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TRAITS AND ROLES OF JONAS KAMLET, PIONEERING CHEMISTRY CONSULTANT, AS A GUIDE TO CONTEMPORARY INVENTORS

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As state universities feel economic pinches of reduced support from state legislatures, and as sources of federal funding for supported research projects face additional challenges, other sources of support need to be found. Two sources under consideration are royalties and licensing fees for successful patents. A good example of a successful developer of patents was Jonas Kamlet, Ph.D. (1914–1960), who was an early consultant in chemical and other matters and was the successful co-owner, with his wife Edna, of the Kamlet Laboratories. The roles that he played in his career can, we believe, provide good examples for contemporary researchers in doing applied research and obtaining fees for consulting and related professional activities. We review here some of the pertinent roles in the life of Dr. Jonas Kamlet, which may serve as a guide for contemporary innovators.

Key words: Kamlet; Roles; Consulting; Chemicals; Procurement, Synthesis

INTRODUCTION

There has been significant concern recently over funding at colleges and universities. This may be especially true at state universities where the percentage of state support has steadily diminished or changed in basis of support. As Holbrook and Sanberg note, license and royalty income is one of the revenue sources that supports university research (1), but the extent of the support from these sources has room for growth. In addition,

many positive benefits, intrinsic and financial, have been considered (5).

One possibility for enhancement is to accept the suggestion that patents be considered as part of tenure and promotion guidelines (10). Another possibility is to study the success of others. Our favorite choice is an early consultant, Jonas Kamlet, and we note his efforts to sustain the Kamlet Laboratories in this article. We should recall his wisdom that a patent needs to be promoted or sold to be really successful.

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Jonas Kamlet was trained as a chemist and worked as a clinical chemist in the Israel Zion Hospital in Brooklyn, NY, where he gained considerable experience. He became an early self-supporting consultant in chemistry and developer of patents in his role as head of the Kamlet Laboratories that he and his wife established in 1941. The background of the Laboratories was reviewed in a previous article describing its development in the first 7 years, and it was estimated that the *net* cumulative value in 2011 dollars was about \$750,000 (6). After Kamlet's death, his widow Edna Yadvén Kamlet continued the operation of the Laboratories until her retirement (7).

USF was able to obtain the papers associated with the Kamlet Laboratories through a gift from his widow that supported transport of the papers to Tampa, FL, and a donation to cover the archiving process as described previously (6).

Jonas Kamlet was a prolific inventor, though it is difficult to appreciate how truly inventive he was. Although some 106 patents are listed by SciFinder®, as we have noted elsewhere, the number is misleading because some entries were duplicates appearing as British patents as well as a Canadian and a French patent (8). The total number of US patents seems to be 81, covering a period from March 22, 1938 (when he was about 24) to November 17, 1964 (about 4 years after his tragic death in an airplane disaster).

During the course of his impressive career, Kamlet played many roles, and we believe that examining these roles provides a good example for persons who are concerned with patents and innovative processes. Jonas Kamlet realized that having patents could be a money-making source but that the role of a salesman was a key to success.

In examining his career, it is evident that Kamlet was a man of many talents, but he was also a man of many roles, and in this time of change, we believe his life provides good

lessons, and some of these are reviewed in the present article.

MATERIALS AND METHODS

Material contained in the USF Tampa Campus Special Collections was reviewed through the webpage for the Kamlet Papers (2). Files in individual boxes were requested, reviewed, and pertinent letters were copied and saved as pdf files (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

RESULTS AND DISCUSSION

We have reviewed the background and found examples of activities that seem to fit a series of professional roles.

Salesman

Perhaps first and foremost, Jonas Kamlet had to be a salesman. He needed to convince persons to retain his services until his reputation was sufficiently developed, and he needed to sell his patents, either after the initial declaration when he could transfer the rights and save patenting costs, or later when he could license the patents and recoup the costs.

Example 1. In a letter to the president of the Rexall Drug Company, Kamlet was trying to convince him of his expertise developed over a 20-year period in the development of products and processes for the chemical and related industries. "Our major field has been agricultural chemicals. He noted that he was responsible for getting at least five large companies into the agricultural chemical business" (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Example 2. About a year later, he wrote to the president of The Reynolds Metal Company

to discuss his new process for sodium fluoride and cryolite of very low silica content and described the advantages. He asked for the opportunity to visit with either the president or with a member of his staff. He added that his firm had been engaged over the previous 21 years in products and processes for the chemical and related industries and included an impressive list of collaborations with some 31 firms (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Jonas Kamlet was a man whose several traits and roles led to the success of the Kamlet Laboratories, a largely two-person operation, with others who were retained evidently on an as-needed basis, and whose efforts were coordinated by his wife, Edna. We think he is to be admired for several reasons, but certainly an important one is his role as a *bench chemist*, that is, a chemist who was at home next to a laboratory bench where he was comfortable doing inorganic or organic syntheses, doing physical measurements, or analytical chemistry.

Scientific Literature Expert

Good patent applications and good consulting ideas demand an excellent grasp of the pertinent literature. Jonas Kamlet and his wife, Edna Yadvon Kamlet, were avid readers of *Chemical Abstracts*, which they tended to split up. He covered the chemistry sections, and she, because of her biology major, covered the biological sections. Some examples of his range of expertise follow.

Example 1. Asked to provide information on the production of hydroquinone, he noted difficulties in providing accurate statistics. The number of companies (names given) fell from five in 1949 to two by 1952. Kamlet candidly noted that his information was “scuttlebutt,” that is, gathered from conversations and phone calls. He also provided

the requested data: year, production (pounds), sales (pounds), and value of the sales, all for the 3-year period 1946–1949. He noted that no published data had been available since 1948, but he was relying on information from a chemical broker. The data were for the photographic industry (for “hypo”), and an upper limit of the amount was provided for photographic and technical material.

Unfortunately, he had to note that he was unable achieve “even a crack” in the rubber industry armor of silence, owing to a common reply of “Sorry, restricted information” (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Example 2. Information concerning the use of calcium salicylate as an “extender” was provided to Miles Laboratories personnel. This included nine papers in refereed journals (three of which were at the Elkhart plant), plus seven German patents, two British, and four US patents (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). He also specified (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida) the most recent (1937–1943) sources being three papers and US patent 2,159,214 (issued May 23, 1939).

Patent Purveyor

Kamlet would develop a patent, then work with a company to arrange for payment of fees in return for assignment of the patent to the company and probably some concessions. A prime example was the development of a colorimetric pill for analysis of glucose. When looking for a source of stirring, he needed something to make the mixture effervesce. His wife suggested that he contact Miles Laboratories, developer of Alka-Seltzer, at least according to according to one account (7).

A different version of the collaboration was found and reported, but the key aspect is the collaboration between Jonas Kamlet and Miles Laboratories "house expert on efflorescent," Mr. Maurice Treneer. The product of the collaboration was a pill called *Clinitest* that would react with a sample, and the color developed could be used to estimate the amount of glucose present. It was a rapid test that could be performed in a physician's office to test diabetic patients and had a sales lifetime of about 40 years. It was replaced by another Miles product, *Clinistix* (9).

In fairness, Kamlet was not always successful. There were no patents assigned to DuPont, though the opportunity was provided at least twice. For example, he noted that in a meeting at DuPont, he described "our work on the use of waste newsprint as a low-cost source of rough and digestible cellulose in such ruminant fodder. This work is covered by a patent application, now pending. We are enclosing herewith a copy of this patent application, entitled 'fodder for ruminants,' for your perusal" (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

For whatever reasons, DuPont representatives did not choose to pursue this great idea, and a patent (US 2,715,067) was awarded August 9, 1955, but was not assigned to DuPont or any other firm. The idea, however, was sound and well tested on cattle (8).

Sales Representative

As noted elsewhere, Kamlet was on a consulting trip to the International Paper Company in Glenn Falls, NY, and he suggested that there were a couple of problems that could be solved using the *Clinitest* kit. On a second trip, he brought along a kit and wrote to Dr. Raymond Conklin that he had been unable to find a pharmacy in Glenn Falls that stocked the kit, so he suggested that a half dozen complimentary kits be sent to a Dr. Taylor at International Paper (9).

Synthesizer

Jonas Kamlet was a superior organic chemist as indicated by the creativity and thoroughness of some of his patents.

Example 1. Kamlet devised a synthesis of riboflavin (a.k.a. vitamin B2). It eliminated steps in the contemporary synthesis, and it also obviated the use of the difficult-to-obtain and expensive pentose sugar D-ribose. The scope and details of each step are thoroughly described. The discovery of riboflavin and the identity as vitamin B2 had been reported only 10 years before the submission of his patent (4).

Example 2. Jonas Kamlet was 24 years old when he was awarded his first patent for a synthesis of sulphanilamide. Offering some remarkable cures obtained in its use in the treatment of gonorrhea, this was surely a miracle drug for its time. He reported obtaining the desired product "in an exceptionally pure state and in quantitative yield by submitting benzamide-*p*-sulfonamide to a Hoffman reaction" (3).

Bench Chemist

A representative of American Home Products requested the development of a product similar to "SOILAX." Kamlet (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida) purchased six boxes of the product from six different stores and analyzed the content (98% trisodium phosphate decahydrate) and explained the variability. He developed a 1,000-pound batch procedure for a product of "good appearance and homogeneity" and also a 10-pound procedure. The product (after tumbling for a suitable length of time) was free-flowing with no tendency to cake, was readily soluble in water (hot or cold), did not leave residue, and fluoresced. He sent a pound, composed of 0.085% of the product (Jonas & Edna Kamlet/Kamlet Laboratories Records

1913–1989, Special Collections, University of South Florida), together with a sample of General Dyestuffs sodium salt of fluorescence. Typically, he would save a sample of any material he made in case of further interest.

Kamlet also suggested a material suitable for household fabric fire proofing, that is, ethyl ammonium phosphate (actually a mixture of ethyl ammonium hydroxide and ethyl ammonium phosphate), which could be prepared by dissolving phosphorus pentoxide in 98% [sic] ethanol. After describing the advantages of the substance, he gave examples of its applications and availability. Then, he submitted a 2-pound sample of the concentrate to a Mr. Browne (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Jonas Kamlet had also suggested silverware antitarnishing agents and provided samples of four different preparations in an effort to overcome criticism of the odor associated with previous preparations (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Behind-the-Scenes Man

Example 1. Jonas Kamlet realized that there was a need for publicity for the Clinitest products, and his ideas are outlined in a letter written to Dr. R. L. Conklin of Miles Laboratories (9). “One of the next steps that I believe we ought to take in the introduction of our Clinitest series to the physicians and clinical pathologists of this country, is to publish a paper in one of the journals (e.g., the *Journal of Laboratory and Clinical Medicine* is my choice” (9).

Example 2. Dr. Kamlet noted a War Production Board (WPB) release stating that as of the end of March (1943), the manufacture of Ration K was to be discontinued and that this would free up some of Miles Laboratories’ help and tablet machines to be available for

other work. He proposed that the need for flavoring by the US Armed Forces could be satisfied by preparation of vanilla flavoring in tablet form. What seems pertinent is the statement “The Van Ameringen-Haebler Company, 315 Fourth avenue [NYC] have developed such a tablet and are selling it to the Army... We could make such a tablet with no difficulty at all. I am getting samples of this tablet from Van Ameringen and Haebler and will forward them to you as soon as they arrive” (4).

Example 3. Requests for background information were also made by Dr. Kamlet (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida): “Again we need to call on your good assistance...to gather information about Althouse Chemical Co., Inc., Reading, Pennsylvania. Without disclosing our identity, we would like to know as much as we can about the technical aspects of the company. The dyestuffs they make, what raw materials and intermediates they purchase, and the obvious additional questions of this kind are matters on which you may be able to help us” (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Example 4. A plant superintendent with Empire Chemical Company once made a request to Kamlet as well (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida): “We would like very much to get some sales pamphlets put out by our competitors. You have obtained such pamphlets for us at other times, and we are taking the liberty of asking for some others. We would like copies of the following:

1. Monsanto
 - a. Chemicals and Plastics (27th edition or later)
 - b. Plasticizers and Resins (1940 or later)

- c. Benthall Applications in Synthetic Resins
- d. Tech Bulletin No 0-D-503
- 2. Barrett
 - a. Booklet on phthalic anhydride (2 copies if ethical)."

A quid pro quo arrangement may have been involved, as indicated by the last paragraph (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida): "We have been studying your program for manufacture of phthalic anhydride derivatives. Such a program would certainly give us a boost in getting into the chemical manufacturing business and we would like to see it put across."

Diplomat/Go-Between Person

Example 1. In the matter of silverware anti-tarnishing, Kamlet asked the representatives of American Care Products Corporation if he (Kamlet) should "discuss the matter of a license with a representative of Union Carbide without mentioning the possible interest of American Home in this matter" (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Example 2. Jonas Kamlet had recently learned from an unimpeachable source that the Shell Development Company had developed a superior process for the production of phthalic anhydride. He was writing on behalf of George Gallowhur, president of Gallowhur Chemical Company, whose firm was a major consumer of dimethyl phthalate in the US. Mr. Gallowhur wanted to discuss "an arrangement for the purchase of all or a major part of [Shell's] present and/or production of phthalic anhydride and/or dimethyl phthalate." He asked for an airmail response that would be referred directly to Mr. Gallowhur. Interestingly enough, he signed the letter as being from Miles Laboratories, Inc.

Chemical Research Division (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Noncomplainer

Example 1. The association with Miles Laboratory lasted a number of years and was a profitable association, though just how profitable is open to question. His widow told one of us (D.F.M.) before her death that a certain patient assigned to Miles Laboratories earned the couple \$5 million in 5 years even though they had expected \$17 million (8). However, there is nothing in the Miles Laboratory correspondence that implies unhappiness on the part of Dr. Kamlet.

Example 2. As noted elsewhere, Kamlet was asked to provide answers to 13 questions about each of 36 processes and chemicals in less than 7 days. He did so uncomplainingly. The response by Mr. Paul C. Jones noted that though Kamlet might feel an undue burden was laid on him, prior action by only one or two persons can save, for a much larger group, "an important amount of the only factor in business which is wholly irreplaceable, namely time" (8). The uncomplaining and unselfish response may remind us that at some time we may be responsible for key actions.

WWII Draft Deferee

Though Jonas Kamlet was evidently an able-bodied person, married, and with no children, he was not drafted by the Selective Service Local Board 15 in New York City. He provided good reasons, that all of his work pertained directly to the war effort or to the maintenance of public health (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). He was also on the National Roster of Scientific Personnel from its very inception. He wrote, "I am also the

head of the New York chemical research laboratory of the Miles Laboratories" (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). In a second paragraph, he added, "I am under contract to the Miles Laboratories, Inc., on whose behalf we have developed and are in the process of developing, a number of processes and products directly pertaining to public health, and in some instances, to the War Effort. Among these are the following: aids in medical diagnosis, synthesis of vitamins, derivation of vitamin-rich food concentrates by the microbiological utilization of industrial wastes, syntheses of anti-malarials, manufacture of tablets for the sterilization of contaminated water, and manufacture and assembly of the ingredients of Army ration kits" (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida).

Procurement Agent

As part of his consulting activities, Dr. Kamlet would find sources of materials of interest and obtain samples for use by someone in a partner firm. At one time, the composition of commercial grades of turpentine was of interest to a manager in the B. F. Goodrich Chemical Company (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). The correspondence reveals a very thorough, patient man. He noted that he had spent a good deal of the week corresponding and calling "practically every manufacturer and dealer in the various commercial grades of turpentine." He concluded that none had ever bothered to separate the turpentine into the individual terpenes. But Kamlet had his share of contacts. He mentioned a man in the Hercules Laboratories who thought they had made a comprehensive breakdown into individual terpenes "several years ago." He promised to forward the information when it arrived (Jonas & Edna Kamlet/Kamlet Laboratories Records

1913–1989, Special Collections, University of South Florida).

Personal Roles

An understanding of the personal side of Dr. Kamlet is hard to discern from his letters. He would sign his letters "Sincerely yours," but on occasion he would precede this by "With kindest personal regards, I am," (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). He also had a closer relationship with some clients, as with the closing "With kindest regards to yourself and your family, I am" (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). A personal, philosophical note appeared in a letter concerned with scheduling a meeting with Dr. Paul Jones in his Cleveland office (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). "I trust your recent disposition has passed and that you are now among the quick. I think it was Cicero who said, 'Alexander magnus corpore parvus erat.' Though Alexander was a mighty man, his body was puny indeed. Since our intellect is inextricably housed in a most onerous and imperfect dwelling, I guess we must take these periods of illness with good grace. What cannot be endured must be survived."

A humorous side was also present, though not seen often in the correspondence. In connection with the development of ice cream additives, he wrote, "I will bravely volunteer to personally taste the finished samples of ice-cream product. No sacrifice is too great for SCIENCE."

SUMMARY

Dr. Jonas Kamlet was a unique individual, and few are qualified to play the roles that he did, but he provides an example of dedication, of utilizing the resources available to him, and of recognition of his worth and value.

Dedication to our individual professions and support of creativity and innovation are characteristics that are within our grasps.

Finally, and perhaps most importantly, we can emulate Kamlet's attitude toward failure. At one point, he was asked about times that he had been "scooped," that is, good ideas that for one reason did not come to fruition, despite being good or covered by patents (Jonas & Edna Kamlet/Kamlet Laboratories Records 1913–1989, Special Collections, University of South Florida). He responded with some 23 that he could document with respect to time of concept. (At the time, most of his successes were ahead of him.) He also noted that every research organization had its morgue of failed ideas and concluded, "It is all in the Game. It's the Future that concerns us, not the Past."

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