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# Interrelation of trends in the American fragrance market and the essential oil industry

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Throughout the history of perfumery, essential oils have provided the inspiration and basis for the creation of fine fragrances for both women and men. Until the late 19th century they were the principal materials available to perfumers. Then significant discoveries in the field of chemistry led to the development of solvent extraction of essential oils in the 1880s. As we entered the 20th century the field of organic chemistry began to unfold. The research and developments of chemistry gave the perfumer new and more diversified tools with which to work. They also made available processes that could provide such chemicals in great quantities and at reasonable prices. Research chemists investigated the natural oils to determine the source of their odors, isolated their individual components, and then began synthesizing them as well as creating new aroma chemicals which had no counterpart in nature.

These events marked a turning point in our industry, as modern perfumery came into being. Perfumery would not be the great industry it is today without the development of modern chemistry and its synthetics. The marriage of natural oils and synthetic aromatic chemicals provided perfumes with a new intensity and uniqueness of character. All the great names of the successful perfumes today owe their success and their greatness to the skillful blending of essential oils and aromatic chemicals.

Aromatic chemicals also broadened the application of perfumery. Fine fragrances, once created only for the well-to-do, began to find broader popularity as availability and price came within the realm of reality for more people. The application of fragrance into a multitude of product areas began to grow until today there is hardly a cosmetic or household product on

the American market that does not contain perfume.

The judicious use of essential oils blended with aromatic chemicals has made possible the perfuming of such products as paints, high pH detergents, insecticides, suntan lotions, floor polishes, and paper, where before, with the use of essential oils alone, this would have been impossible for reasons of stability, availability, and cost. Again, through the use of aromatic chemicals, the quality of lower-cost perfumes has been constantly improved despite the strict price limitations imposed by economic factors. Soaps and detergents in any price range are much better perfumed today than only a few decades ago. The tonnage necessary for perfuming this range of products is such that only aromatic chemicals can satisfy it.

If it sounds as if I am praising aromatic chemicals while minimizing the importance of essential oils, do not misunderstand me. The essential oil industry and the synthetic aroma chemical industry coexist harmoniously to help answer the needs of the perfumer. These industries are complementing, not competing. In today's perfumery, synthetics are not considered as a substitute but rather as a complement to the natural essential oils.

Let us look at some of the more famous fragrances, and how essential oils and aromatic chemicals have been used to provide their unique character.

Chypre is a fragrance that goes back to the remotest antiquity. It is even claimed that Venus went to seek this perfume on the island where her temple was held in greatest veneration, the island of Lesbos, where it seems the best chypre was manufactured. What was it? We do not have a formula of that period, but all the books that speak of perfumes down through the centuries refer to chypre.

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The importance of this fragrance type is so great and its acceptance by the public so general, that when perfumers are at a loss to create a new perfume and wish to be certain of not producing a failure, they create a chypre, with slight modifications to give it personality. Thus, over the years, a number of very popular fragrances have been developed, all evolving out of one basic theme. Let's compare some of these.

The classic chypre, as we know it, was created by Coty in the late twenties. The basic components are oakmoss, bergamot, patchouly, sandalwood, vetivert, various balsams, clary sage, floral touches of rose and jasmine, and the animal note of castoreum. Next came Mitsouko, which added to this basic theme gamma undecalactone, a peach note, and was the first in a generation of fruity fragrances. Then came *Femme*, which accented the peach note even more. By adding to the classic chypre a bouquet of aliphatic aldehydes, *Crepe de Chine* was created.

Next in the fragrance family was *Miss Dior*, the first modern perfume to add galbanum as a top note. This fragrance also contained a powdery character provided by the addition of such crystalline components as coumarin, heliotropine, vanillin, and synthetic musks. Finally, I would mention *Cabochard*, which has taken the notes of *Miss Dior* and added styrallyl acetate and isobutyl quinoline, accenting the patchouly and green character as well as providing added impact.

All of these fragrances are built around the basic chypre accord, and all bear a family resemblance in their basic odor character. However, by varying the ratios in this blend and through the addition of key aromatic chemicals and essential oils, each fragrance is unique.

Oriental fragrances have also enjoyed a long-lived popularity, deriving their rich, sensuous, long-lasting body from blends of resins, balsams, and animal notes, incorporating amber notes and bergamot as in *Tabu* and the sweetness of vanillin in *Shalimar*. Several unique oriental types have evolved using orange flower and the spiciness of clove. These include *Bal à Versailles*, *Private Collection*, *Ciara*, and *Oscar*.

*Vent Vert* was the first truly green fragrance. Created in 1945, its green character is derived from the use of galbanum and hyacinth along with aromatic chemicals like phenylacetaldehyde, which support this effect.

The rich sweet florals like tuberose, jonquil, and jasmine have had a resurgence of popularity as seen in *Chloe*, *Jontue*, and *Candid*.

In the men's area eau de colognes dominated the market for a long time. These fragrances were light, fresh, not very residual, and gave the wearer a refreshing feeling. Their basic accord consisted of bergamot, orange, lemon, verbena, lavender, petitgrain, neroli, and rosemary with touches of geranium and artificial musks, usually musk ambrette and musk

ketone. There were a number of variations around this theme. *4711* and *Eau de Cologne Imperiale* are two examples of classic eau de colognes. *Eau Savage* is a sophisticated example of a modern cologne for men. In addition to the basic eau de cologne accord this fragrance includes herbaceous pepperiness with notes of sage, thyme, coriander, and black pepper; woody notes of patchouly and vetivert; and most importantly, hedione, and aromatic chemical which gives a jasmine character.

Wood notes of sandalwood, vetivert, and particularly patchouly incorporated with woody aromatic chemicals like isobutyl quinoline and isopropyl quinoline and floral notes of jasmine are now very much in vogue. *Polo* and *Halston* are examples of this theme.

Essential oils have also been an integral part of the broad range of product perfumes, from fine cosmetics to household products. Consider the notes of citronella and lemongrass in Ivory soap, pine oils in hard surface cleaners, lemon in dishwashing detergents, and the fresh clean connotation of lavender/lavandin in Irish Spring bar soap and Lysol room spray, to name a few.

Again, I would emphasize the important role that both essential oils and aromatic chemicals play in meeting the demands of the fragrance industry. Aromatic chemicals can add a unique twist to, as well as accent and support, essential oils in the fine fragrance area. They help in the development of stable fragrances for application in a wide range of products, and overall they help meet the volume required to supply the needs of the industry. Essential oils, on the other hand, play a key role in providing the main fragrance character in the fine fragrance area, while providing more subtle nuances in the lower-priced product perfumes so necessary if they are to be truly acceptable and successful.

The continued growth of the fine fragrance market, particularly in the field of men's fragrances, and the ever-expanding use of fragrance in new product areas, creates an ever-growing demand for essential oils by the American perfume industry and throughout the world.

Speaking only for my home country, I would like to briefly cite some supporting statistics. Fragrances for consumers find use in two principal product areas in the United States. These are the cosmetics and toiletries area and the household cleansing products area. From 1972 to 1979 growth rates in both product areas have out-performed both gross national product growth and population growth.

Cosmetics/toiletries sales at the manufacturer's level have grown at an adjusted rate of about 4.5% per year; household cleansing products at an adjusted rate of 5.4% per year. The GNP, in 1972 dollars, has shown a 3% increase per annum. Population growth has been flat, growing 5.7% over the period or less than

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1% per year. To state the obvious, consumers are using more and more fragrance products.

What is not shown here, but is well known, is the increased level of use of fragrances in consumer products. I would cite two examples. In the fine fragrance area men's colognes with perfume levels of 8-10% are rapidly increasing in popularity as opposed to after-shave lotions where 0.5-2% perfume levels are more common. As far as shampoos are concerned, 0.2-0.5% fragrance levels used to be the norm while now we commonly see 1-1.5% levels among new product entries. Bar soaps are also following this trend.

In the United States we are also seeing an explosive growth in the use of "environmental" fragrances, which translates into more demand for essential oils and aroma chemicals. While this growth is welcome, it also brings with it some problems. As the demand for perfume raw materials increases, the perfumer must be more than ever concerned about availability, consistent quality, and realistic prices. This concern applies to aromatic chemicals as well as essential oils.

Concerning availability, the art of perfumery, like the growing of essential oil producing plants, is an unhurried process. The time from the start of the creation of a fragrance, to the commercial introduction of a product using that fragrance is measured in years. Perfumers, knowing this, must feel certain that, barring the most unexpected of natural disasters, the raw materials they use today will be in good supply when production quantities are needed. They must know there is a commitment on the part of everyone in the supply chain to that material now and in the future. By the same token, perfumers assume a moral obligation to provide maximum exposure to the producer's raw materials, thus enhancing the economic viability of the growing operation.

In the area of quality, as with availability, use today by a perfumer of a fragrance raw material in his creation establishes an informal "contract" with the enterprise that intends to use that finished fragrance in a product. The expenses associated with fragrance selection and product test marketing are enormous. The safety-in-use and stability testing represent many hours of work and more expense. In these days of increased governmental surveillance formula change may be illegal. Thus, perfumers have to feel that, inherent in the use of a fragrance raw material, is an assurance that there will be no surprises when manufacturing quantities are ordered, months or years after initial formulation.

Like supply and quality, the impact of extreme fluctuations in fragrance ingredient prices during the product development time span can be distressing—not as much as the two previously discussed problems, however. Price increases for which justification is difficult, are the most distressing. Since 1974, when the industry experienced raw material shortages and severe price increases, knowledgeable people in the

consumer products companies can deal with cost pass-alongs where energy is involved, from scarce feed stocks, or where there has been a natural disaster affecting crops. Those increases which appear speculative and artificial, however, cast doubt on the reliability of supply and supplier and can thus damage the future of the relationship.

What then is being done and what might we be doing in the areas of maintaining availability, consistent quality, and realistic prices of essential oils used in the field of perfumery? It is recognized that the essential oil industry is basically an agricultural endeavor and as such depends on a balanced use of land and labor. If balances shift, either because economics dictate a change in land use, or labor is able to obtain more gainful employment elsewhere, problems will develop.

The essential oil industry has obviously been sensitive to this fact as it continues to search for new growing areas to meet ever increasing demands and to maintain realistic prices. North Africa, including Morocco, Algeria, Timisia, and Egypt, can be cited along with South America and Asia as prime examples of this effort. However, an even greater effort may be needed in this area. Eric Bruell, in his President's Report to the Essential Oil Association of the United States made in January 1980, pointed out that "one of the most significant factors in 1979 was the relentless price rise among almost all the lower and medium priced essential oils. Some of the extreme examples caused by short supply were citronella, patchouly, petitgrain, lemon, bergamot, caraway, and dalmatian sage oil." He also noted: "Petitgrain doubled in price because one company decided to use vastly more oil without researching the market or alerting the industry to push for higher production with proper price incentives." Greater long-term planning and dialogue between the suppliers and consumers of essential oils to increase their awareness of the needs and problems on both sides would help avert such situations.

In the area of quality I would cite the triannual meetings of the International Congress of Essential Oils for providing a forum through which scientific papers from all over the world can be presented, giving broad coverage to the work in progress in this field. The work that the Research Institute for Fragrance Materials and the International Fragrance Association are doing (which will be discussed later) is also very important in assuring both quality and safety.

In the United States, the Fragrance Materials Association, continuing the work of the Essential Oil Association, has an active program to establish analytical standards for essential oils as one method of assuring uniform quality of these materials. This organization has also initiated the idea of standardizing contracts in an effort to create a common language and build greater trust between the contracting parties.

But contracts of any kind are only as good as the individuals making them. If trust is to be developed between buyer and seller, high business ethics will be the key to success. China, among others, is an example of a country that exercises such high ethics. This fact plays an important part in China's emergence as a prime supplier of essential oils.

While on the subject of business ethics, I would like to turn somewhat philosophical, if I may. The Lockheed affair is a watershed in the annals of how government views business and how the public views business. With little respect to the time proven maxim "when in Rome, do as the Romans do," the United States government has increased its interest in how a company operates. Equal rights, equal opportunity, freedom of information, government agencies like OSHA, and many other programs and agencies all are partners in various aspects of United States company operations. Business ethics statements by corporations are increasingly common, and the attitudes of employees and the public are such that these statements of ethics are more and more living documents. The quality of life concept in the United States is sufficiently important that blind, unquestioning obedience to an employer is a thing of the past.

As those in business understand this, they have increased expectations about the ethical level of their business relationships. They may find dual standards distressing and distasteful, and may seek to avoid them. While not admonishing those in other countries with whom they are dealing, who may act in ways that make them uncomfortable, they will increasingly turn toward those who understand the pressures under which they operate, and whose business ethics are in least conflict with their own. Participation in business by government, consumer groups, employees, and others is such in the United States today that Americans cannot simply leave behind their modus operandi and adopt 100% the ways of the country in which they are dealing. Compromise and mutual understanding have never been more important than they are today.

On the point of price, much ongoing dialogue is needed to insure that each party is aware of the problems and opportunities facing the other. This communication provides maximum time for dealing with the unexpected, minimizes unpleasant surprises, and is of great benefit in the planning process of all parties.

Commercial dialogue will enhance the interest and understanding of everyone involved in this industry. The Research Institute for Fragrance Materials (RIFM) and the International Fragrance Association (IFRA) may be cited as examples of the strong benefits derived from open communication and international cooperation in confronting common problems.

RIFM was established in 1966 "to gather and analyze scientific data . . . relating to the properties,

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preparation, and use of fragrance ingredients . . . and to engage in a testing and evaluation program relating to existing . . . and newly discovered . . . fragrance materials." In other words, it was established to provide the fragrance industry with a safety basis for the raw materials used in perfumery. RIFM's outstanding accomplishments are well known, and are part of the public record. It is important to note here, however, that while protecting the consumer, RIFM has admirably served us all by not simply letting those essential oils and aromatic chemicals that have shown some adverse results disappear. They have continued expensive and exhaustive testing, searching to find ways in which these materials can continue to be used.

IFRA, formed in 1973, was chartered to ensure the in-use safety of fragrance materials and to collaborate in the development of international practices and regulations as to the use of fragrances in consumer products. Think of the cooperative effort needed to create IFRA's Code of Practices, ascribed to by the national associations of thirteen countries including France, Germany, Italy, Japan, the United States, the United Kingdom, Mexico, and Spain. Add to this the cooperative efforts between RIFM and IFRA as to scientific data outlined in IFRA's Code of Practices. Certainly these organizations are prime examples of the benefits of increased understanding and communication.

As an active step in this direction, the American Society of Perfumers has initiated a program of annual visits to various suppliers and growing areas around the world. We began in 1979 with a visit to Grasse, and have planned a trip to the growing areas of Spain for 1981. The purpose of these trips is to give perfumers an opportunity to meet first hand the suppliers of essential oils used in perfumery, to see the growing areas, and to develop a better understanding between these two areas. It is too early to tell, but we hope the program will grow to the point that we can invite other societies to join us in these interesting and informative excursions.

In conclusion, natural essential oils are the perfumer's oldest tools and continue to be an indispensable part of the perfumer's palette. Through skillful blending with aromatic chemicals we can create new and unique fragrances covering a broad range of applications and prices. The United States, with the largest fragrance market in the world, is also the leading consumer of essential oils. Therefore, continued dialogue and cooperation between essential oil suppliers and creative perfumers must be maintained and strengthened if the growing demands of the American market are to be satisfied.

#### **Acknowledgement**

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