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Workshop on Leather Industry Development  
in Developing Countries

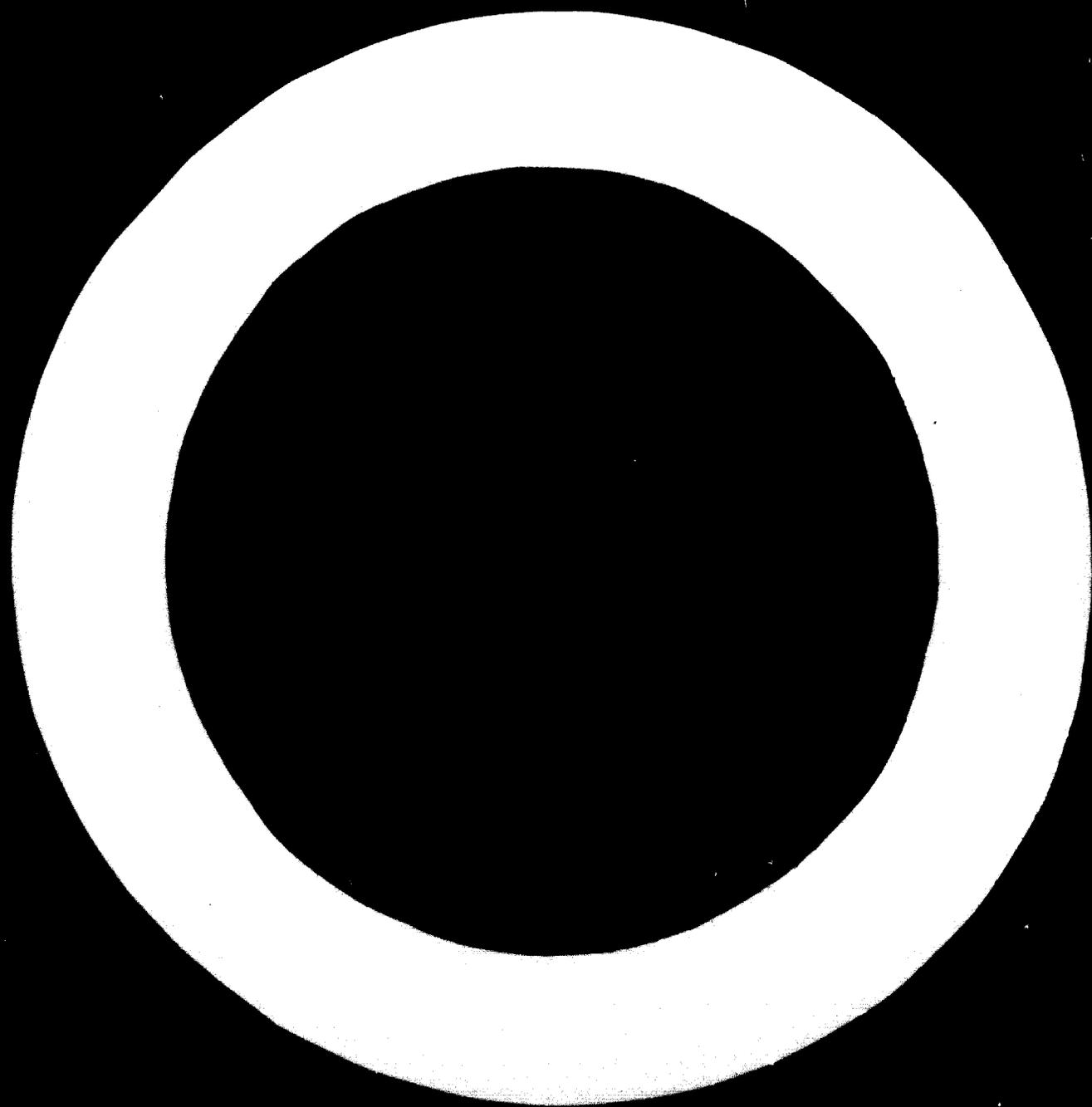
Vienna, Austria, 27 August to 1 September 1973

THE FUTURE OF THE LEATHER INDUSTRY IN  
COMPETITION WITH SYNTHETIC SUBSTITUTES<sup>1/</sup>

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## The future of the leather industry in competition with synthetic substitutes.

### Introduction.

The issue leather versus synthetic substitutes is not new. Nevertheless, since polymeric like Corfam, Clarino, Xylee, Porvair for shoe uppers and the shoe lining substitute Coof - to mention a few - have entered the market, the climate of competition has changed a lot.

The threat of polymeric shocked the tanners, causing a sound reaction - a rediscovery of the qualities born into the natural leather. Leather became a lot softer, with a better feel, enhancing its natural good look and comfort, allowing to extend formerly small markets to large ones, such as garments, furniture leather, leisure shoes in softy leathers etc.

The last 10 years many polymeric and plain, non-polymeric, substitutes entered the market and disappeared soon.

By 1970 substitutes for uppers seemed to have lost the nimbus of the new discovery.

To produce useable leather substitutes caused continuously high research costs, difficult to cover with low selling prices, imposed by comparatively low priced leathers. This situation discouraged many. Even the production of Corfam was stopped. - A triumph for leather? Yes in a way, no in many other respects. - Shortage of hides and skins, increased world wide demand of shoes, garments, upholstery leather, - Important shifts of leather and shoe production to hide producing countries, coupled with export stops of raw hides and even wet blues - reduced the free market for hides and skins.

This uncoordinated, too fast reduced supply of raw material, brought about dramatic changes: Leather lost the price battle against substitutes. Within

a few months substitutes gained unprecedented importance mainly for the shoe industry and many other leather consumers.

A situation has arisen which will heavily influence the future structure of the leather industry. This paper indicates some of the essential efforts to meet a changed marketing position.

### The potential of artificial leather.

1972 Japan became largest producer of artificial leather estimated at 17 - 22 mio m<sup>2</sup> per year, compared against USA and Brazil (including low grade PVC) with an output of 10 to 11 mio m<sup>2</sup> year. West-European producers of fine artificial leathers and shoe lining substitutes are estimated to reach very closely Japan's production. East-European countries like Hungary, CSSR, Rumania, Poland and USSR produce already considerable quantities and are working on additional large projects. Taiwan and South-Korea are expected to become important producers in the low price class of 1 US-Dollar per m<sup>2</sup>. For China no figures are known yet. According to Japanese estimations the above mentioned output has the following use rates:

Footwear	30 %
Bags	29 %
Clothing	13 %
Furnishing	10 %
Others	18 %
	<u>100 %</u>

One can assume that Europe, and USA have similar use rates. Taking the lower figures, 30 % of the output as mentioned above would give approximately 20 mio m<sup>2</sup> leather substitutes for shoes per year. A vague comparison: The EEC countries produced 1971 105 mio m<sup>2</sup> upper leather against approx. 5 mio m<sup>2</sup> uppers in synthetics. During 1972 - 1973 a production increase of

Footwear substitutes is indicated. Prices of artificial leathers have also increased but comparatively little and due to keen competition are not expected to change the price ratio of approx. 1 : 2 to upper leather, and 1 : 3 to lining leather.

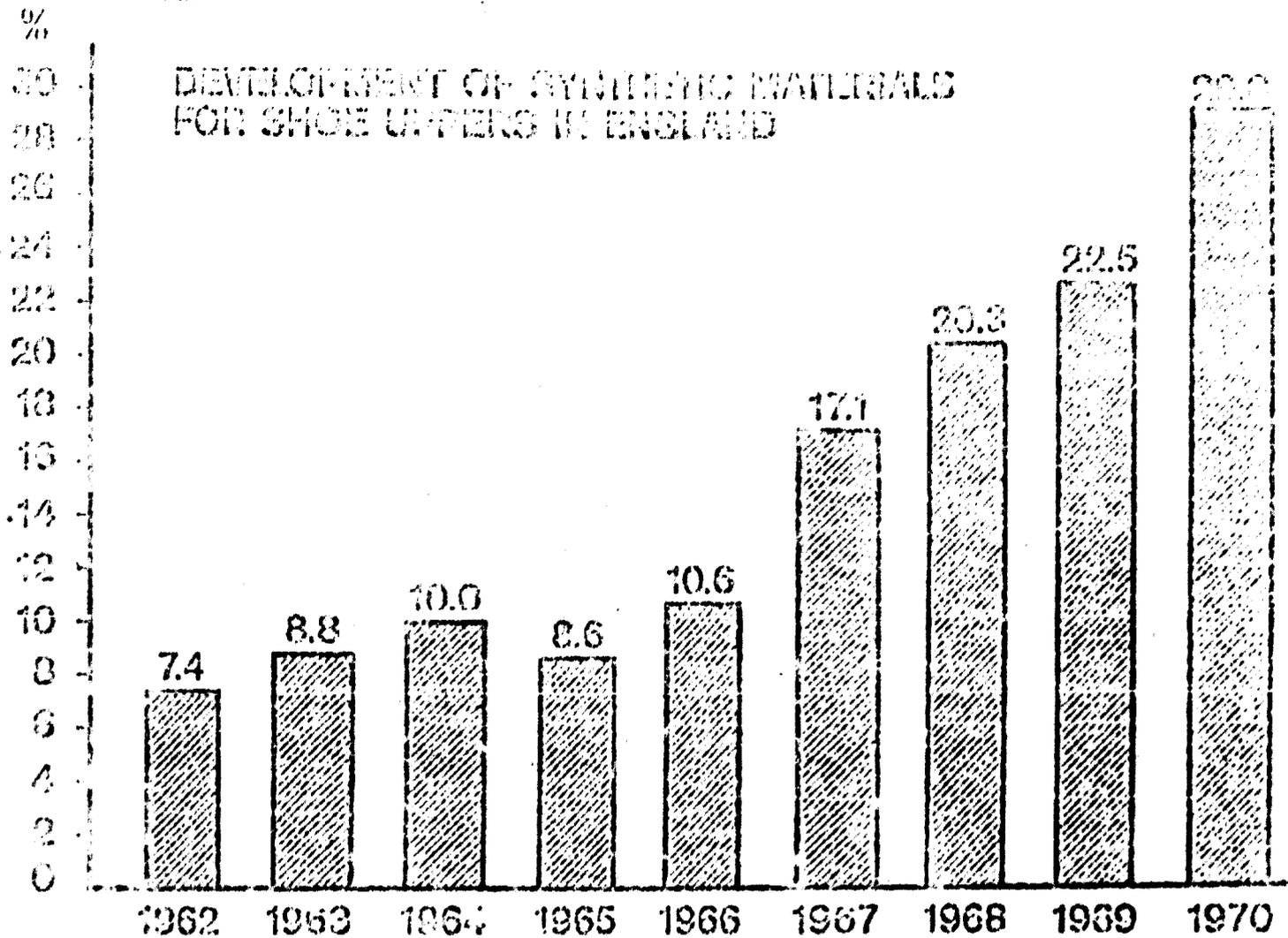
The present situation for leather.

Raw hides and skins increasing over 100 % in price within one year, have caused a worsening competitive situation for leather versus its lower priced substitutes, such as coated fabrics and poromerics.

At this time, with ca. 60 % still the largest leather consumer, the shoe industry is for price reasons forced to replace leather at an increasing extent by poromerics and coated fabrics to be able to offer shoes in the lower and middle price classes. Ladies shoes in poromerics are sold now at 20 - 25 % lower prices. To work with leather substitutes economically, special production lines are set up. Such investments which reduce production costs consolidate a better and continued increased use of leather substitutes, which have reached e.g. in England 1972 30 % or 40 mio synthetic pairs.

The following Fig.1 and Fig.2 of J.C. Bisson show the development of synthetic shoe uppers in England and synthetic luggage in UK, USA and Europe 1962-1970.

Table 2



These percentages are relative to the total output of footwear, exclusive of shoes for home wear, sports shoes and safety boots. Up to 1966 solid PVC was mainly used, but since 1967 fabrics coated with foamed PVC or PU have dominated the market. The share of poromerics of the Cerfam type was only 3 % in 1970.

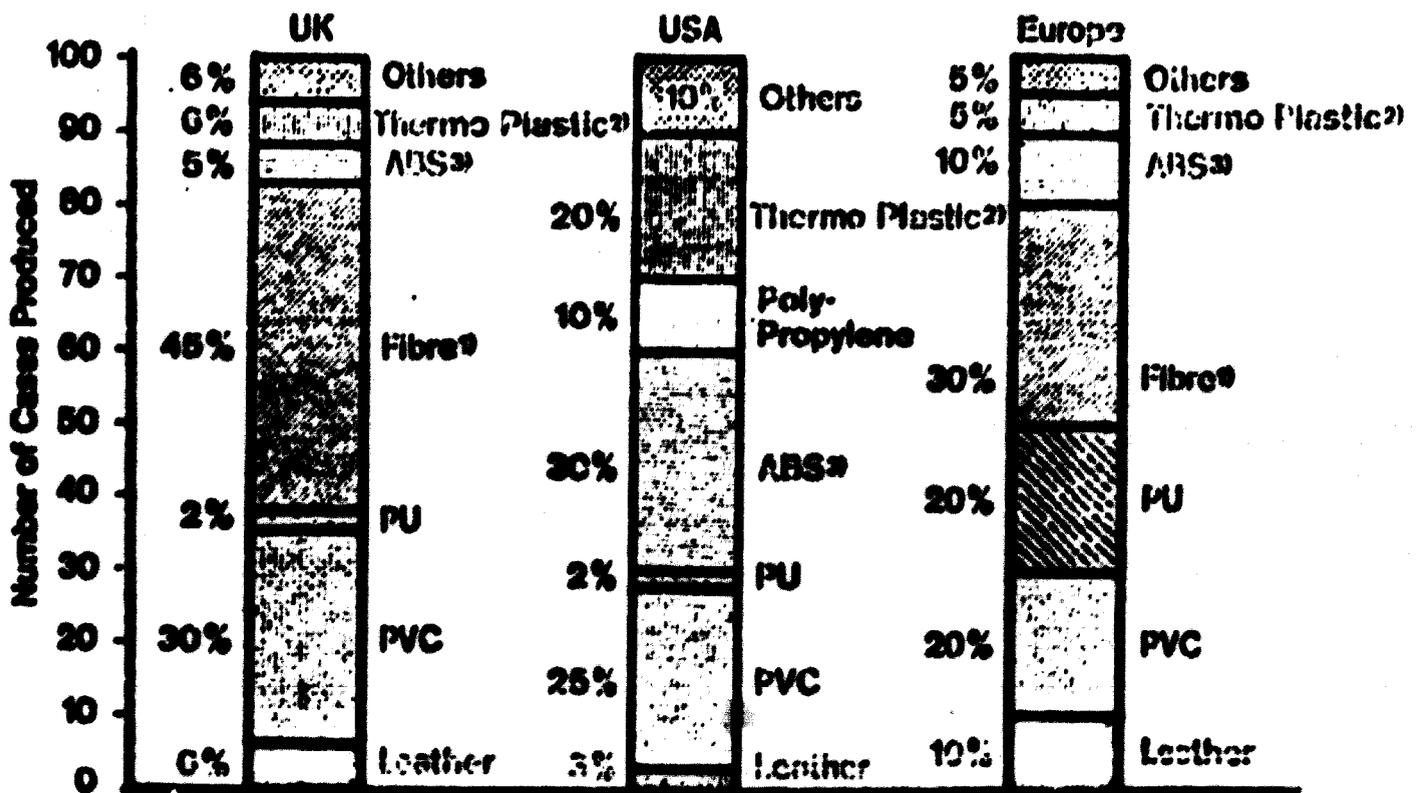
Today, in Germany 20 % of all ladies shoes are made of synthetics only, but by 1973, 50 % of all the shoe material including linings, insoles and soles are synthetics and are expected to rise to 75 % by 1974. Of course substitutes have suffered many draw-backs. Such important properties as for example, water retention and adjustment to the foot are still lacking and fortunately for the tanner, substitutes cannot be used yet for every purpose, but nevertheless synthetics will make further progress and will be used in more and more cases e.g. for open ladies, men's and children's shoes, slippers, sport foot-wear, etc.

Combined leather and substitutes applications, using substitutes as shoe shafts, for high boots, are increasing. The same modern polyurethane finishes can be applied on both, leather and substitute, in identical colours. This can be done e.g. in the plants finishing substitutes to match leather samples, or even by a leather factory finishing leather and substitutes side by side. - By the way, the latter deserves careful consideration as a diversification for a tannery. Furthermore, such shoes made of upper leathers and substitutes can with polyurethanes also be refinished by the shoe manufacturer e.g. with antique effects, to give the final fashion appeal which is of such importance in promoting sales and hiding the presence of substitutes.

What has been said regarding replacement of leather for shoes, is to a much greater extent already the case for leather goods.

**Fig. 2**

**Comparison of Material Usage by the Luggage Industry in UK, USA and Europe**



- 1) Fibres: Vulcanized fibre materials
- 2) Thermoplastics: Includes all thermoplastic materials not separately listed (inclusive of polypropylene in the U.K., exclusive in the U.S.)
- 3) ABS: Thermoplastic acrylonitrile butadiene styrene copolymers

The share of synthetics is greater in the U.S. and Europe, the only difference being in the relative amounts of the various polymers used. Vulcanized fibre materials are still leading in the U.K., whereas thermoplastics such as polypropylene rank first in the American industry. On the Continent the position is different again. Here a growing proportion of output is in polyurethane coated material. This is only a little more expensive than the cheap vinyl products and it has more in its favour - it is light in weight, of better quality, has superior properties and presents a fashionable, pleasing appearance. Consequently it is growing in popularity.

Being a better grade substitute for leather this lighter PU coated material can command higher selling prices than PVC goods. For the heavier articles, however, foamed PVC with a solid surface film and a leather-like finish, as marketed under the names "Skai" and "Helip" will continue to account for a substantial part of a market that once had been a domain of leather.

Upholstery leathers have gained a good part of the luxury furniture section. Provided good easy-care properties are maintained and developed further, leather will hold its place.

However, the rising leather prices set a barrier and textiles, like cord or artificial leather will be competitors in this field as well. - Leather garments are under less severe competition from coated fabrics, but the latest Japanese and German developments should be borne in mind. Nevertheless garment leathers reached 1972 in England 26 % of the output. Combinations leather/fur and mouton returned upon wide markets.

How to upgrade leather quality in order to compete better against synthetic substitutes.

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The tanner is daily confronted with the hard facts, that under the most favourable circumstances raw hides and skins only yield about 30 % first and second selections in full grain.

How to upgrade the remaining 70 % low grades is the key to profitability. When purchasing raw material the tanner is regarding selection standards of raw hides and skins in a very uncertain position. In a way he buys "a pig in a poke". Tight control is therefore essential. Each hide taken into production should be marked first, which will enable determination of yield after the sale. This control will allow to purchase hides from more reliable sources or the making of claims against bad deliveries.

Once taken into production the pre-selection of raw hides for the best possible use and best selling type of leather is another decisive factor. The tanner will sort the hides, according to weight and size, e.g. of first, second or third selections. The more uniform a pack, the better will be reproductiveness of the tanning recipe aimed to achieve the demanded leather quality. In accordance with the grading the production formulae must foresee sorting points: e.g. after splitting out of the lime, splitting out of the chrome, and/ or following shaving.

The "wet blue" stage is of great importance for further selection. Here again weight, thickness and size (footage) have to be established to get homogeneous packs. Provided the skins are protected from mould growth and drying out, they are easy to store and to collect for economical production lots.

A word may be added to fleshing, splitting and shaving. A pre-soak in the drum, followed by good pre-fleshing or in the case of pig skins degreasing before liming, can save the actual fleshing in the limed state. Fleshing of limed hides can thereby be replaced by precise splitting.

Advantages: more even liming and degreasing. From the wastes, such as unlined flesh fat for soaps can be gained. Splits, instead of flushings, can more profitably be used: poor splits give high quality glue, good splits of heavier hides can be turned into linings and suedes giving more area of leather per kg hide.

Further: Flesh or grain splits for softer leather can be diverted for reliming, special degreasing, bating or pretannages e.g. with glutaraldehyde in the case of garment leathers, etc. Chromate is saved as the chromoxyde content can be adapted to the type of leather. Precise splitting particularly out of the chrome needs less time than heavy shaving, and produces splits for suedes and linings. Where as shavings fetch a lower price as they can only be used for leather board.

This shows that splitting, particularly, is of great importance. Therefore the best splitting machine, supervised by a technician, will pay well in upgrading and utilisation of leather and it's residues. Provided the optimum specific treatments are chosen to produce more valuable leather with more area per kg, up to the wet blue state, the subsequent retanning, filling, fatliquoring and dyeing operations open enormous possibilities to adapt the leather to customer's wishes on comparatively short notice. - A further selection point, after drying and staking, will be the crust state of leather, essential for most of the leathers with the exception of e.g. some split suede which can be dyed straight through.

Corrected grain leather may also be pre-dyed in 4 to 5 light colours and brought to the definite shade by spray dyeing.

Buffing and snuffing the grain for slight correction and polishing are preliminary finishing operations. Impregnation, bottom-, medium-, and top-coats, printing effects, grain embossing, plating, ironing etc. give the decisive final look, feel, softness, for the very important grading of the finished leathers, ready for sale.

The quality of suede will depend a lot from its retannage, the fatliquor, and a well chosen dyestuff combination, to achieve the best possible upcoloring.

These are only a few indications.

It will go beyond this paper to go into further details.

Production possibilities to upgrade the 70 % low grades hides and splits gained by rational working, will direct our attention to the following types of leather: Suede is important. Attractive shades, with gloss or matt, long or short fibred, for shoes, garments, furniture, bags, would be a prospective line, these would also apply to split suedes.

It pays well, to develop tannages and dyeings of high fastness standards, including even water repellency, fastness to dry cleaning and washing e.g. for garments, to achieve top quality, marked by warranty labels, e.g. for wash- and dry cleaning fastness.

Nubuk needs better quality hides, but can find good markets e.g. as calf or pigskin-nubuk for the manufacture of shoes.

If not too heavily buffed, corrected sides etc. have good possibilities for semi-anilin and anilin - look leathers, smooth, embossed with grain patterns, applying double tone effects, or special prints.

Heavier buffed sides which can be given:

- "Brush off" finishes,
- Variations of antique finishes, sprayed or printed
- Reptile imitations in double tone, coated with polyurethane laquers.
- Wet look finishes, uni, antique shaded and or with metallised effects, further as
- Smooth patent leather finishes
- soft easy-care finishes.

For full grain hides:

Sauvage effects, well dyed, finished and dry milled, would be another outlet for making high class fashionable leathers out of lower grade hides.

These are no more than a few examples, how a production programme could be made up.

Future fashion appeal of leather.

We know that, now and in the future, substitutes will be lower in price: e.g. today permarine 20 - 25 DM m<sup>2</sup> against leather 40 - 60 DM m<sup>2</sup>, synthetic shoe linings 4 - 6 DM m<sup>2</sup>, against 15 - 20 DM m<sup>2</sup> for leather linings. Therefore, the leather industry should concentrate on upgrading to fashionable, high leather quality, so it can be used to the maximum, for middle and high priced fashionable leather articles such as shoes, garments, furniture, etc. This calls for modern, well planned production plants which allow easy adaptation to changes of leather fashions.

To produce a competitive high quality leather the most suitable chemicals, such as first class dyestuffs, fatliquors and the latest leather top finishes should be used and if essential, imported at preferential customs rates. This approach provides high export revenues.

Chemical factories have already prepared guiding recipes, technicians are available, to facilitate the launching of new articles.

Nonetheless, additional technical assistance of the long range type, such as production planning, is essential in most cases for rapid adaption to the ever changing fashion trends. It calls for a lot of intricate work, but it provides the opportunity to make better use of the superior adaption possibilities of leather to fashion, regarding look, feel, structure and comfort, compared to substitutes.

All production techniques such as liming, tanning, dyeing and finishing have to be firmly established to ensure standards of high quality and at the same time, high productivity per man. per hour.

To achieve high flexibility, quality and quantity the machinery in a tannery must be modern. I mention a few machines:

Hide processors are today available doing economically and efficiently the work from soaking up to dyeing. Retanning, dyeing and fatliquoring can

be better reproduced in the adaptable Coritan - or Hagpiel machines and in less time. Automated processing ensures high standards of production, keeping reproducibility targets tightly controlled. The better the reputation or image a tannery will build up, the quicker samples become available and with the goods delivered corresponding to these samples, the better the business profits will be, provided of course the fashion trends are well followed.

#### How to get information and influence on fashions.

Fashion trends develop through various influences. Leather is in many ways a complementary to the textile fashion but has its particular interpretations. Shoes, gloves and leather goods are, as part of a fashion, necessaries in this sense.

Garments have become a fashion line of its own. We see a "haute couture" of leather developing and should encourage it, since the noble and natural look of leather cannot be matched by any substitute. Provided the tanning industry offers very light, soft, easy care leathers - particularly cordus and ruhuk, easier and less problematic to keep clean, - the favour of the public for this leather will be retained and grow further.

To follow fashion trends and adaption to customers demands to support consumption of leather, important leather fairs should be visited as exhibitor and observer. Indications see annex 1.

However, once the fashion trends are known, own creations have a good outlet, provided they are adapted to suit the taste and approval of major consumer - countries. This could stimulate exports in a very positive way. Good business connections with experienced and reputable leather merchants, who are well informed as to future demands could also prove to be very helpful.

Better achievement possibilities by co-operation of tanners.

Every tannery in developed or developing countries has its specific problems, which could be better solved by partnership.

To make speedy and effective progress, closer technical co-operation, to increase the number of work sharing tanneries, could be assisted by UNIDO, being a neutral advising body, having experts available for advice.

Basically, we have to understand, hides and skins producing countries wish to export leather, or even finished articles instead of raw hides. This is valid for developing and developed countries.

But they also must achieve standardized quality and meet fashion demands on 1 - 2 weeks notice, which are beyond their capacity in the case of exports towards important consumer countries like Europe, USA and Japan. In addition, substantial percentages of the profit should not be absorbed by high transport costs (air freight), incurred to minimize delivery time. These are important organisational "inside aspects". But let's not forget the "outside aspect", the overall situation - leather versus substitutes - as seen by millions of consumers free in choice and having each a tight budget. -

On their preference for leather depends finally the prosperity of the leather industry.

It is therefore reasonable to co-ordinate all positive factors. Wrong would be, in the long run, confrontations between, e.g. a European or US-tannery offering its 3rd or 4th grade leathers, against an underpriced 1st grade hide from a developing country, because it is finished without fashion appeal and has therefore to be marketed at a lower level.

Such price, quality conflicts will give the result that both tanners are losing money and it will weaken their economic standing.

The leather industry on both sides, developed and developing countries, will lose capital for further modernisation, needed badly, facing competition of substitutes. The two competitors therefore should co-operate, to upgrade the first class hides since there is a world wide shortage in this range. It is to suggest that tanneries in developed and developing countries get more and more in direct touch with each other e.g. with the help of UNIDO to work out specific production recipes and production programmes for definite types of leather and set selection standards and prices.

Up to the "wet blue" the work would be done in the hide producing countries, for all grades. The lower grades not valuable enough to carry transportation costs, should be finished for the home market.

Medium grades for so called standard articles e.g. black sides or brown suedes could also be finished in the hide producing countries, according to recipes and shades agreed upon. Sales could be done through the partner-tannery in the consumer country. This being close to the customer, should also give current instructions regarding the marketing. This allows timely production of articles which are in high demand e.g. nubuk or softy sides of a specific character and in the demanded colours, and produce a better priced leather, provided transport time will permit delivery on time.

Sufficient flexibility, on the question where to finish such leathers would have to be agreed upon from case to case, as given by the market situation. The closer we come to the finished state the more important it is that production partners inform and advise each other on previous work stages. This bilateral exchange of technical information financially regulated e.g. by royalty agreements, maybe by leather, - is unusual to a trade with traditions of so called professional secrets.

However, to make a firm stand against substitutes and develop faster - the leather industry should utilise its know-how. With good will, mechanisms

for clear, commercially fair regulations, have to be developed, whenever possible by tanners themselves, not on a national but on an international basis.

As such co-operation is often impaired by shortage of capital and know-how in both developed and the developing tanneries, partnership could be extended. For instance a development fund or a bank financing development credits, could be the bridge to give advice on feasibility and economics, granting justified credits, to buy e.g. modern machinery and know-how or stop unhealthy projects.

To gain and hold, with top class leather, the middle and high class consumer sections, must be the mutual, main object, to strengthen the leather industry of developed and developing tanneries, in competition with synthetic

#### Speculation on hide and leather.

Sudden export stops e.g. of hides, wet blues or leather are very problematic, seen under the aspect of competition with substitutes. Such measures reduce the available leather on the free market and lead to sudden price increases - forcing the leather consumer to change over to substitutes.

Therefore all possible measures to avoid situations making speculation worth while should be taken, preferably by a neutral but international institution guarding the interests of the leather industry as a whole.

To reduce speculation, the best remedy would be, to ensure ample hide and skin supply. Any advice how to organize good preservation and complete collection of available cattle hides, and skins should be given e.g. by such an institution. FAO has done a lot of excellent work and deserves every support. -

The increase of cattle stock is largely dependent on the meat market. By 1975 the leather demand in developed countries may exceed production of hides and skins by 150'000 to 305'000 tons per year.

It is fortunate that, due to increased meat consumption, by 1985 the demand in excess of output would drop to 170'000 tons.

But if only the lower level of demand is reached, then in 1985 there could be an excess of 95'000 tons, of hides in developed countries. Instead of importers as today, developed countries would be the future exporters of hides. Some examples, the EEC (EEG) covered 1972 already 70 % of its raw hide demand, Germany covers 55 %, Hungary 30 %. The USA has become with 39 mio hides the leading exporter.

The average per capita consumption of footwear in the developed world is 3,25 pairs per annum, where as in India the figure is now 0,23 pairs only. It is therefore to be expected that in developing countries the domestic market will leave little leather for export. These would cause further price increases of leather, unless all skin resources are made available and the cattle stock's are increased.

As an instrument to organize such measures, a co-ordinating element for the leather industry will become essential.

#### Mobilize hide resources.

A task would be to make better use of available resources of pig skins. To gain such skins it would be good to use the "Wolverine" pigskin puller to get by an economic way coupons of good quality. The one million hog-skins which are presently being produced in USA by this method could advance

over the next few years to 15 - 20 mio. per year. But 89 mio. skins would be available in USA alone, and 60 mio. in West-Europe, if not scalded to remove bristles. A process which Ralph Nader rightly considers unhygienic. Japan with an annual pig kill of 12 mio. could usefully upgrade hide quality by using pig skin machinery. If 40 % of these pig skin resources could be mobilized, approx. 60 mio. pig skins or 120'000 - 240'000 tons per year, that is the uncovered demand of hides, would be available. These would stabilise hide prices. Unfortunately these figures will not be reached quickly, due to traditional meat consumer customs using the hide as protecting rind for hams and bacon. However, e.g. hams are more and more canned. In meat packing the rind will become partly a useless, even disturbing element. - For hygienic and practical reasons the hides or at the least the coupons should be used for leather as far as possible. It is not unlikely that government legislation may enforce it for hygienic reasons. Due to the fact, that during scalding the very dirty bacteria infected water is entering the animal through it's mouth and all other parts the hide has been hurt.

For what are pig skins useful:

Intensive studies have proved that, very good looking, high quality garment and shoe suede, suede for furniture or wall decoration, as well as nubuk and nappa, upper leather and leather goods etc. can be produced. In Polen even side leathers are partly replaced by finished pig skins.

Another project, deserving studies, would be, to make use of the 20 - 30 kg shark hides, useful for leather goods and shoes. Alone in Senegal 15'000 sharks or about 400 tons per year would be available. In USA sharks are shot and left as food for other fish, a rather wasteful way, considering the shortage of raw hides.

To mobilize free available hide resources does of course apply also to cattle hides and skins such as sheep, goat, etc. Cost and good preservation and quality grading can still be improved a lot in many countries.

Additional aspects are to be considered valid for all raw hides. Pollution control and environmental pressures require elimination of effluent. In future these may lead to a division of wet processing including soaking, liming etc. up to pre-tanning in one, and in a second plant retanning, fatliquoring, dyeing and highly specialized finishing, may be done. Wet processing should be done near the source of the raw hides, e. the slaughterhouse, eliminating as far as possible salt preservation\* for pollution and economical reasons. \* (0.40 sFr./kg raw hide)

The raw hides should however not be processed to a state reducing their versatility.

The "wet blue" is not yet the ideal solution for the very specific requirements of the wide spread production programmes of the leather industry. Now, more versatile, but simple methods should be developed to obtain a "crust" in standard grades, easy to transport, to store, to pack at uniform humidity.

Some interesting efforts have been made by the Hattler Export Development research team with a process known as "fringe veg" which has proved satisfactory for skins and light hides. "Fringe veg" is marketed in dry condition and contains a very low percentage of chromium salt plus a minimum of tannin extracts to allow easy rewetting.

Other possibilities should be investigated, particularly for garment leathers, which in some countries have reached 26 % of the output. e.g.

a one bath process, with a fatliquoring after bating, including humidity stabilisers and sufficient hydrophilic groups to facilitate complete and easy rewatering. As a safeguard against putrefaction minimal amounts of glutardialdehyde and/or chromium salts could be used. Such a crust leather should be set out, dried, sorted and packed in polyethylene, kept at 14 - 16 % humidity.

The ultimate aim of such "crust" leathers should be, to optimise selection and versatility to divert the appropriate price and quality classes of hides and skins to that production line, which are the most economical and technically the best possible solution, thus avoiding the present medieval and risky practice buying "a pig in the poke". The fact that raw hide <sup>accounts</sup> for 30 - 60 % of the final selling price of leather, stresses the point that such a crust market should allow the purchase of accurate quality grades, on which reliable production calculations could be based.

#### Regional pilot plants.

Not every tannery has the staff to work out standardized working procedures. Regional pilot plants, financed by a large group of tanners could give the strictly production oriented guide lines to the industry. Specialists experienced top technicians, could be engaged, may be on own accounts or with UNIDO's help. Furthermore the chemical industry could under such conditions provide more effective assistance.

"Regional" can refer to an area where the hide or skin supply is of the same type. Such a region must not be identical to frontiers of nations. Since the technical problems are given by the type of hides, skins and the consumer markets, it would be rational, that the concerning countries work together running one plant only, facilitating exchange of sample packs for the purpose of technical development.

A regional pilot plant or model tannery, once started, should be run as a largely selfpaying unit. With the profits made a.) by the leather produced, b.) the technical, and c.) the organisational know-how given. The latter would be paid for by participating tanneries or development funds. It could be a co-operatively owned unit belonging to the tanners, or the states concerned and be advised e.g. by UNIDO experts.

The functions of pilot plants, have to be clearly defined, to work out such procedures, which can be directly and on short notice transferred to the participating tanneries, allowing them to follow fashion trends with high flexibility, which in turn means, a better leather price and more profit.

The pilot unit should test the latest equipment, such as machines, production control methods, rationalised working procedures, from raw hide to finished leather. Also new chemical products for the leather production, effluent problems, etc. A third of the pilot tannery's staff should be recruited on a regular turnus from the participating tanneries. This provides the transfer of knowledge in a most efficient way.

Of course such a pilot plant could be added to a technical college for leather students, or vis - versa a college could be added. It should however not become a college laboratory. It must remain a true production unit - with limited output. (approx. 200'000 sq.ft/month) It should never become a competitor, its function will be guidance, helping to reduce the comparatively high risk of leather production, to assist well planned investment

and marketing. - The pilot plant should also study in what way production could be adapted to existing local industries in need of modernisation.

### Productivity of the leather industry.

In some developing countries it is said, investments in high productivity equipment and working procedures are not first essentials, since labour is abundant. This appears to be logic at first sight.

However, in the long run it is uneconomic and even wrong.

Industries in our time, ignoring standardized production methods, and failing to achieve high rates of productivity incur heavy capital outlays due to too long processing times and unstable quality.

They will therefore not become nor remain competitive.

### Labour questions

The know-how of a good labour force, is essential for standardized production and further development. The work people have to be paid a fair wage, and must be assisted in their professional education to gain their qualified co-operation, and goodwill, leading to creative work.

### Machine equipment and building.

It is expensive and the ROI (return on investment) to be achieved, a programmed production, has to be calculated carefully, before making an investment, in order to avoid overcapacity and production bottlenecks occurring often simultaneously.

First, feasibility studies, regarding the supply of raw hides or skins, the details of an economically possible production programme, which in turn must be tuned, as closely as possible, to the assumed sales, are needed. The latter again must be based on a marketing study. Such measures will ensure, a well balanced investment and production policy.

Problems of such complexity need assistance and should be solved in co-operation with **experienced technicians and economists** of the regional pilot plant tannery and a guiding institution.

#### Forms of production.

One large production unit may not be the best solution. There are other variations for the financing and organization of industrial tanning, if one firm cannot finance the factory alone.

The tannery of Santa Croce (Italy) are such a unique example. Some 300 small tanneries overcome the hurdles of investments by **work-sharing**, each staying an independent firm, by one specializing on splitting, another on shaving, a third on plating, etc. a fourth has the tanning and dyeing drums etc., having fixed tariffs and keeping their machines working at high capacity, a good return on investment is achieved. Hides may be owned by a partner within this group. He has also to work out the recipes and keep control on quality and marketing.

The continuous development and creative capacity of this unique group, of small but **work-sharing tanneries** can serve as an encouraging example, how even family tanneries are able to finance and reach industrial standing, with a very high productivity and outstanding flexibility to fashion trends.

Another combination would be, that the slaughter house would attach a tannery to treat hides, according to production-specifications, up to the pickled, or wet-blue state.

From there on, smaller tanneries could take over the more complex diversification to different types of leather, by specialised retanning, dyeing, fatliquoring and finishing. The same firms could sell for themselves or as co-operations, the finished leathers.

These few thoughts might be. Unlikely, how a modern thinking tanning industry could consolidate their position, facing the competition by substitutes, with confidence and appropriate measures.

#### World leather promotion board.

The leather industry, as mentioned before, is facing tremendous structural changes. These changes will be speeded up by the competition of leather substitutes. All extremes - from the primitive artisan tannery to the automated, modern production unit exist, today. For all these firms at different development stages regional pilot plant units would be a great help to promote and speed up the formation of a generally rationalised leather industry. But, considering the complexity of this enormous task, there must be a co-ordinating element, let us call it a world leather promotion board. - comparable with that of the wool industry. It's functions would be:

1. To promote the best possible image of leather pointing out to the customers and consumers all over the world the advantages of leather against substitutes, since they want to know, why and for which properties of leather they have to pay higher prices than for substitutes. And as a fact leather has such superior properties.
2. To consolidate a good image, controlled standard qualities marked by internationally known labels, which reach, like the "pure wool" label, all consumer circles, should be established, to make clear to each consumer, that he gets good leather. And when buying he will have a guarantee, what is made of good leather and what of substitutes. This is a very important point. Already now many shoe buyers and not even the sales personnel are certain, if a shoe is made of good leather or substitutes and to which

percentages substitutes have been used, such as synthetic leather, harm to the leather industry. Still more, the consumer should, by legislation be protected from misleading imitations. As a further step, it should be made clear, that leather, provided it is properly treated, can be classified officially to be an easy-care article. Today's consumers have an ear for such properties - and as leather becomes more expensive - they expect with a good right additional qualities. Consequently the leather industry should take determined steps in production regarding easy-care properties, e.g. for shoe upper, furniture- and nappa garment leather, easy-care finishes are based on polyurethane-lacquers. Such garments should carry labels and instructions regarding washability and dry-cleaning. Garments should obtain, as a new quality standard, hydrophobic and oleophobic treatments. Furniture leather - an expensive article used over years, should be fast to light and easy to clean, etc. By such measures the consumer's friendship for leather is consolidated, since the easy-care properties of substitutes are a tempting factor for the customer.

Many of these treatments are already known, but not applied - with the argument they may increase the cost of a m<sup>2</sup> leather by 3 - 6 %. Is this not little in comparison to recent hide price rises of over 100 % ? - But, as a true upgrading, easy-care properties would support the image of leather enormously - against substitutes.

Such efforts would be rewarded by sales, only, when it is explained to the public and to the sales personnel. Better than national leather promoting boards - which have done excellent pioneer work, promotion of such a kind, could be undertaken with more effect by a world leather board, since most of the leathers tanned today, are not any more consumed in the country where it has been produced. Such a label signifying quality leather would be a promoting element for each tannery and would have it's price. The money earned thereby should finance partly the leather boards activities.

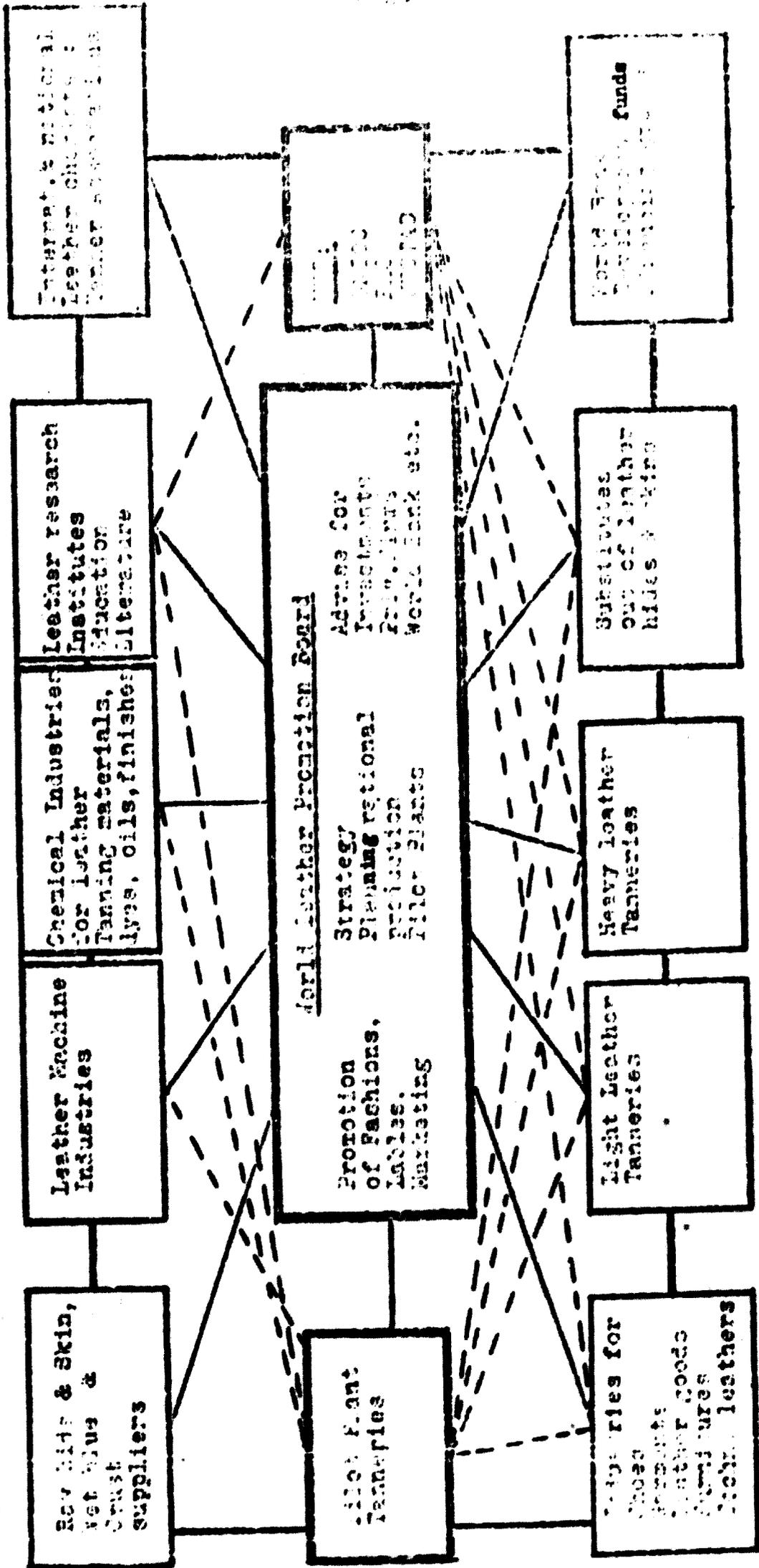
3. The board's inside function in the leather industry.

Statistics on hides - world wide - have been established for the first time by FAO. Statistics are a valuable instrument for investments, research and consumer demand estimations.

The balance: available resources of hides, against a fast growing consumer market, must lead to an international leather industry strategy, for which the tanning industry must have a guiding and representing instrument which could be this world leather promotion board.

It could also represent the leather industry and be the right partner to work together with international organisations such as UNIDO, FAO and UNCTAD. The functions would go further, and to illustrate these possibilities Fig. 3 may suggest some ideas of it's co-ordinative value.

**Fig. 3**



4. A world leather board would need power to be effective. However such power should not be onerous. It should be the power of an attractive, highly intelligent, modern conception for a world wide organized leather industry to ensure participation of most tanneries.

To constitute such a board or "brain trust" able to win world wide confidence of the leather industry, the consumer industries for leather, research institutes, pilot plants, the financing institutions, national governments and the international organisation of UNO, qualified representatives out of these organizations should be elected in a turnover of 5 years. This board should decide on basic concepts. A team of 10 qualified experienced experts would also be essential e.g.

- 2 leather chemists, representing research and practical leather production.
- 1 plant planning specialist,
- 1 leather promotion specialist,
- 1 specialist for marketing,
- 1 specialist for book keeping advice,
- 1 for finance and
- 2 as "foreign ministers" for relations to firms, governments and international organisations.
- 1 as the director of the 10 man board.

These 10 specialists would be the standing group of the board, assisted by 12 experienced, permanently engaged field technicians keeping in touch with daily production problems, to work out together with the standing group, realistic concepts, on which the future leather industry could find clear orientation, to produce leather of better quality, highly rationalised, using less production time, offering attractive working conditions, all essentials for a sound, self-supporting modern industry, with a bright future.

Appendix 1

To get information on the fashion trends, leather fairs should be visited e.g. in

Italy, Bologna, Florence, Milano: shoes, leather goods, leather garments.

France, Paris, Semaine du Cuir: leather, shoes, garments, machines.

England Leather Expo, London: leather, shoes, machines,

Brazil Novo Hamburgo FENAC: shoe and leather fair.

Germany Pirmasens: shoes, Frankfurt: furs, Munich: garments

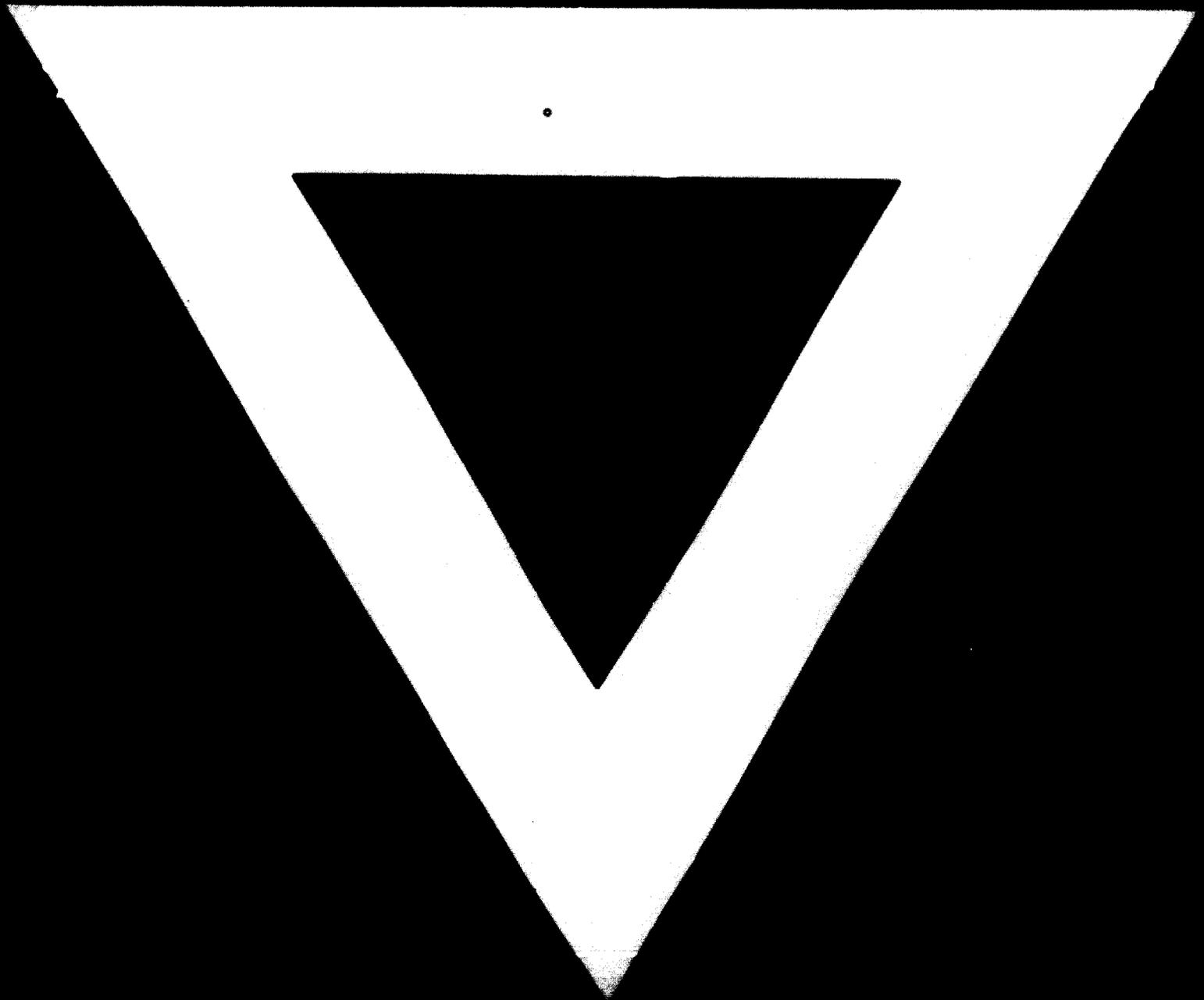
Spain Elda: footwear and leather.

There are also many good trade Journals to mention a few:

"Leather" an international Journal of the leather industry or

"Mode in Pelle" an Italian publication. "Das Leder" or "Häutemarkt" provide also useful documentation.





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