

A Tribute to the Oldest American Flavor and Fragrance House

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On January 1, 1991, Fritzsche Dodge & Olcott (FDO) was acquired by Givaudan of Switzerland from BASF of Germany. Givaudan acted quickly to merge this almost 200-year-old company into its operation. While FDO does not exist as a separate company, a solid foundation of knowledge, a unique company culture and a proud tradition will continue into the future together with a somewhat similar heritage of Givaudan.

This tribute to FDO recalls how that company became a leader in its industry.

Dodge & Olcott

The history of Dodge & Olcott goes back to the end of the 18th century, seven years after American Independence, when in 1798 a young New York pharmacist named Robert Bach, a contemporary of George Washington, set up a business for importing pharmaceutical and chemical products at 128 Pearl Street in New York. The items imported included essential oils, perfumes and soaps.

In 1821 he found an associate and the firm was renamed Bach & Bradish. In 1840, two new associates joined and the name was changed again, this time to Dodge, Cuming & Co., and the company set up an office in London. In 1850 there was yet another associate and a new name, Dodge & Colvill, together with a second office abroad, this time in Paris.

The first Olcott joined the firm in 1859 and the name became Dodge, Colvill & Olcott. At this time, the company began production of aromatic raw materials. Colvill left the business in 1861 and the name was changed to Dodge & Olcott (D&O). It is under this name that this long-established essential oils firm was going to be known for many years to come.

Production increased rapidly and by 1862 D&O was producing oils of cumin, sandalwood, nutmeg, cloves and bay.

In 1880, distillation output had reached such a level that a new factory was built in Brooklyn, followed in 1904 by another plant in Bayonne, New Jersey.

It was a blessing for D&O when Dr. Francis T. Dodge joined the company, probably in the early 1880s. His skills enabled him to synthesize a range of aromatic products which helped D&O in the 1920s and 1930s to attain a dominant position in the flavor and fragrance industry. In 1890, he became the first chemist to identify and isolate citral. He also participated actively in the development of citronellal, citronellol and various aldehydes.

His vision led him to go beyond his company: the need to standardize and authenticate raw materials for the entire industry became his obsession. His founding of the Essential Oils Association in 1927, in order to set product standards of excellence for suppliers and customers alike, was his greatest achievement. In recognition of his company's efforts, Dr. Dodge, the first president of this association, was succeeded by various members of the Dodge & Olcott management team as president for many years to come.

In the early 1890s, the D&O offices were situated in a building on William Street in New York. Mr. Dodge and Mr. Olcott, although they became blind in old age, continued to go to the office regularly. A little later, the firm bought its own building at 87 Fulton Street where it remained until it moved to 180 Varick Street in 1930.

During World War II, D&O became active in the field of insecticides, using pyrethrum extracts. It supplied these natural substances for use in millions of "bug bombs" which protected American troops based in the South Pacific from diseases transmitted by insects. The company followed up this initial success with the development of a major insecticide, pyperonyl butoxide.

During this period, D&O was taken over by National Distillers. But National Distillers soon felt that this new

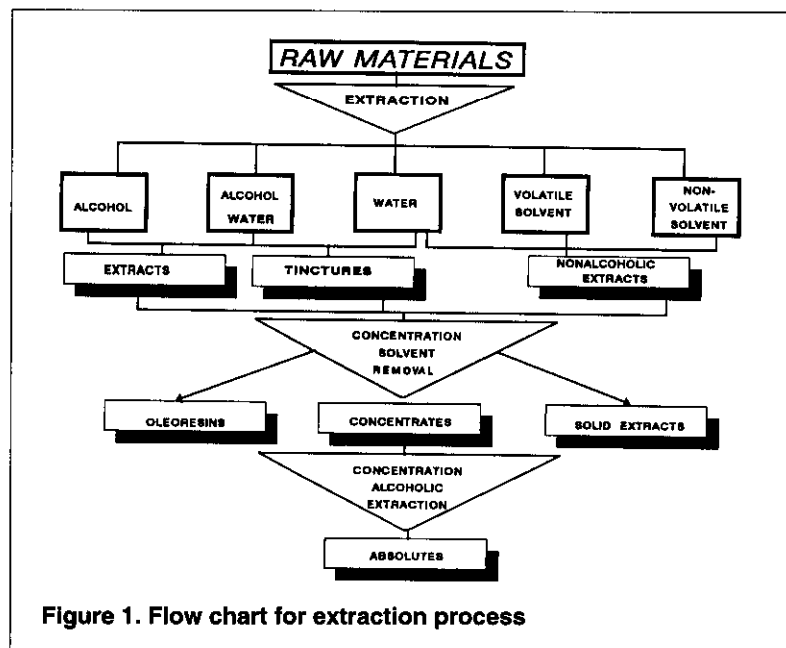


Figure 1. Flow chart for extraction process

subsidiary, dealing with raw materials for the flavor and fragrance industry, was not in line with its long-term objectives. As a result, Dodge & Olcott, the oldest essential oils firm in the United States, was sold in 1952 to Fritzsche Brothers, Inc. D&O continued its activities as a separate business until 1969, when the two companies merged.

Fritzsche Brothers

The story of Fritzsche Brothers goes back to 1871 when the three brothers of German origin, Paul, Herman and Ernest Fritzsche, set up an association with Schimmel and Co. of Leipzig, Germany. They started a business in the field of essential oils and called it Fritzsche Schimmel & Co. At that time, Fritzsche owned a production plant in Hoboken, New Jersey, and an office in New York.

By 1892, the Hoboken factory was no longer adequate and was closed. It was replaced by a new plant and a research center in Garfield, New Jersey. At about the same time, the New York offices were transferred to 34 Barclay Street, and Frederick H. Leonhardt, Sr. joined Fritzsche Brothers as head of the laboratories. When the Fritzsche brothers retired, he became general manager of the firm, making Fritzsche Brothers an all-American company.

Fred Leonhardt provided unique leadership for the company while holding various positions in both technical and administrative areas. He became the company's Chairman of the Board in 1953. Several achievements during his long and steady leadership translated into a healthy business growth and a competitive edge for the company. But his biggest achievement was being the mentor of Dr. Ernest Guenther.

The Garfield plant was sold in 1900, and management entrusted Dr. Clemens Kleber with the task of running both production and the laboratories. Dr. Kleber, who had pre-

viously managed the Fritzsche laboratories, opened his own private laboratory and factory in Clifton, New Jersey.

In 1907, the New York offices were transferred to a bigger site at 82 Beekman Street.

Dr. Kleber and Dr. Guenther

Dr. Clemens Kleber's leadership in analytical work and organic synthesis was instrumental for Fritzsche Brothers and the whole industry during World War I, when supplies of raw materials and chemicals from Europe were cut off. He became a well-known authority in the flavor and fragrance industry. Shortly after the war, the firm, under the name of Fritzsche Brothers, Inc., bought its own production unit, Les Parfumeries de Seillance, in the Var Department in Southern France. This made it less dependent on outside essential oil suppliers.

In 1935, Fritzsche Brothers, Inc. bought the Clifton site from Dr. Kleber. Also that year, the Beekman Street offices were destroyed by fire and the firm moved to its headquarters location at 76 Ninth Avenue in New York City.

A young chemist, Dr. Ernest Guenther, joined the firm in 1924. He had been an assistant to Professor Dr. A. Hesse, an authority on natural flower oils. Because of his experience and years of traveling in Europe, the executives of Fritzsche Brothers sent him to France in 1925 for conducting a survey of the lavender producing regions. The results of this survey were so interesting that Mr. Leonhardt decided to have Dr. Guenther survey every essential oil producing region in Europe and, eventually, of every country in the world. This work continued until 1960 and provided detailed information of actual conditions prevailing in the production of every essential oil used in the trade.

During his surveys, Dr. Guenther studied growing conditions, harvesting and distillation methods. He also brought back to the US sample material produced under his supervision. These samples were examined and analyzed in the laboratories in New York. Confusion and uncertainty regarding the purity of essential oils in the industry gave way to established standards of purity. Dr. Guenther was able to find the most reliable producers abroad, as a result the company procured the highest quality essential oils.

It was the policy of Fritzsche Brothers to make the results of Dr. Guenther's work freely available to the trade. A series of more than 100 monographs reflecting his studies is well known. This information proved to be of great value to the government and the trade during World War II. It formed the basis of many experiments and ventures undertaken to establish new sources of supply while the American industry was cut off from European sources.

Government agencies, especially the Department of Agriculture, relied heavily on Dr. Guenther's monographs which are unique because they are based on personal observations. Also unique are the colorful motion picture

films taken by Dr. Guenther during his surveys and presented from time to time to interested trade, government and educational groups.

Dr. Guenther's work was so impressive that pressure and encouragement made him publish a treatise of six volumes on essential oils between 1948 and 1952. This series of books is without question the premier technical reference source on essential oils to this date.

Other Mergers and Acquisitions

Fritzsche Brothers, Inc. bought Dodge & Olcott in 1952 and the two companies merged their operations in 1969 to form Fritzsche Dodge & Olcott (FDO). Production of the combined firms was then centralized on a 65 acre (36 hectares) site in East Hanover, New Jersey, while the manufacturing of natural products continued at the Clifton site.

In 1980, BASF of Germany acquired FDO. FDO continued to operate as a separate business until its acquisition by Givaudan ten years later.

The vision and creativity of the leaders of FDO crystallized in the old FDO natural products plant in Clifton, New Jersey. A visitor to this Third Street site in Clifton might wonder if this is "Grasse in New Jersey."

It started in 1907 when Dr. Kleber opened his own laboratory there. He analyzed essential oil samples for five cents each. Dr. Kleber served Fritzsche Brothers exclusively for 31 years. Upon his death, the factory was purchased by the company and subsequently modernized. The massive knowledge collected by Dr. Guenther was channeled into making this site the leading American manufacturing plant for essential oils and oleoresins. Even today, more than 200 different spices, herbs, roots and seeds from various parts of the world, as well as US, are processed by extraction and/or distillation.

Convergence of Technologies

The example of a seemingly simple spice extraction shows the complex scientific and empirical technology involved. The following parameters of the process and attributes of the raw material must be considered in faithfully preserving the whole flavor profile:

- temperature and pressure of extraction and concentration
- type of solvent (e.g., polar/non-polar, water soluble/insoluble)
- the optimum number of extraction cycles (number of washes with fresh solvent varies from two to seven)
- time required for each extraction cycle
- pretreatment of the raw material (grinding, mesh size, maceration, etc.)
- type and design of equipment (pressure extractor, percolator, steam/vacuum/molecular still, etc.)

Since the six parameters indicated here have a wide range of choices, it takes some hundreds of trials and the lifetime of two to three professional generations to optimize

the process for a given product. Incremental improvements that started with Dr. Dodge in 1891, were continued and built upon by Frederick H. Leonhardt, Dr. Kleber and Dr. Guenther and their teams. Such an evolutionary continuity provides a solid path for innovations, very often leading to convergence of technologies.

Convergence of technologies can be exemplified by looking at the schematic of extractions shown in Figure 1. Conventional thinking would call for a process following one or another established path. However, years of experience and experimenting can lead to a novel path of extraction where various techniques shown in Figure 1 can be utilized to get the full advantage of each in the process. For example, a tincture results from a most delicate alcohol/water extraction in which the flavor's top note aroma is faithfully preserved.

Combining or replacing delicate old techniques with more modern ones can produce an extract that offers the quality and economy sought after by customers. Various combinations and permutations of the parameters mentioned above present an enormous possibility of choices for producing unique oleoresins, absolutes or concretes. Even the important extract vanilla can be produced using innovative extraction ideas in compliance with regulatory requirements: a ten-fold vanilla concentrate has the bouquet of an expensive single-fold tincture type, thus providing a competitive product much needed in this area.

In the early 1950s, it became obvious that industry terms such as extract, absolute, concrete, terpenless oils, etc. needed to be defined. As a result, in cooperation with some outside authorities, Fritzsche Dodge & Olcott issued a booklet called "Basic Terms—Definitions" which is considered the industry standard even today.

Conclusion

A look at the history of FDO proves again the truth behind modern research excellence. It supports the basic law for business success, that a corporation's achievements result from the combined efforts of a team; and any team, regardless of its uniqueness, needs the right leader.

Any company that has survived obsolescence and changes like FDO must have been blessed with a strong culture, a good team spirit and unique leaders. This heritage forms the credentials of a good company.

Givaudan is very fortunate in having been able to acquire FDO in order to strengthen its position in the fragrance and flavor industry.

Reference

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