common among strikers are tartar emetic, titanium potassium oxalate, titanium phospho oxalate, etc.

2.1119 Striking of the Colour

Deposition of colour on a base material.

2.1120 Striking Out

Leather which has been worked, drummed or paddled in liquors is usually creased or somewhat puckered on the grain surface and contains a large amount of liquor which can be squeezed out. The creases are smoothed out, the surplus liquor squeezed out and the leather is stretched to its fullest extent by stretching or pushing it out perfectly flat on a table with a slicker. The process is termed ‘striking out’

2.1121 Striking Through

Penetration of tannin, dyes through leather fibres.

2.1122 Stripping

Removal of the feebly combined portion of tannin from leather. This process of partially detaining the leather is adopted in making semi-chrome or retanning the E.I. kips and skins. Borax is used as a stripping agent. The term is also used for partial bleaching or making the shades of dyed leather lighter. Hydrosulphites, sulphurous acid, bisulphites, soap, etc, are used as stripping agent in such cases.

2.1123 Stuffed Leather

Term applied to leather which has had wax or grease worked into its substance.

2.1124 Stuffing

Impregnation of grease, wax and fat and other conditioners into leather to make it pliable and somewhat water resisting.

2.1125 Stuffing Drum

A heated drum used for impregnation of wax, grease and fat.

2.1126 Stunning

Rendering an animal unconscious by electric shock, pole axe, or humane killer before bleeding.

2.1127 Subcutaneous Tissue

The muscular and fibrous tissues below the corneurn which connect the hide or skin to the body of the animal. Usually loose enough to allow twitching of the skin.

2.1128 Substance — Thickness of leather.

2.1129 Substance, Good

Denotes plumpness and fullness of leather.

2.1130 Substances, Leather

Leather content, hide substance plus fixed tans (*see* also 'Leather Substance').

2.1131 Sudoriferous Glands

The sweat glands, also called sudoriferous glands, are coiled sacs with spiral ducts leading to the surface of the skin. They are located in the grain layer near the hair bulbs and secrete sweat consisting of water, together with a little urea and mineral matter and other waste products which are passed out from the body through the skin pores.

2.1132 Suede Calf

Calfskin leather finished with a velvet like nap on the flesh side.

2.1133 Suede Finish

When dry tanned calf, sheep and goatskins are buffed OR the flesh side first to remove any loose fleshy tissue and again to produce a nap, the surface is referred to as a suede surface or finish (see also 'Velour Finish').

2.1134 Suede Kid

Goatskin leather finished with a velvet like nap on the flesh side.

2.1135 Suede Leather

Leathers in which the fibres on the flesh side are cut very short by means of buffing or fluffing wheels so as to present a velvety appearance.

2.1136 Suede Shearling

Tanned and dressed sheepskins, bearing short wool and sueded on the flesh side.

2.1137 Suede Sheep

One-bath chrome tanned sheepskins, or semi-chrome sheepskins, finished as suede leather.

2.1138 Suede Splits

Leather made from the flesh splits of hides or skins and finished with a velvet like nap.

2.1139 Suede velour

Leather or *split leather* whose wearing surface has been mechanically finished to produce a velvet-like *nap.*

2.1140 Sulphated Oils

Self-emulsifying oils. The Sulphato (OSO_3H) groups linked to the carbon of the oil through a mediating 'O' are the emulsifier part. The emulsifying group can split off in the presence of acids and hence is not acid-stable.

2.1141 Sulphited Oil

Self-emulsifying oils, carrying the sulphonic acid groups (- SO_3H) as the emulsifying part. Since in this group the sulphur atom is directly attached to carbon of the oil, the anionic fatliquors made thereof are resistant to both acid and salt and hence can be introduced along with pickle itself to prevent sticking together of the separated fibres; can hold more neutral oil; their increased molecular size enables them to lubricate better and produce smoother and softer chrome leathers; when used in very large amounts make Ieather heavy and looser.

2.1142 Sulphated Neatsfoot Oil

Neatsfoot oil which has been treated with sulphuric acid and subsequently washed.

2.1143 Sulphonated Oil

Word wrongly but commonly used for sulphated oils. Sulphonation is usually a more drastic treatment requiring the use of chloro-sulphonic acid or sulphur trioxide (*see* also 'oil, sulphated'),

2.1144 Sulphone Syntans

Syntan in which the linkage group is the sulphone group (-SO_2-) instead of the usual methylene group (-CH_2-).

2.1145 Sunmac, Sumach

Consists of the dried leaf of certain species of Rhus, mainly *Rhus coriaria* Linn, fam. *Arzacardiaceae*, from the Mediterranean region ('Sicilian sumac') and in more recent times the dried leaves of various American species. It consists of the oldest and best known of the vegetable tans. The tannin present in the leaf is of the pyrogallol class. It is mainly used in the light leather industry and the manufacture of sheepskin leathers. Sumac also bleaches the dark colour of other tanstuffs. The tannin content usually varies from 25 percent to 30 percent. The name 'Indian sumac' has been applied to *Continusscoggygria* Stop. syn. *Rhus Cotinuss Linn*., fam., *Anacardiaceae*, a shrub or small tree allied to Sicilian sumac (1oc. tit) which is fairly widely distributed in North West India and both the leaves and barks are much used locally as a tanning material. The average tannin content of the bark is 16 percent (dry material) which varies seasonally (that collected during the rainy season had the highest tan content). Leaves collected in autumn had the highest tan content (21 percent to 26 percent). It has, however, not been commercially exploited for export.

2.1146 Sunmac Extract

Liquid extract made from sumac, by the use of water at 50 °C to 60 °C. Boiling water is not used, as it destroys the tannins present. Half an hour boiling destroys at least 25 percent of the tannin.

2.1147 Sumac Liquor

Sumac infusion. Liquors in general made from sumac are liable to vary in composition, more so than most tanning materials. Sumac has in general a higher pH value than other materials and a very high acid and salt content. This is partly the reason why sumac is favoured for the tanning of leather that has to withstand prolonged exposure to an acid atmosphere, such as bookbinding leather.

2.1148 Summer Hair

Crop of hair that grows in summer.

2.1149 Sun Blisters

Blisters or putrefied spots in hides dried during curing .in very hot sun.

2.1150 Sunning

The exposure of patent leather to strong sunlight to remove the tackiness from the varnish.

2.1151 Superficial Fascia — Flesh on a hide or skin.

2.1152 Suspenders

Sets of pits, usually three sets of seven pits, each measuring 180 cm x 180 cm x 210 cm, used in pit tannage of sole leather. The hides are suspended in these pits which contain tan liquors varying in strength from 7 °C to 19 °C Bk.

Hides remain in these pits for about 7 days.

2.1153 Suspending Vat

Wooden receptacles used for suspending skins in tan liquors.

2.1154 Swabbing

Application or spreading of a liquid over the surface of leather by hand.

2.1155 Sweating

Loosening the hair or wool by hanging the hides or skins in a closed atmosphere saturated with moisture thus encouraging bacterial action. The bacteria attacks the roots of the hair or wool which is then easily removed. Sheepskins are generally hung in damp, underground chambers at 10 °C to 15 °C in cold sweating and 20 °C to 25 ° C in warm sweating for 48 hours.

2.1156 Sweat Chamber

A warm room in which the hairs of skins are loosened by bacterial decomposition.

2.1157 Sweat Glands

The sweat glands, also called sudoriferous glands are coiled sacs with spiral ducts leading to the surface of the skin. They are located in the grain layer near the hair bulbs and secrete sweat consisting of water, together with a little urea and mineral matter and other waste products which are passed out from the body through the skin pores.

2.1158 Sweating Room

A warm, closed room saturated with moisture used for hanging hides and skins for loosening the hair or wool by bacterial action.

2.1159 Sweat Pit

Enclosed masonry room in which sheepskins are hung in a slightly warm and humid atmosphere for loosening the wool by the sweating process.

2.1160 Sweep Tare — Same as ‘Shake Tare’.

2.1161 Swelling

When hides and skins are immersed in an alkaline or acid solution, for example, in lime liquor or sour tan liquor, they swell causing an increase in their thickness and weight. The swelling occurs due to the absorption of water which would be induced by alkalis and acids.

2.1162 Syntan —

Synthetic tanning agents. They are usually synthetic organic resins/or polymers or their derivatives capable of converting pelts into leather.

2.1163 Synthetic Dyes

Aniline dyes made from coal-tar products.

2.1164 Synthetic Fatliquors

Paraffin sulphonamides further modified with monochloracetic acid. They are odourless, do not discolour and do not form spue and hence ideal for garment leathers.

T

2.1165 T/NT ratio

Ratio of tannins to non-tannins in a vegetable *tanning* material.

2.1166 Table Dyeing

The process of applying dyestuff onto leather using a brush or swab, by spreading the leather on a table.

2.1166 Table Run

Used to describe leather that has not been sorted and graded before selling by the tanner (also known as 'Tannery Run').

2.1167 Tacking

Stretching out leather by nailing it on wooden board or frame, under strain round its edges, to dry and increase the area of the leather and to make the surface smooth.

2.1168 Taint

Incipient putrefaction or decay in the hide which could be observed from hair slip.

2.1169 Tainted Hides

Hides in which putrefaction has set in.

2.1170 Tallow Oil

Pale yellow liquid, obtained by pressing tallow and used as a dressing and finishing agent.

2.1171 Tallow, Pressed

Animal fat principally of cattle and sheep hardened by pressing and used in the preparation of dubbin for curried leather.

2.1172 Tamarind Tree

The tree Tamarinds *indica Linn. fam. leguminoseae*, common in India; the bark and leaves containing about 7 percent tannin, have been used for tanning locally.

2.1178 Tan

Abbreviation for tannin from vegetable tanning materials.

2.1179 Tannase

A hydrolytic enzyme which splits the glucoside molecules of tannins into sugar and polyphenols.

2.1180 Tannic Acid

It occurs naturally, probably as a glucoside in nut-galls and tree barks from which it is extracted with water and alcohol. It is lustrous, faintly yellowish amorphous powder, glistening scale or spongy mass, odourless, strongly astringent; Soluble in water, alcohol and acetone, slightly soluble in ether.

2.1181 Tanning

Treatment of *hide* or *skin* with extracts of natural products (e.g. bark, leaves, seeds) or chemical agents (e.g. chromium, aluminium, organic compounds) to stabilize against heat, enzymatic attack and thermo-mechanical stress.

2.1182 Tan Liquor

Infusion of vegetable tanning materials in water. Contains principally tannins and soluble nontannins and also acids produced by fermentation of organic matters and soluble salts present naturally in such vegetable tanning materials.

2.1183 Tannage, Aldehyde

Principally the same as 'Formaldehyde Tannage'. Other aldehydes can also tart but are not commercially used.

2.1184 Tannage, Bag — *see* 'Bag Tannage'

2.1185 Tannage, Chrome

Process of tanning with chrome salts

2.1186 Tannage, Combination

Tanning with more than one tanning agent.

2.1187 Tannage, Dark

Refers to those leathers which have assumed a dark brownish shade after vegetable tanning, owing to the dark

colouring matter associated with the tanstuffs.

2.1188 Tannage, Formaldehyde

The process of tanning by formaldehyde. It is also called aldehyde tannage.

2.1189 Tannage, Hard

A tanning process which produces a hard leather.

2.1190 Tannage, Hemlock

Tannage with hemlock bark (*see* also 'Hemlock, Leather').

2.1191 Tannage, Iron — Tannage with iron salts.

2.1192 Tannage, Light

Refers to those leathers which have assumed a pale colour after vegetable tanning.

2.1193 Tannage, Sulphur

Tannage caused by deposition of sulphur or its compounds on hide fibres. This deposition is effected by treating the hides or skins first in a strong solution of hypo and subsequently in a solution of either sulphuric or hydrochloric acid and salt.

2.1194 Tannage, Valonia — Tannage with valonia.

2.1195 Tannery Effluents

The tannery spent liquors or discharge of liquid streams after every unit processes.

2.1196 Tannery Run — *see* Table Run.

2.1197 Tannery Wastes

The by-products of a tannery realized during leather making process. These usually consist of hair, fleshings, shavings, spent tan, spent lime and other waste materials.

2.1198 Tanning Extract

Concentrated aqueous infusion of vegetable tanning materials marketed in the liquid, solid and spray dried forms. The use of these extracts is now more popular in the tanning industry than that of raw tanning materials, such as tan containing barks, leaves or fruits.

2.1199 Tannins

Water soluble polyphenolic organic compounds of vegetable origin feebly acidic in reaction and astringent in taste which combine with the proteins (collagen).

2.1200 Tannometer — *see* Barometer.

2.1201 Tan Sludge

Usually the insolubles in tan liquors which settle down as a layer. The insolubles often caused generally by atmospheric oxidation and other forms of degradation of tannins,

2.1202 Tartar Emetic

Antimony potassium tartrate used as a fixing agent for tannin mordant in leather dyeing.

2.1203 Tawing

Dressing skins into leather with alum, salt and other materials instead of tannin.

2.1204 Tawer

A leather dresser, one who dresses leather with alum salts.

2.1205 Tawing Paste

A mixture of pasty consistency prepared from alum, salt, egg yolk, flour and other materials to which sometimes a little olive oil is added. Used in alum tanning or tawing for producing soft white leathers, such as glove kid.

2.1206 Taxidermy

Stuffing the skin of an animal suitably stitched so that the product looks like the animal itself.

2.1207 Tear Strength

Force required to tear the leather.

Note —Testing is performed on a material of uniform thickness that has been partially cut, creating a tear initiation site.

2.1208 Tempering

Wetting the leather to bring it to a properly sammed condition.

2.1209 Temper of Leather

The resistance of light leather to bending and the extent to which it recovers its shape after bending.

2.1210 Tensile Strength

Force per unit of the original cross-sectional area applied at the time rupture of the test piece.

2.1211 Teri Pod

Pods or fruits of *Caesalpinia digyna Rottl*., fam. *Leguminosae*. The tannin content of the husk (dry pods freed of seeds) has been found to be 52 percent. As the large seeds contain little or no tannin, the tannin content of the whole pod (husk plus seed) is considerably lower (22 percent to 27 percent).

2.1212 Terra-Cotta Leathers

Levelled, bleached, retanned, fat-liquored and dried vegetable tanned leathers used as starting material for making a variety of finished leathers made from cow and buff calfskins.

2.1213 Thin Stock

A thin skin of papery fine grain.

2.1214 Thorns

Scratches in sheepskins due to thorns and other sharp points and edges.

2.1215 Ticks (Cattle)

Arthropod parasites of the order *Acarina* infesting verte-brate animals which lodge on the body of cattle and suck the blood causing small punctures or wounds. There are at least sixty kinds of cattle ticks known. The most common in India is *Boophilus or Mai-garopous annulatus*.

2.1216 Ticky Skin

Skin showing defects on the grain caused by ticks.

2.1217 Toggle

A metal clamp equipped with jaws to grip leather and a prong to hold it in place in a slotted metal frame.

2.1218 Toggling

Stretching out a piece of damp leather and holding it in place for drying in a smooth and stretched condition by means of toggles (using clips/clamps) set in slots in a metal frame.

2.1219 Tooling

Producing patterns in relief on the grain surface of leather by hand with the aid of a hot metal tool. Also understood as hand embossing.

2.1220 Top Lift Cleaning

Cleaning of the top piece of the heel.

2.1221 Top Season

Final season prior to glazing.

2.1222 Total Ash

The residue left from burning leather in an open crucible at 800 °C ± 25 °C after sulphating.

2.1223 Tongue Tear Strength

The load required to tear the leather between two tongues formed by splitting the leather perpendicular to its surface.

2.1224 Transfer Foil

The entire finish film (i.e. all the three layers in the reverse order) formed on a supporting polythene film. When this is transferred onto a leather, polythene supporter side up, by pressing it onto the leather and then peeling off the supporter film, the leather gets a finished appearance in one operation.

2.1225 Tray Dyeing

The method used for dyeing light skins only. The moist skins are either folded or paired together flesh to flesh and dipped in warm dyestuff solution in the tray until the desired depth of shade is obtained.

2.1226 Trim

Production of a good pattern by cutting the edges of hides neatly, evenly and symmetrically and by separating the parts which are not useful to tanners, such as heads, shanks, tails, etc.

2.1227 Trimmings

The small cut pieces realized when the edges of the hides are trimmed. Such trimmings are used for making glue.

2.1228 Trimming Shearing

Tanned and dressed sheep or lambskin with short to medium, length wool suitable for trimming purposes.

2.1229 True Skin

The corium or derma, the part of the hide or skin which is converted into leather.

2.1230 Trypsin

An enzyme secreted in the pancreatic gland of all mammals. It hydrolyzes some proteins in alkaline medium and is the effective agent in puering process, its optimum efficiency being at *p*H 8.5 and temperature at 37 °C to 38°C.

2.1231 Turwar Bark — same as avaram bark.

2.1232 Turkey Red Oil — Sulphated castor oil.

2.1233 Turpentine

A mixture of terpene hydrocarbons produced by steam distillation from the coresin of pines and used in paints and varnishes, besides in leather dressings.

2.1234 Twaddle Degree

A degree of measurement of density.

U

2.1235 Unctous

A term applied to leather with soft, full and oily feel; used for gloves.

2.1235 Unhairing Beam

Convex shaped platform usually made of stone or wood inclined at an angle of 45 °C with the floor and used as a rest for hides and skins during unhairing operations.

2.1236 Union Tannage —A combination of vegetable extracts produce union tannage sole leather

2.1237 Upholstery Leather

Leather made for covering cushions of furniture, carriages and automobiles and extended to include the materials going into the sides and tops of vehicles. Made up of large, coarse-grained goatskins and more generally of spready cattle and horse hides split at least once and, in many cases, twice or thrice.

2.1238 Upper Leather

Leather for making upper part of boots and shoes usually manufactured from calfskins, goatskins, cattle hides or horse hides.

V

2.1239 Vache Sole Leather — Sole made f

2.1240 Vachette — Literally the hide of heifer. The French equivalent of 'kip' or more often of 'kip leather'

2.1241 Vacuum Drying — Drying with heat and pressure reduced by about 28" to 29" of mercury, enough to make water boil at 12 °C to 18 °C and a temperature of 140 °F to 200 °F on the hot plate.

2.1242 Valonia (Valonea or Vdlonea)

Is an international name for a much esteemed tanning material that consists of the dried acorn cups (or cupules) of the valonia oak, *Quercus macrolepsis Kotschy syn. Q. aegilops Linn* and allied species, fam. Fagaceae which occurs in the eastern Mediterranean region and Asia Minor. Considered as one of the best and most useful tanning material of pyrogallol type. It is chiefly used in the production of high grade heavy leather, such as sole Leather where weight and water resistance are important. The tannin content of the valonia cups may vary from 25 percent to 31 percent while the beard or 'trillo' is considerably richer, the tan content being usually 40 percent. Solid valonia extracts may contain 64 percent to 86 percent tannin

2.1243 Valonia Beard — *see* 'Valonia'.

2.1244 Valonia Tannage

Tannage performed using valonia tannins.

2.1245 Valve Leather

A collective term sometimes used for the cattle hide. Leather, either vegetable, chrome or combination tanned, with special stuffing added and employed in pump valves, as piston packing, etc.

2.1246 Vat

A large rectangular container in which hides and skins are treated in olden times with water or solutions as in soaking, liming, bating, pickling and tanning. It is sometimes equipped with paddle wheels for agitating stock and liquor and sometimes with rocker frames as in the preliminary tanning of sole leather.

2.1247 Vat Dyeing

Dyeing with dyestuffs insoluble in water but soluble in alkaline solution when reduced with suitable agents.

2.1248 Veal

Leather with a grain similar to, but somewhat coarser than that of calf, made from the skins of immature bovine animals. These animals after weaning wouldn't be fed on grass but milk diet to grow comparatively large, yielding skins Larger and heavier than calfskins.

2.1249 Veal skins — Heavy calf skins.

2.1250 Vegetable-tanned leather

Hide or *skin* converted to leather by vegetable tanning agents, where the total content of tanning metals (Cr, Al, Ti, Zr, Fe) is less than or equal to 0.3 percent (mass of all metals/total dry weight of leather).

2.1251 Veining

Greenish spots spreading in the form of a fern and appearing after removal of the hair.

2.1252 Veiny

Having coloured markings like veins.

2.1253 Vellum

Fine calfskin parchment (*see* also 'Parchment ').

2.1254 Velour Finish

Velvet finish (*see* also 'Suede Finish).

2.1255 Velvet Leather

A kind of fancy leather of different shades made from skins after buffing-off the grain. The leather has a soft velvety nap.

2.1256 Ventilating Power

The ability of leather to allow moisture to pass from an atmosphere of higher to one of lower relative humidity.

2.1257 Volatile Matter Content

The weight lost by the leather when dried at 102 °C ± 2 °C to constant weight.

W

2.1258 Wallaby Leather

Leather from skins of wallaby; a small and medium sized species of Australian kangaroo.

2.1259 Walrus

The true walrus hide is of such thickness that it is generally used for buffing wheels and must be split before using as bag leather. It is difficult to determine leather made of seal and walrus skins after tanning and splitting and the names are often used interchangeably. Walrus grain is sometimes imitated on cattle hide, sheepskin and goatskin as well as splits from hides of various animals, In such cases, the proper descriptions are 'walrus grained cow hides', 'walrus grained goatskin', etc. The term 'walrus leather' when used in the traveling goods industry is generally regarded by the trade as being a variety of genuine sealskin leather on which a simulation of walrus grain has been embossed.

2.1260 Walrus-Hides

Hide from the sea cow or sea horse, a carnivorous mammal found in the Arctic seas.

2.1261 Wandoo Extract — *see* 'Redunca Extract'.

2.1262 Warble Hole

Hole caused by the warble larva on the skin of the living animal.

2.1263 Warble Lump

A small hard tumour caused by the larvae of the warble fly.

2.1264 Warbles — *see* 'Grubs'.

2.1265 Wash Leather

Chamois leather made of goat or sheepskin used for dusting, polishing and cleaning.

2.1266 Water Absorption

The gain in weight of the test piece as a percentage of its conditioned weight prior to test for each hour of test or for specified time duration.

2.1267 Water-Buffallo

Same as buffalo. The distinction between land and water buffalo is not recognized in zoology and is a matter of diet and climate rather than of breed. Externally, the hide of a water buffalo is almost bald, having practically no hair. The so-called land buffaloes inhabit drier climates and their hides have much more hair than water buffaloes.

2.1268 Water Lizard —*see* ‘Lizardskins.

2.1269 Water Resistant Leather

A leather is said to be water resistant when it shows resistance to absorption and passage of water throughout its thickness. This would be enhanced through some special chemical treatment and finishing.

2.1270 Water Soluble Inorganic Substance

Sulphated ash of water-soluble matter.

2.1271 Water Soluble Matter

Quantity of all those substances which under certain conditions are leached out of leather by water. These are principally organic tannins, non-tannins and mineral salts.

2.1272 Water Soluble Organic Substance

The difference between water soluble matter and water-soluble inorganic substances.

2.1273 Water Transmission

The mass of water which passes through the leather in a specified time interval and measured by the gain of mass.

2.1274 Wattle Bark — *see* ‘Bark, Wattle’.

2.1275 Waxed Calf

Vegetable tanned calfskins rather heavily greased, blackened and finished on the flesh side. Wax is used in the finishing, which accounts for the name.

2.1276 Waxed Kips

Finishing of Vegetable tanned East India kips on flesh side similar to that of waxed calf.

2.1277 Waxed Leather

General name for all curried Leathers to which a finish like that of waxed calf and kips is given. Waxed leather, mainly wax calf and kips was formerly used for making shoe uppers but now supplanted to a great extent by chrome leather namely, box calf and box sides.

2.1278 Waxed Splits

Leather manufactured from the flesh splits of hides which are given a finish much akin to waxed calf.

2.1279 Weave, Angle of

The general orientation of the hide fibres with the grain layer, making an angle which varies from the vertical to the horizontal weave.

2.1280 Weight, Beam House — Limed weight.

2.1281 Weighting Leather

Increasing the weight of leather by incorporating into it some weight-giving materials.

OR

Material used for loading, that is, for suitably conditioning it to modern ‘shoe machinery’.

2.1282 Weight Limed

Generally called pelt weight, which is nothing but measured weight after liming, unhairing and fleshing. Based on this weight, the expected yields of leathers are reckoned.

2.1283Welting

A strong thin leather cut into straps used for making welts of shoes.

2.1284 Welting Belly or Shoulder

Tanned cattle hide belly or shoulder of tannage and quality suitable for the manufacture of welting for footwear.

2.1285 Wet-blue

Leather in a wet condition after chrome tanning.

Note 1 to entry: Wet-blue is an intermediate stage of manufacturing.

2.1286 Wet salting

Curing of *hides* and *skins* by treating with salt, and then draining so that the product remains wet.

2.1287 Wet-white

Leather in a wet condition after tanning with substances, e.g., zirconium salts, aluminium salts, modified aldehydes, glutaraldehydes and syntans that confer a whitish colour.

Note — Wet-white is an intermediate stage of manufacturing.

2.1287 White Lace or White Hide Leather

Alum and salt tanned cattle hide suitable for the manufacture of laces for industrial purposes.

2.1288 Whiting Machine — A fine buffing machine.

2.1289 Whitening

Buffing the flesh side of stuffed or curried leather, such as harness, belting or russet, either by machine equipped with blade or cylinder or by hand using a whitening slicker.

2.1290 Whitening Slicker

A sharp steel slicker whose sharp edge is slightly bent by means of a steel rod before working with it. It is used for whitening the flesh side of russet leather to cut off long fibres and to make the flesh close and smooth. Whitening is a very skillful operation.

2.1291 White Weight

The weight of limed, unwashed stock.

2.1292 Window

In a chamois skin, a thin portion that transmits light when the skin is viewed against a window or light background.

2.1293 Wild Grain — same as ‘Marbled Grain’.

2.1294 Willow Calf

Full chrome calf leather finished in brown shade with a typical willow grain or box grain pattern by boarding.

2.1295 Willow Sides

Coloured upper leather dressed in the same way as willow calf made from cattle hides cut down the backbone. The term is applied to full chrome, semi-chrome and vegetable tanned sides similarly dressed.

2.1296 Wool-Grease, *Adeps lanae* (Lanolin, Wool-Fat, Wool-Grease)

Purified yellow grease from sheep’s wool.

2.1297 Woolled Sheepskins

Sheepskins or lambskins tanned and dressed with “wool-on”.

2.1298 Wringing

Removing the bulk of water from wet leather by passing it through specially designed wringers.

2.1299 Wrinkle

Defect appearing on the grain side of sheepskin after removal of the wool and tanning, in the form of fine ridges perpendicular to the backbone. On the flesh-side of wooled skins, it could also appear in the form of ridges

perpendicular to the backbone, but very much deeper. This defect is caused by folds in the skin of the living animal and is mostly encountered in rams.

or

A permanent crease or furrow on the grain surface of a hide or leather, incapable of removal by rolling or plating.

Y

2.1300 Yellow Lizard — *see* Lizard skins.

2.1301 Yield of Leather

The number of pounds/kilograms per square feet of finished leather per single weight unit of raw hide or limed pelt.

Z

2.1302 Zinc Chloride

Much used in curing process of raw hides earlier days by applying 3 percent to 5 percent solution on the flesh side of wet-salted hide especially during their transit in summer. Its use prevents hair slip to a remarkable degree.

2.1303 Zinc White

Zinc oxide used as a main constituent in the manufacture of white pigment for leather finishing.

2.1304 Zirconium

A rare earth metal, some salts of which have tanning properties especially its basic sulphate.

2.1305 Zirconium Tannage

The process of tanning with basic zirconium sulphate for producing white leather.