

**The Litchfield Collection on the History of Fatty Materials
Accession 2413**

Abstract: As a scientist Carter Litchfield (1932-2007) studied and specialized in edible fats. During the mid- to late 1950s Litchfield worked in the Edible Research Section of the Chemical Division of Procter & Gamble. His work there centered on shortening products like Crisco and margarine oils. Litchfield left Procter & Gamble to work at Texas A&M where he earned his Ph.D. He then became a professor of biochemistry at Rutgers University. Litchfield's research there centered on an interest in fatty materials that he acquired while working for Procter & Gamble and he focused on edible oils in marine mammals and aquatic sponges. Litchfield retired from Rutgers in 1979 and he pursued a career as a historian of edible oils, its production and use. This new career led him to write and publish a number of books about oil mills in the United States and abroad. In the process Litchfield built an interesting and significant collection of books, manuscripts, and ephemera relating to the history of fatty materials.

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Jason Sylvestre

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The Litchfield Collection on the History Fatty Materials Biographical Sketch

Carter Litchfield (1932-2007), earned a B.S. in chemical engineering from Rensselaer Polytechnic Institute. Litchfield later earned Ph.D. in organic chemistry from Texas A&M after starting his professional career as a chemist for Procter & Gamble. During the mid- to late 1950s Litchfield worked in the Edible Research Section of the Chemical Division of P&G. His work there centered on shortening products like Crisco and margarine oils. Because of his work at Procter & Gamble, Litchfield developed an interest in the history of fatty materials, which he defined as high-calorie fats found in seeds and animals. Fatty oils include olive, linseed, soybean, cottonseed (all seed oils) as well as lard, tallow, and other animal body fats. Litchfield left P&G in 1960 to take a job as a research scientist at Texas A&M. After a few years at Texas A&M Litchfield decided to work towards his doctorate in organic chemistry.

Litchfield spent nine years working at Rutgers University. His research activities revolved around fatty oils in marine mammals and aquatic sponges. Litchfield published his work on Amazon River Dolphins in a 1970 article in *Biomedical Life & Sciences*. In 1972, Litchfield he published the book *Analysis of Triglycerides*. While at Rutgers Litchfield founded Olearius Editions, a publication company dedicated to the history of vegetable oil and fat production. In 1979, Litchfield retired from Rutgers to pursue a new career.

Olearius Editions (named for the artisan in the Roman Empire who pressed oil from olives and sold it to the community) specialized in the publication of histories of the manufacture of vegetable oils and fats. Litchfield's first book, published in 1974 was an English translation of the 1836 Japanese work, *Seiyūroku*. One of Litchfield's most important Olearius publications was a book he co-authored, *The Bethlehem Oil Mill, 1745-1934: German Technology in Early Pennsylvania* (1984). The book featured first time translations of German documents detailing the craft and artisanship involved at the oil mill. His interest in oil mills extended well beyond Bethlehem, Pa. Litchfield researched and photographed oil mills all over the United States, Europe, and parts of the Middle East. Olearius Editions publications reflected Litchfield's global scope with the publication of another translated work. *History and Technology of Olive Oil in the Holy Land* (1993) was partially translated from Hebrew. The translated edition published by Olearius contains a chapter not included in the original Hebrew publication. Another of Litchfield's important Olearius publications is the *History of Oleomargarine Tax Stamps and Licenses in the United States* (1988), a book known for its precise detail and dedication to an understudied topic.

In addition to writing and publishing about the history of fats and fatty materials, Carter Litchfield built an important collection on the subject. The library includes more than 5,000 books, many rare, which chronicle the history of fats and fatty materials; at least eight languages are represented and the collection spans 500 years. In the course of collecting, Litchfield acquired the Julius Lewkowitsch Papers and purchased the

Ellsworth C. Warner Papers. Litchfield's acquisitions were not limited to publications and manuscript collections. He amassed a collection of ephemera including tax stamps, posters, artifacts, photographs, and other items.

As a member of the Society for Industrial Archeology (SIA) Litchfield regularly attended SIA meetings, functions, and conferences. He often presented papers to the SIA and sat on several committees, including the Vogel Prize committee. Litchfield researched the history of fats and fatty materials until his death on May 9, 2007.

Carter Litchfield married his wife, Carol, in 1960. Like he husband, Carol Litchfield received a Ph.D. in biochemistry from Texas A&M and taught at Rutgers University. Carol Litchfield taught for 10 years before taking a position at the DuPont Company as head of Environmental Toxicology at Haskell Laboratory and then as Senior Scientist for its bioremediation subsidiary. She then started her own consulting company and worked for Chester Environmental prior to joining the George Mason University faculty in 1993.

Julius Lewkowitsch

Julius Lewkowitsch, born in Prussian Silesia on September 4, 1857, was an authority on the chemistry of vegetable and animal fats and oils. Lewkowitsch attended Breslau University, where he studied with Victor von Richter. In 1879 he graduated with a Ph.D.; he also earned a M.A. degree in 1881. After graduation Lewkowitsch spent a year teaching mathematics and natural science in Real Gymnasium in Berlin. Lewkowitsch then took a position as a research assistant to Victor Meyer at the University of Heidelberg. At Heidelberg Lewkowitsch studied fats and fatty oils. His first published work concerned the action of nitric acid on fatty acids. Lewkowitsch soon left the academic world for a position as a research chemist at the tar distillery Aktiengesellschaft Fur Teerindustrie Erkner in Berlin. In 1887, Lewkowitsch immigrated to England and became Chemist and Technical Manager to the Whitehall Soap Works in Leeds. It was there that Lewkowitsch became the first person to prepare chemically pure glycerin from soap makers' lyes. Lewkowitsch presented his results at the Leeds meeting of the British Pharmaceutical Conference in 1890. Prior to his presentation, glycerin was recovered from the arsenic in soap lye. The key to Lewkowitsch's method was to avoid the use of arsenic in soap, making glycerin recovery much easier.

In 1895 Lewkowitsch became a consulting chemist and technologist in oils and fats in Manchester. That same year he published the first of six editions (1895, 1898, 1904, 1909, 1913, and 1921) of *The Chemical Technology and Analysis of Oils, Fats, and Waxes*. Although Lewkowitsch's initial publication was founded on Rudolf Benedikt's *Analyse der Fette und Wachsarten*, his later editions would be original works. Lewkowitsch book editions expanded to three volumes and were printed in French and German.

Lewkowitsch joined the Society of Chemical Industry in 1889. He contributed articles to the Society's publications and wrote entries for the Encyclopedia Britannica on oils and fats. In 1898, Lewkowitsch moved to London, where he maintained a laboratory on

Priory Road, West Hampstead and offices on Queen Victoria Street in the city of London. Lewkowitsch married Katherine Julia Morris, May 5, 1902. The two had one daughter, Phyllis Regina Elsa Lewkowitsch (Elsa) and a son Jason Farradane. In 1905 Julius was elected vice president of the London Section of the Society of Chemical Industry. Lewkowitsch went on to become chairman in 1908 and foreign secretary of the society in 1911, a position he held until his death in 1913. For his work as a chemist, Lewkowitsch was awarded the Lavoisier Medal in 1909. Lewkowitsch, an accomplished linguist, spoke German, French, Italian, and English. Julius Lewkowitsch died September 15, 1913 after an illness.

Ellsworth C. Warner

Ellsworth C. Warner (1884-1942), an Iowa linseed miller, founded the Midland Company in Minneapolis, Minnesota in 1900. Warner was joined in the venture by his in-law Edgar C. Bisbee, a member of a wealthy Chicago linseed-oil-family. In 1890, Warner married Edgar's sister, Francis Melvina "Mellie" Bisbee. Throughout the first decade of the 20th the Midland Company continued to expand until 1911 when it was reincorporated as the Midland Linseed Products Company. At the time of incorporation Warner's company was capitalized at \$10 million. Midland Linseed products began to falter in 1921 when the Bisbee family members split with Warner over his acrimonious divorce from Mellie Bisbee. The Bisbees departure destabilized Midlands upper management severely enough to precipitate the company's sale to the newly formed Archers-Daniels-Midland Company.

As of the divorce settlement Warner gave over \$1 million to Mellie Bisbee. In 1929, still unsatisfied with the previous settlement, Mellie Bisbee sued her ex-husband over a \$2,200 inheritance that she claimed was seed money for nearly \$5 million worth in oil mill investments. She sought a settlement of over \$100,000. Unfortunately, the outcome of the suit is not recorded in the collection.

Ellsworth Warner and his first wife, Mellie had four sons, Ellsworth Bisbee "Bis" (b.1892), Maurice A (1894-1953) Harold (b.1897) and Wendell E. (b.1902). In 1930, Warner married Roslyn Allen. Warner continued to work in the linseed oil business until his death in 1942.

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The Litchfield Collection on the History Fatty Materials
Scope and Content

The Litchfield Collection on the History of Fatty Materials, 1707-2007 (bulk dates 1970-2000) was donated to Hagley by Carter Litchfield in 2007. The Litchfield Collection documents Litchfield's activities as a chemist, historian, and collector. The collection is arranged into seven series and includes his research with animal fats and fatty materials, collecting activities, research and publication on the history of oil mills around the world; the papers of Julius Lewkowitsch, the first authority on fats and fatty materials; and Ellsworth C. Warner, founder of the Midland Linseed Products Company. The original order of the Litchfield Collection has been left largely intact. The Pictorial Collections Department houses materials related to the Litchfield Collection, PC 2007.227. The Imprints Department houses all of the books, rare books, trade catalogs, and other publications as part of the Carter Litchfield Library.

Series I. Collection Acquisitions (5 linear feet)

This series documents Litchfield's collecting activities including purchase through private collectors and through online auctions sites like eBay. Sub-series include Acquisitions Correspondence, 1966-1992, Current Correspondence, 1988-2007, Miscellaneous Acquisitions Correspondence, 1998-2007, and Book Acquisitions, 1972-1988.

Series II. Fats and Fatty Oil Research (5 linear feet)

This is a series of Litchfield's research material. The majority of the material in this series is contained either in binders or notebooks. Sub-series include Procter & Gamble, 1956-1960, Cetacean Lipids, 1968-1979 (species studied include: Globicephala, Kogia, Tursiops, Phocoenoides dalli, Pseudorca crassid, Kogia, Delphinapterus, Stenella, Inia geoffrensis, Physeter, Hyperoodon, Ziphius, Berardius, Kogia breviceps, and Chondrilla nucula) Sponge Lipids, 1974-1980 (species studied include: Barbados Sponges, Anthosigmella, Xytopsene, Scypha, Microciona, Lissodendoryx, Stelletta, Spongilla Dysidea, Cliona celata, Xestospongia halichondroides, and Isodictya), Hilditch Symposium on Analysis of Natural Fat Triglycerides, 1965, International Society for Fat Research (ISF), 1962-1978, American Oil Chemists Society (AOCS), 1966-1978, and Conferences, 1968-1974. The sub-series of Cetacean Lipids and Sponge Lipids are comprised almost entirely of quantitative data.

Series III. Olearius Editions Historic Oil Mills (23.5 linear feet)

This series documents Litchfield's publication, research, and writing activities during his career as founding editor and publisher of Olearius Editions. The sub-series of American Oil Mills and Foreign Oil Mills are comprised almost entirely of binders containing research material collected by Litchfield. Sub-series include Business Records, 1990-1997, Moravian Oil Mills, 1713-2007, Olive Oil in the Holy Land, 1985-1999, Seiyu Roku, 1972-1981, History of Oleomargarine Tax Stamps, 1960-1993, Conferences, 1980-2004, American Oil Mills, 1948-1959, c1990, and Foreign Oil Mills, 1974-1998.

Series IV. Julius Lewkowitsch Papers (5 linear feet) Litchfield acquired and arranged the Julius Lewkowitsch Papers. Litchfield met Lewkowitsch's daughter, Elsa, in 1970 at an international chemistry conference in London. Carter Litchfield and his wife Carol became friends with Elsa and the three corresponded frequently. In 1981, Elsa made the decision to give her father's papers to Carter as part of his larger collection on the history of fats and fatty materials. Litchfield, in turn, included the Lewkowitsch papers as part of his gift to the Hagley Museum and Library. The series contains Julius Lewkowitsch's research, including his "ideas" notebook and manuscripts for *The Chemical Technology and Analysis of Oils, Fats, and Waxes*. This series also documents, in part, the lives of his wife Katherine and daughter Elsa, including Elsa's correspondence with Carter and Carol Litchfield. Sub-series include Julius Lewkowitsch, 1857-1914, Katherine Lewkowitsch, 1911-1945, Elsa Lewkowitsch, 1923-1987, Lewkowitsch Laboratory, 1888-1973, and Monograph, 1898-1943 (manuscript of the unpublished 7th edition of *The Chemical Technology and Analysis of Oils, Fats, and Waxes*).

Series V. Ellsworth C. Warner Paper (1 linear foot)

This is a collection of papers purchased by Carter Litchfield from Mary Jo Purcell at the Baltimore Antique Paper Show from 1995 through 1998. The series documents Ellsworth Warner's courtship of Mellie Bisbee and their subsequent divorce and includes correspondence between Mellie and her sons. The Warner papers document the sale and incorporation of Midland Linseed Products Company into what became Archer Daniels Midland Company. The series also includes Litchfield's research activities with the Warner Papers. Sub-series include correspondence, 1883-1998, and Research files, 1900-1994.

Series VI. Chevreul Correspondence, 1810-1889, (0.25 linear feet)

The Chevreul series is a set of correspondence written by French chemist Michel Eugène Chevreul purchased by Litchfield.

Series VII. Carol Litchfield, 1991-1998 (0.25 linear feet)

This series contains records of Carol Litchfield's consulting work with Microbial Solutions. Included in the series are account sheets, bills, and travel vouchers for her work.

Research on Sponge Lipids "A" 1974-1980

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Series II. Fats and Fatty Oils Research

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Series IV. Julius Lewkowitsch Papers

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Series VII. Carol Litchfield

Microbial Solutions

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