

CHAPTER - IVMETHODS OF TANNING PROCESS :

There are totally three methods of process of tanning, one is Bag Tanning, it is also called as Vegetable Tanning too, and second is Pit Tanning, it is also called as Semi-Mechanical Tanning, and lastly, chemical Tanning i.e. chrome Tanning. We shall see each process in detail as follows.

- 1) BAG TANNING OR VEGETABLE TANNING.
  - 2) PIT TANNING.
  - 3) CHEMICAL TANNING OR CHROME TANNING
- 1) BAG TANNING OR VEGETABLE TANNING :

Leather is one of the oldest products known to mankind. The art of tanning was one of the earliest skills developed by prehistoric man and there is every reason to believe that, of all the practices of tanning, vegetable tanning, was the most ancient one. Relics in the form of vegetable tanned leather goods, have been discovered from the ruins of ancient civilisations dating back to 10th century B.C.

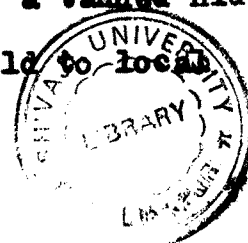
Widely distributed in nature, Vegetable tannins are a group of astringent, complex aromatic compounds of high molecular

Weight. Important tanning bearing families are leguminosae, Anacardiaceae, Rhizophoraceae, Myrtaceae and Combrataceae. The commercially important materials like wattle, Quebrache, Myrobalans and Mangroves belong to the p tropical countries.

Vegetable tanning is the simplest method of tanning requiring minimum control in its operations. The skill associated with its manufacture was handed down from generation to generation. Usually the bulk of all heavy hides go for vegetable tanning for the manufacture of sole, harness, saddlery, belting, strap leather etc.

In Kolhapur out of 59 tanners, 57 tanners use the Vegetable Tanning method for tanning the hides. The hide is macerated in lime water to separate the hair, the fat and the fleshy parts from it. After the hide is well soaked, the hair is scraped with a scraper and the fat and fleshy parts are removed with a knife or rapi. It is then washed in a running stream and soaked for nearly three days in a solution of three parts of babul bark and one part of myrobalan water. To tan the hide thoroughly soaking is repeated thrice. The hide is then tied into a bag and hung up with a stronger solution of babul bark and myrobalan water. It is exposed to the sun and on the eighth day it is washed in a stream and dried. Thus the tanner gets a tanned hide.

By - Products :- The flesh obtained from a tanned hide is on an average about 2 lbs per piece. It was sold to local farmers who use it as manure.



NEW TRENDS IN VEGETABLE TANNING :

E.I. tanning of skins used to be done with Avaram, while for kips a blend of Avaram, and Konnam was employed. In Kolhapur city vegetable tanning was mainly done with Babul and Myrobolan with recourse, to lesser known, local materials wherever, possible. However, with the introduction of wattle bark and solid extract from South Africa in the early thirties, tanners began to use wattle more and more in the tannage, though they were very much hesitant in the beginning and had to be cajoled and persuaded to use this new material. But once the tanners realised the wonderful properties of wattle, there was no stopping them and slowly Avaram faded away from the field of E.I. tanning of sheep & goat skins.

The trend of E.I. manufacture underwent a revolutionary change and Wattle G.S. powder completely replaced Avaram. Also the entire tannage became a fully mechanised process with more and more tanners resorting to drum tanning of sheep and goat. This trend began from the early 60's.

However, another phase began to slowly emerge, in the wake of the emphasis on import substitution, to save valuable foreign exchange and since wattle used to be imported in large quantities, the attention was focussed on this problem. Notwithstanding the wide use of wattle, the substitution of this material was considered to be a major area of research, ever since the deterioration of trade relation with South Africa in the mid forties. Actually, 'Wattle substitution' was one of the major

planks in which C.I.R.I. was built and the early years of central leather Research Institute, Madras witnessed intense research activities in this direction. But the momentum thereafter slowed down due to liberal imports of wattle extract from East African countries. The Government of India has been allowing import of wattle under O.G.L. and since the production of E.I. by drum tanning with spray dried powder is an easy process, the tanners have been satisfied with the status quo. However, whenever there has been a shortage of wattle extract in the market due to shipment delays, the tanners have given thought to wattle substitution. Also the exorbitant cost of wattle nowadays has prompted many manufacturers to try at least a partial substitution of wattle.

About a decade back, while working on a project for the "rapid tanning of heavy leather" it was discovered that a new approach could be made in vegetable tanning to improve the penetration and also to save about 50 % of wattle consumed. This process was developed, consequent to the reversal of the usual tanning sequence, where wattle tanning is followed by myrobing. In this new experiment, the pelt was first treated with suitably modified myrobalan liquor in the first phase and the tannage completed with wattle in the second phase. After several tanning trials over many years, a standard process for E.I. has been formulated achieving a wattle substitution of about 50 %

The process was demonstrated at a few major tanneries

in the South. Recent experiments have shown that the above process can be further simplified by using finely crushed and sieved myrobalan powder, instead of the infusion, while doing the drum tannage. Still greater substitution of wattle is possible if other indigenous materials like Babul/Cutch/Avaram or any locally available material is mixed along with wattle in the second phase of tanning. In sole leather also, the above process will work with a few minor modifications and thus the amount of wattle can be brought down to the minimum.

The solution to the problem of imports, really lies in the fuller and better utilisation of the indigenous tan-stuffs and for an effective implementation of this, there should be close rapport between the Industry and the Research Institutions. Tanners should come forward to assimilate the latest trends of research and translate them profitably in the industry. Regarding the availability of tanning materials, the Forest Department should be requested to extend all help in the procurement and in case of promising substitutes, plantations should be started. These activities have a socio-economic import also since they generate plenty of employment in the rural and backward areas.

Many potential tanning materials like mangroves, Ghat Bohr, Cutch, etc. are very much under utilised or even unused and the loss there of to the country is considerable. Sufficient technical know-how is available for the fuller and better utilisation of these materials and it is upto the tanners to

profitably avail of the scientific knowledge generated in the research institution. In this context, it is worth while to mention that syntans can play a vital role in obviating some of the problems in vegetable tanning like bad colour, improper penetration, etc.

Pretanning, combination and bleaching syntans can prove to be veritable boons to the tanners. Blended extracts are now popular in the market and with innovative changes happening in the manufacture of vegetable tanned leather, this age-old method of tanning is witnessing rapid changes and the new trends are expected to stimulate further research and development.<sup>13</sup>

## 2) PIT TANNING :

It is a mixed process. The manufacturing process in this method is the same which is used in bag tanning to some extent. Here for this tanning process some pits are built in which hides and skins are tanned. This process of tanning is carried out by hands as well as by mechanism. It is, therefore, called semi-mechanised 'process of tanning. It means, in this process of tanning some chemicals are used, to tan the hides. In this process, instead of preparing bags of hides and hanging

---

13.

D. Ghosh, K.R.V. Thampuran and A. Doraikannu and G. Ramamoorthy, Central Leather Research Institute, Madras, The Tanner, ( Journal October 1982 ), PP. 175, 177, 178.

...

of bags of hides vertically, the hides are kept horizontally in pits for six months with a ~~stronger~~ stronger solution of chemicals, it is found, generally, that this process is used to produce pressed leather. It is a time killing process. But the leather produced by this method is very strong and of high quality. Pit Tanning is carried out by S.H. Vatkar and company only in Kolhapur city.

### 3) CHEMICAL TANNING OR CHROME TANNING :

In recent years, there has been a considerable interest in developing shorter and better processes for the production of leathers with much expanded uses. In Kolhapur S.H. Vatkar, and Co. has been adopting chemical tanning i.e. chrome tanning method for the production of leather. Before a raw hide or a skin is transformed into a piece of magnificent leather, it has to pass through several stages of processing called unit operations. The present day trend of tanning is to combine many such unit operations into one. In conformity with this modern trend, an attempt has been made in this communication to complex basic chromium sulphate with an anionic sulphated fat liquor and then tan the leather with this complex. By doing this, an attempt has been made to achieve stabilization as well as lubrication of the skin pelt in one single operation, which is normally done by the commercial tanner in two stages. It is also hoped that such a tanning-cum-lubricating complex may go a long way to produce a leather which resists the removal of its incorporated fat by washing or even dry cleaning.

...

EXPERIMENTAL :

Lipoderm liquor 2 (BASF India) was found to form a complex with basic chromium sulphate by adjusting the pH to 8.0. The stoichiometry of the complex was found by Job's Monovariation method, in which the concentration of the ligand is plotted against the optical density of the metal-ligand solution. Different solutions of metal-ligand were prepared by varying the concentration of fat liquor from 0.001 g/cc to 0.1 gm/cc to which a fixed concentration of metal ion (0.01 g/cc) was added in all the cases. The total volume of the solution was made upto 10cc.

To ascertain the tanning potency of this complex, standard hide powder was chosen as the protein substrate. The hide powder was first soaked for one hour with water (Float 1:50). Subsequently the hide powder was subjected to pickling operation in accordance with the usual procedure by running the contents (contained in a stoppered glass/bottle) in a revolving shaker at the rate of 60 RPM for two hours. To the pickled hide powder (pH 2.5) was added chrome-fat-liquor complex solution in four equal instalments. The contents were kept moving in the shaker for two hours. At the end of this tanning operation, the pH of the bath was found to be 4.0. The tanned hide powder was withdrawn and dried.

After tanning of hide powder, two full sheep skins, after usual pre-tanning operations were tanned with the above chrome-fat liquor complex ( 8 % of which was used on the pickled

...



wt of the skins, float 1:10 ). The total tanning time was 3 to 4 hours by running the skins in a small drum ( 5 RPM ). The skins are then withdrawn, washed, dried, staked and evaluated. Some of the important physical characteristics which determine the quality of a garment leather were also determined.

The IR spectra of the hide powder was recorded before and after tanning ~~was~~ on a Perkin Elmer instrument for the region 4000 to 400  $\text{cm}^{-1}$ . The hide powder was analyzed chemically by usual methods of analysis ( Table XX. )

#### RESULTS AND DISCUSSION :

Results of the Job's monovariation method show that a complex is formed by mixing the ligand and metal in the ratio of 1: 1 (w/w).

The infra-red spectra 6-7 of the hide powder shows bands at 3440, 1720, 1560, 1400  $\text{cm}^{-1}$ . The IR spectra of the tanned leather substance shows peaks at 1550, 1650, 3450, 1450, 1250, 1020, and 550  $\text{cm}^{-1}$ .

The bands at 3450 to 3440  $\text{cm}^{-1}$  in the spectra of tanned and untanned hide powder are assigned to (O-H) vibrations of the ~~n~~ hydroxyl group present in the prote in of the skin and also due to hydroxyl group of the trapped water molecules (moisture). The 1720 or 1650  $\text{cm}^{-1}$ . bands are assigned to (C=O) stretching frequency of the carbonyl and carboxyl group. The band at 1560  $\text{cm}^{-1}$  indicates the presence of amide groups and C-S linkages. The

broad band at  $1400\text{ cm}^{-1}$  is indicative of aromatic rings present in the skin protein.

The IR spectrum of the hide powder tanned with Liquor 2-chrome-complex shows that the bands due to C=O and O-H groups have become considerably weak. In addition, another strong band at  $500\text{ cm}^{-1}$  has appeared which is characteristic of (Cr-O) linkage, showing the bondage of chromium complex with that of the hide powder.

Chemical analysis of the leather tanned by a similar procedure, is reported in Table, XX, Table XXI shows various physical characteristics like Drape, thermal insulation value, tensile strength, water absorption capacity and resistance to water penetration.

Drape is a property which allows a fabric to orient itself into graceful folds when acted upon by the forces of gravity. It determines quantitatively the suppleness of the fabric. For the purpose of comparison, the drape coefficient of various fabrics was determined ( silk 35 %, coarse cotton cloth 60 % nappa suede 50 % ). The leather produced by the present method showed a drape coefficient of 57 % indicating that it can be stitched into garments.

Thermal insulation value of this leather was found in Clo units. A Clo is defined as the amount of insulation, which will maintain normal skin temperature of the human body when heat

production is 40 kilogram calories per meter per hour at 70°F(21°C) air temperature, and it is assumed that air is still. A thermal insulation value of 0.38 Clo units indicates that this leather is suitable for apparel purposes.

The tensile strength of 1325 kg/cm<sup>2</sup> of the leather produced by the present methods shows that the leather is fairly strong for making a good garment.

The water absorption capacity and its resistance to water penetration was determined by SASMIRA Head and Dome Tester. Its water absorption capacity of 0.0193 kg/mtr/hr shows that very little amount of water is retained and that the fatliquor chrome complex has virtually filled all the vacant spaces present in skin matrix. Table XXI also shows that it requires 9.0 cm of water pressure to penetrate the water through the tanned skin, which is quite appreciable towards making it a water proof leather.

An examination of Table, XX shows that the experimental leather gives only 2.2 % of fats when extracted for 6 hours with petroleum ether (40-60°), which is much less than the expected value. However, after continued, extraction with this solvent for 12 hours, the total fats extracted are 3.5 percent. This explains that some portion of the fats which have entered into complexation is strongly bonded with the chromium and thus firmly attached with the skin prote in to resist extraction with the petroleum solvent. However, with continued contact with the

petroleum ether for 12 hours some of these bonds break, resulting in the extraction of more fat content.

T A B L E - XX

CHEMICAL ANALYSIS OF THE LEATHER :

Sr. No.	Particulars	Observed values (%)
1.	Moisture	10.2
2.	Fats and Oils (when extracted for 6 Hrs.)	2.2
3.	Fats and Oils (when extracted for 12 Hrs.)	3.5
4.	C <sub>2</sub> O <sub>3</sub>	3.1
5.	Shrinkage temperature T <sub>s</sub>	95°C

T A B L E - XXI

PHYSICAL CHARACTERISTICS

S.No.	Particulars	Observed values
1.	Drape	57%
2.	Thermal Insulation value	0.38 Clo units
3.	Water absorption capacity	0.0193 kg/mts/hr
4.	Penetration of water	9.0 cm of water pressure
5.	Tensile strength	1325 kg/cm <sup>2</sup> *14

14. B.K. Wali and Ravinder Raina, Regional Research Laboratory, Jammu. The Tanner, (Journal October 1981), PP.177, 178, 185.

In short, this mechanical process is completely dependent on Electric Power. It needs heavy and sophisticated machineries. For production of leather, a hide or skin has to pass through several unit operations. In this modern tanning process, a complex of basic chromium sulphate and an anionic ~~map~~ sulphited fat liquor is used to tan the hide. The hides or skins are kept with this complex in small or big drums for four to five hours. After completion of this process, the so-called semi-finished leather i.e., wet-blue leather is withdrawn from the drums.

After the withdrawal, the wet blue leather has to pass through many mechanical operations to recognize as a finished leather for export and for making products such as footwears, clothes, purses etc. Thus the wet blue leather has to pass through the following machine operations.

S.No.	Operations	Machines.
I)	Splitting the hide horizontally	On splitting machine
II)	Shaving the leather	On Shaving Machine
III)	Dyeing the leather	
IV)	Setting the leather	On setting Machine
V)	Drying the leather	On Drying Machine
VI)	Staking the leather	On Staking Machine
VII)	Buffing the leather	On Buffing Machine
VIII)	Spraying the leather	On Spraying Machine
IX)	Hydraulic pressing the leather	On Hydraulic Press.
X)	Measuring the area of leather	On Area Measurement Machine

Before installing the machines S.H. Vatkari and Company had been producing wet blue leather that is Semi finished leather. Now a days, this company manufactures chrome leather for export.

MACHINES FOR SOPHISTICATED PRODUCTION :

For the better and sophisticated production of leather the aforesaid new method of tanning is to be adopted in every tannery, i.e. chemical tanning. In order to adopt this method of tanning, it is quite necessary, that the modern machines are to be bought and installed. As on today there is only one Large Scale modernised unit namely S.H. Vatkari and Company ( as compared to other units in Kolhapur ) who are exporting finished leather. They have installed modern machines of the value of Rs. 1 crore to 1.50 crores for chemical tanning in their factory in Jawahar Nagar - area.

There are about one hundred and twenty registered leather machinery manufacturers in ~~XXXXX~~<sup>India</sup>, out of which about twenty manufacturers are actively involved in the manufacture of equipment. Most of manufacturers are entrepreneurs who started their manufacturing activity by following the designs of imported machines. They improved the equipment, to some extent, to suit the growing needs of the industry. To-day much of the sophisticated equipment is imported from Western countries and there is a great scope for the manufacture this equipment domestically.

...

Only recently, a few of the organised sector companies have entered the manufacturing field with foreign collaborations. These few companies along with some small sector companies are meeting part of the requirement of sophisticated equipment in India.

Vatkar and Brothers have installed following machines including Big drums in their factory.

Shaving Machines.

Sammying Machines.

Setting Machines.

Vacuum drying machine.

Toggle Drier.

Spraying and Drying Machines.

Bandknife Splitting Machines.

Buffing Machines.

Glasing / Polishing Machines.

Staking / Vibrator Staking Machines.

Ironing Machines.

Hydraulic Presses.

#### DESIGN REQUIREMENTS :

The design parameters of the machines to be built in India must suit Indian conditions where, even to-day, unskilled labour is used for various operations in the processing of leather . The machine manufacturer should keep in mind the conditions under which the Indian tanner operates the machines,

the kind of maintenance personnel and facilities he has etc.

The construction of the machine robust to withstand the rough beating the machinery takes when it is handled by unskilled labourers. The fast moving spare parts should be interchangeable in order to reduce the down-time. The machines should be tamper-proof to avoid disturbance in setting by unskilled labour. The machines should have centralised lubrication, which can lubricate all points and can be handled by a lay-man. The machines must use standard electriclas for easy replacement of consumable items. The operating personnel must be trained at the machine - building and testing stages.

#### OPERATING CONDITIONS :

It is a well-known fact that the operating conditions for workmen in an average tannery are dismal. The same is true about equipment. Every tanner's goal is to get maximum production from his equipment. He forgets to think that machines also need doctors ( Maintenance Personnel ) as humans need them from time to time.

S.H. Vatkar and Company have appointed a chemical engineer and other trained personnel to look into the maintenance of their equipment.

If a tannery has a better maintenance set-up, its product will be better and its maintenance and spares costs

...



and down-time lower. Preventive maintenance contributes to a large extent to the economy of the unit. 15.

- 
15. Y. Apparao ( Vulcan Laval Limited, Dapodi, Pune )  
Leather machinery industry in India, The Economic  
Scene ( Magazine October, 1981 ), P.76.

CHAPTER - VTHE FINISHER'S ROLE IN CREATING LEATHER FASHION :

" An important aspect of modern day leather production and its relevance to the needsof changing fashion "

In the past, the tannery was a large or small processing business engaged in the production of raw materials for footwear and clothings. Its role was to take care of local requirements and in general, in case of surplus, it was customary to ship the raw materials abroad ratherthan exporting finished products.

But in general, today, leather and where ever possible, the finished products made out of leather is exported and no longer the hides and skins. There are several reasons for this development :

The fundamental ones are Ecology and the manpower situation, the desire of developing countries to process their own raw materials, and the availability and cost of labour for tasks.

The second fundamental change that is under way is the

...

role of leather itself. Where as leather used to be a commodity, it has now become a luxury item. This will be even more so in the future.

Turning to the calmer waters there is great satisfaction to be derived from the knowledge that leather, itself is more popular with consumers than ever before. There is a universal upsurge in demand for the natural material. Whether it be for footwear hand bags, small leather goods or furniture upholstery. An interesting new development is the rise in sales of hide leathers for the craftsman made trend in leather articles. This coupled ~~it~~ with the current vogue ~~for~~ for home hobby leather-work, is accounting for a considerable aggregate volume of business.

We note similar developments in other natural products, for example, silk, cotton, wool or timber. For every day use, we have synthetic or substitute. However, ~~it~~ with growing ~~an~~ affluence and a higher standard of living, those who can afford them buy genuine silk ties, shirts of genuine cotton and their shoes, belts, bags, garments and upholstered furnitures from genuine leather.

People are prepared to pay high prices for such luxuries provided they are attracted and stylish & here is where fashion comes in.

The utility aspect remains important, but less so than the look, the touch, the fact that they fit into the fashion picture. In other words, people are prepared to pay for the

...

aesthetics which give the customers a feeling of pleasure and the satisfaction that he or she can afford to buy something attractive and genuine.

Some of you may think I am exaggerating, especially, when you think of some of the leather or leather goods produced in your markets. Even so, I maintain that in spite of local differences ( and differences of degree ), these statements are true in the world over.

This development can be most clearly seen in the highly industrialised nations. Just by leafing through fashion magazines or by listening to one's wife when she talks about apparel, it is clear that fashion is not restricted to the look of the dress or a coat, but that it includes all accessories so that shoes as well as belts, handbags, gloves, all belong in a fashion picture.

#### LEATHER HAS BECOME FASHION :

I have heard a number of definitions of fashions and would like to offer you one which I find the most attractive of all. It was Oscar Wilde who said that fashionable is what oneself wears whilst unfashionable is what other wear. If the great many of the famous author's witticisms, this is often dismissed as mere flippacy. There is, however, as in so many witticisms a good deal of truth contained in this point of view : Fashion at its birth is very individual and only when it has been established does it turn to uniformity.

The leather industry is very seldom called upon to create fashion and even when it would really wish to do so more often than not, it is unable to dictate and is frequently dictated to. Part of the reason for the follow my leader approach of leather must be that leather articles such as shoes, gloves, handbags and small leather goods are considered as accessories and as such must blend in, or contrast with, as the case may be, principal fashion items in wearing apparels. Leather garments may belong to a different category in as much as they themselves constitute a fashion trend.

I would class upholstery leathers, however, much a traditional staple, in the same category from the fashion point of view as garment leathers and these two groups of leathers have certainly created their own fashion.

What constitutes fashion in leather ? Or in other words, what will made leather fashionable. It seems to me this can be broken down to 4 basic characteristics : (1) Suitability to make the desired articles. It is no good to have the most fashionable effects if in addition to these effects for example pointed toe shoes are called for and the leather is unsuitable to make pointed toe shoes. This may be described as the functionality of leather, (2) Handle and feel, (3) Colour, (4) Surface Effects.

Considering all these characteristics in order, it would at first sight appear that the finisher can do very little to

...

make leather more suitable for a certain application. Over the last decade, however, the art and particularly the science of leather finishing has developed enormously.

This is above all true as regards greatly improved physical properties which we are now able to impart to leather by means of modern finishes. It is primarily through these improved physical characteristics that we can greatly influence the suitability of leather to make a certain articles. Physical resistance of new finishes have not only given us such thing as easy care leathers, but have helped leathers to stand up to factory processes which would previously have defected any material and are indeed very often defeating synthetics today. Improved wearing characteristics are particularly important in the field of garment leathers and I would venture to say that without improved finishes and finish processes, the recent boom in clothing leathers would instead of delighting the industry, have greatly embarrassed it.

Turning to the next characteristic, the surface feel of leather is really a function of finishing and we are able to offer a very wide range of slip agents, materials giving an oily or waxy surface touch or any other kind of touch sensation causing material to tickle the fancy of the customer. The previously referred to improved physical characteristics can greatly influenced the handle of leather; particularly today, where mellowness is of paramount importance, we have been able

to create finishes which will stake and dry drum under almost any conditions giving the very mellow, drapery, crushed leathers with minimum finish which are sought for almost all types of leather application today.

The traditional and best known field where finishing has a direct impact on leather finishes is that of colour. Ideally, basic colour to all leather should be imparted by the dyeing process but in today's fast moving world and fashion is probably the fastest moving part of this world, it is not always possible to wait for the necessarily lengthier process of drying and we have to rely on finishing methods to impart colours, not only fully covered colours but also enlignes and transparent effects. It is no longer sufficient to produce leathers of a single colour; we have to provide two tones, inlays, ruboffs, washoffs, drumoffs, streaks and the like. All this requires a vast range of materials and possibly an even vaster range of techniques at one's finger tips. We do have such a vast range of materials which may be required to fill almost any need and I would venture to say that if we should be missing in materials needed to fill another hitherto unknown requirement, we are in an excellent position to draw on truly vast resources of knowledge and experience, produce the necessary materials and pass it on to the tanner.

The difference between colours and surface effect is not

...

very clearly marked. Indeed, the question of surface feel is also strongly connected with these two characteristics. Normally by surface effects, we mean textures, print, crush effect and the like. We must have finishes which allow us to mechanically produce some of these effects, i.e., the finish must print easily and must if it is required to do so, retain the print or conversely release the print on lasting thus showing a particular effect on the toe of the shoe contrasting with the rest of the unit. This can, in conjunction, with a good printing press and plate, be regulated by finishes. The question of gloss is a very important surface effect and we must be able to produce dull or glossy finishes almost at will without in any way effecting other characteristics of the finishes be these physical - properties, surface feel or anything else. Similarly, to the question of colour, we once again can offer a vast range of products and a large amount of experience which can help the tanner to provide what is required.

But I feel the greatest contribution the finisher or finishing material supplier can offer to the industry is just that finding out of the requirement; just that sniffing out of the trend which will fit in with the latest lines dreamt up by the mysterious movers of fashion. We must be in continuous contact with these sources, not only finding out what they already want, but anticipating their wishes and providing them with a wide variety of appropriate materials to be used in creating their dreams. We must be able to provide this service



with direct contact with fashion, through an international network of inter-connecting activities, ferreting out what combination or colours and effect is likely to prove successful in the future.

But it is not enough to discern the trend. We must be in a position to interpret it one the one hand and interpret it in a practical way on the other. This is where providing our fashion dreamers with appropriate materials comes in : The appropriate materials has to be something that the tanners can produce, something that is feasible and which can be made available in bulk should the trend catch on.

A little earlier, I have agreed with Oscar Wilde that fashion, at its inception, is an individual thing whilst fashion trends appear to be near world wide and almost universal. As stated, I feel that it is this world wide fashion trend which can be picked up by us, finishers and can be brought to the tannery or shoe factory already translated into practical recommendation. It is the finisher, or finish manufacturer of world wide continuous contacts who is in a uniquely advantageous position to do this very thing. But once the basic interpretation has taken place, individuality must once again come into its own. Not only must each leather or leathergoods producer create his own version of the trend, but necessarily they do so if for no other reason, than because each leather is different and will come up with a slightly different version of the same

main theme even if the identical finish is applied. It is the individuality and originality of each tanner which distinguishes their expressions of the same fashion theme on their own unique leathers.<sup>16</sup>

It is my considered opinion that this unique individuality inside a well directed fashion stream coupled with greatly improved and enhanced characteristics of the product which does not and will ensure not only the survival but the continued prosperity of the leather industry as an essential raw material for the production of high fashion merchandise.

-----

16. Robert Armstrong of Stahl Chemicals, The Tanner (Journal November 1981), pp. 213, 214, 215.