Issue 5 FALL 2017

History of Pharmacy SIG Newsletter

Pharmacy Chronicles: Past, Present and Future

Welcome Message from the Chair, History of Pharmacy

Welcome to this, the *first* mid-year issue of the History of Pharmacy Special Interest Group (SIG) newsletter: ***Pharmacy Chronicles: Past, Present, and Future*!**

The annual Newsletter has enjoyed tremendous success since its inaugural Spring 2013 issue. This mid-year issue is both a novel idea and more evidence of the vibrant activity going on within the SIG. Thank you to our Editor, Cathy Taglieri and her team for their work as editors, as well as for the peer-reviewers who have all made this possible. I just briefly want to let the membership know that the Executive Officers have been hard at work developing the programming for the 2018 Annual Meeting. In addition, another first for the SIG will come next Spring (2018) when we plan to launch the **first History of Pharmacy SIG Webinar**, so please look for more information on this to follow in coming months. The History of Pharmacy SIG continues onward and forward!

Sincerely,

-Ettie Rosenberg, SIG Chair

ANNOUNCEMENT

Wanted: Pharmacy History Posters, Presentations, and/or Manuscripts

To make pharmacy history work widely available and permanently accessible, AACP members are invited to submit posters, presentations (PowerPoint slides/handout), and manuscripts they have presented/published that include a clear connection to pharmacy history or pharmacy history pedagogy. These posters, presentations and manuscripts can be from any meeting, conference, and/or publication, not just AACP meetings or the AJPE, and can be from anytime.

To submit your work for inclusion as an online resource in the SIG's library, email the abstract and a PDF file of the poster, a PowerPoint or PDF of the presentation, or a PDF of the manuscript to David Baker (dmbaker@wne.edu) by Thursday, March 1, 2018. In the submitting email, note that you grant permission to post the work on the History of Pharmacy SIG AACP Connect web site.

All submissions will be reviewed by members of the History of Pharmacy SIG's Teaching History of Pharmacy Committee, prior to posting in the SIG's web site library. The Committee is considering whether to give recognition for the "Best Poster" and/or the "Best Manuscript" among those submitted. If approved to do so by the SIG's Executive Committee, such recognition would be featured in the SIG's newsletter, "Pharmacy Chronicles: Past, Present, and Future," in the Spring/Summer 2018 edition. We all look forward to your submissions!

INSIDE THIS ISSUE:

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Message from the Editor

Welcome: We had a busy and productive annual meeting in Nashville , TN last summer. It was great to see so many friendly faces and put faces to the names. The 2017 edition marked the first time we included peer reviewed articles in our newsletter. In addition, it is the first year that we have published two editions of the newsletter in one year. Yes, history is alive and well!

We are looking to recruit new writers, reviewers and contributors to the newsletter and we welcome volunteers to help with editing and formatting the newsletter. Please reach out to me or the Chair of the HOP SIG to volunteer.

Looking forward to seeing everyone in Boston this summer!

—Cathy Taglieri, PharmD, MCPHS University, School of Pharmacy

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ANNOUNCEMENT

History of Pharmacy Faculty Opening

Professor and George Urdang Chair in the History of Pharmacy (University of Wisconsin-Madison School of Pharmacy)

Degree and area of specialization:

Applicants for this position should hold a Ph.D. in the history of pharmacy, social and administrative pharmacy or a closely related field and have an established record of independent scholarship and research related to historical aspects of pharmacy and/or pharmaceuticals or a related field of study. Applicants possessing doctorates in other disciplines and exceptional achievement in the field of interest will be considered.

Minimum number of years and type of relevant work experience:

Candidates at the associate or full professor level are required to have demonstrated research, scholarship, and teaching proficiency that meet criteria for tenure and rank at University of Wisconsin-Madison and UW School of Pharmacy.

Candidates at the assistant professor level are expected to demonstrate strong potential for establishing a vigorous, independent research program.

We seek an individual with excellent written and verbal communication skills who will foster Dr. George Urdang's commitment to the humanistic aspects of the pharmacy profession. A focus on modern pharmacy and/or pharmaceuticals is preferred. A background or professional degree in pharmacy is desirable, but not required.

Position Summary:

The George Urdang Chair in the History of Pharmacy, the first such chair in the nation, is named in honor of Dr. George Urdang (1882-1960). Urdang, a renowned pharmacy historian and professor of the History of Pharmacy at the UW School of Pharmacy, was also the first Director of the American Institute of the History of Pharmacy at the School. The Urdang Chair holder will support and advance the academic discipline of the History of Pharmacy at the UW School of Pharmacy and the American Institute of the History of Pharmacy (AIHP). As part of collaboration with AIHP, the Urdang Chair is expected to further the mission of the Institute in a leadership role.

Principal duties:

The candidate selected for this position will be expected to be committed to and conduct effective teaching in professional and graduate programs within the Social and Administrative Sciences Division that serve a diverse student body; assist in expanding the graduate program; continue their independent research program; and be active in university service.

Associate and full professors will hold the Urdang endowed chair. An assistant professor will hold the Urdang endowed chair upon promotion with tenure. The George Urdang Chair in the History of Pharmacy, the first such chair in the nation, is named in honor of Dr. George Urdang (1882-1960). Urdang, a renowned pharmacy historian and professor of the History of Pharmacy at the UW School of Pharmacy, was also the first Director of the American Institute of the History of Pharmacy at the School. The Urdang Chair holder will support and advance the academic discipline of the History of Pharmacy at the UW School of Pharmacy and the American Institute of the History of Pharmacy (AIHP). As part of collaboration with AIHP, the Urdang Chair is expected to further the mission of the Institute in a leadership role. The George Urdang Chair in the History of Pharmacy is a five-year, renewable, appointment and includes a significant source of funding for research support. The renewal decision for the endowed chair is based upon continued scholarly activity and successful collaboration with and contribution to AIHP and its mission.

The position is a 12-month tenure-track position at the assistant/associate/full professor rank.

For complete information and application link, see the position vacancy listing at: https://www.ohr.wisc.edu/weblisting/External/PVLSummaryPrint.aspx?pvl_num=92386 Questions about the position can be directed to: Prof. David Mott, ph. 608-265-9268, email: david.mott@wisc.edu. To ensure consideration, applications must be received by: DECEMBER 20, 2017.

Pharmacists' Expanding Role in Immunizations: Looking back 200 years

By Anusha Sekhar, Nisha Joseph and Catherine Taglieri

Immunizations in the United States have been one of the primary achievements in public health and have led to the eradication and reduction of numerous disease epidemics. More specifically, the profession of pharmacy has experienced significant change since the development of the first vaccinations, allowing pharmacists to take on a more clinical role to become further involved in vaccine delivery. These clinical roles acquired by pharmacists can have a significant impact on the availability, rates, and patient education on immunizations, which in turn can lead to better public health outcomes.

The first discovery of a live vaccine against smallpox was by Edward Jenner in 1798.[1] During this time pharmacists, then referred to as apothecaries, had no role in vaccination delivery and were primarily responsible for compounding and distributing medications to physicians and patients. An apprenticeship, which included observation of experienced professionals, was the only requirement to begin practice. Throughout the 1820s and 1830s, east coast apothecaries became one of the most lucrative business lines in America as they standardized the medications they sold along with surgical supplies, artificial limbs and teeth, essence, and chemicals.[2] Apothecaries continued to dispense drugs and eventually expanded their services by distributing the smallpox vaccine to physicians by the mid 1800s. This was the first documented record of pharmacists' involvement with immunizations and extended into the 1900s.[1] During this time over 40 pharmacies were established as depots by William Park, of the NYC Board of Health, to supply diphtheria antitoxin across the New York City area. Other cities such as Cincinnati and Chicago led similar pharmacy depot programs to expand the availability of vaccines. Between 1953 and 1955, Albert Salk developed an oral attenuated polio vaccine and utilized pharmacists across the nation to advocate his newly developed vaccine through a mass distribution program. The pharmacists' efforts were commended by the Cleveland Press which stated, "without the pharmacists, there could be no program".[3]

In conjunction with this expansion in professional roles, there was a shift in pharmacy education requirements in the late 19th century, which included mandatory examinations and registration to practice. Beginning in 1932, AACP required member colleges to offer a 4-year baccalaureate degree, however individual state board of pharmacies controlled licensure with the last state requiring a degree in 1956.[4] Colleges had originally offered a Graduate in Pharmacy degree with an extra year granting a Pharmaceutical Chemist degree and further studies leading to a Doctor of Pharmacy degree. A Bachelor of Sciences in Pharmacy degree (B.S. Pharm.) was implemented in 1960 as a 5-year professional program.[5] At this time pharmacists were only permitted to dispense medications without the right to counsel patients due to the original Code of Ethics of 1952. The Code was later revised in 1969, expanding to a healthcare practitioner approach with the allowance to counsel patients.[2]

Pharmacists used their expanding yet limited ability to benefit immunization rates throughout the country. In 1975, the Center for Disease Control and Prevention (CDC) and the American Pharmacists Association (APhA) made combined efforts to conduct Immunization Action Month to increase children's immunization rates. Not long after, in the early 1980s, pharmacists began taking an active approach in identifying patients who were eligible for immunizations through ambulatory care medical records. This highlighted the beneficial utilization of pharmacists on immunization rates and public health. Although pharmacists were not allowed to administer vaccines yet, the accessibility of drug stores allowed immunizations to be administered with ease. In 1994, nurses administered over 1 million influenza vaccines among 5,000 community pharmacies nationwide.[3]

The establishment of pharmacists as immunizers began in 1996 when APhA offered its' first Pharmacy Based Immunization Delivery Program. Through the initial participation of 67 pharmacists, around 500 patients were immunized.[1] By 1999, immunization training programs were incorporated into all schools of pharmacy.[3] As a result, the number of pharmacists

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Heo Jun (1539–1615 C.E.) – the Father of Traditional Korean Medicine

By Heesun Kim and David M. Baker

Introduction:

Heo Jun is often referred to as the Father of traditional Korean medicine since he was the first to establish standards for its practice. As such, Jun is best known for the medical texts he wrote, in particular the encyclopedic work entitled: Dongui Bogam. Over approximately thirty years during the mid-Joseon time period (16-17th century B.C.E.), Jun performed medical research and wrote his works while serving as a medical officer and court physician to the royal court of Korea.[1]

Family Background:

Heo Jun was born to a military officer, Heo Roan, and a mother of noble birth. Though born into a respected family, his mother's nobility was not recognized by the Joseon Dynasty.[2] It has been insinuated that she was a noble's illegitimate child.[3] Jun's father was also of noble birth; however, he is relatively unknown, except as Jun's father, since he lacked any outstanding accomplishments.[3] Even with noble parentage, Jun was also illegitimate, his parents not being married to each other. Because of these circumstances, Jun was considered middle class.[4]

Yet, due to his noble parentage, Heo Jun was taught to read and write, an uncommon occurrence among the middle class during this era. He showed an aptitude for religious scriptures (Buddhist writing) and history.[2,4] Similarly, Jun's two half-brothers, who each had different mothers, were also similarly educated. Interestingly, all three would end up working for the king's court, albeit in different occupations.[4] As regards Jun's own family, the assumption is that he neither married nor had children.

Medical Background:

It may be myth, but the story goes that Heo Jun sought a famous local physician's (Yoo Ui Tae's) help, for his ill mother, and this sparked his interest in medicine. Through this interaction, Tae took on Jun as a student, and began to train him. Before his training was done, however, Jun made a name for himself locally, by reviving a girl who had hung herself. Due to this, he was given the opportunity to treat a high ranking gentry's wife, who had suffered a stroke. Out of many physicians who saw her, Jun was the only one able to treat her paralysis. As a reward, her husband wrote a letter of introduction for Jun to join the royal court. It was this letter that helped Jun bypass the rigorous testing normally required to practice medicine in the royal court.[5]

Unfortunately, this led to a fall out with his teacher, who saw this circumvention of the system as an ethical lapse in judgement. When Jun arrived at Hanyang, the capital of Joseon, he decided to take the medical examination anyway. However, instead of taking the test, he actually chose to save a critically ill patient. Despite missing his testing, Jun gained in public popularity and respect from Tae. Not long after this ordeal, Tae became ill with stomach cancer and committed suicide. As a demonstration of his respect for Jun and devotion to Jun's education, Tae left his body to Jun for study and dissection. When the medical exam was again offered, Jun would not only pass it, but gain notoriety for being first amongst his fellow test-takers.[5]

It is unknown why Jun became a medical officer at the court, since a medical officer was viewed as lower in status than even a person without noble title.[2,3] Regardless, Jun started his first medical palace job in 1571, and continued in that role relatively unnoticed until 1590. During this initial period, Jun's medical knowledge expanded greatly, as did his reputation as a medical practitioner; however, his title did not. This would change in 1590, when Jun "cured" the prince's smallpox, gaining him title.[2,4] However, Jun had not wasted the years before he became the court favorite, since he worked under the court's main medical officer. As such, he had provided care to the King and worked at correcting mistakes in prevalent medical texts of the time.[3]

Jun became the King's favorite when he fled with the King into safety, during the first Japanese invasion beginning in 1592. From 1592 to 1608, he would serve as King Seon Jo's primary medical officer. In 1596, Jun would earn further title, equivalent to a lord - the highest he could achieve based on his birthright - when he cured the prince's

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Cigarettes for Asthma: The Life Cycle of Cigarette Inhalers

By Michael Hegener

It has been known by the Egyptians since 1550 BC that breathing difficulties could be relieved by burning plants such as henbane and inhaling the smoke.[1] Henbane, also known as *Hyoscyamus niger*, is a potent muscarinic receptor antagonist. The Egyptians may have been ahead of their time, as there are several inhaled anticholinergic drugs on the market today, such as ipratropium and tiotropium, indicated for maintenance treatment of bronchospasm.[2]

During the late 18th century, the practice of inhaling medicinal vapors gained popularity in Europe and inhalers were mass-produced. These earthenware vessels were designed so that air would be drawn through warm or boiling water infused with medicinal substances prior to the vapors being inhaled through either a glass tube protruding from a cork or a ceramic mouthpiece at the top.[3] Examples of infusions for inhalation included opium for cough, benzoin or creosote for catarrh (excess of thick mucus in the airways), and iodine for bronchitis.[4,5]

The impetus that ultimately lead to the Western World's widespread use of inhaling smoke for medicinal purposes, however, was in 1802 when Dr. John Sims, an English physician, was provided with an asthma-relieving remedy that was being widely used in India. General William Gent, an asthmatic posted in Madras, India benefitted from inhaling the substance's smoke and brought some back to England for Dr. Sims to examine. Gent reported to Dr. Sims that it was prepared from the roots of thorn apple. Thorn apple is a member of the Solanaceae family and also known as *Datura ferox*. Once the imported stock was depleted, those who benefitted from its use were anxious to find a readily available alternative. Dr. Sims, also being a proficient botanist, identified a plant in local abundance that was also a member of the Solanaceae family -- *Datura stramonium*.[6] *Datura stramonium*, also known as jimsonweed, contains the anticholinergic alkaloid atropine.[2] Once word spread that paroxysms of asthma could be relieved by inhaling stramonium's smoke, the practice was eventually adopted by the medical community in England.[1]

The widespread adoption of smoking stramonium for asthma was largely based upon physician testimony, with numerous case reports published in the medical literature at the time.[7-10] A leading English physician in the treatment of asthma, Dr. Henry Salter, summarized his thoughts on smoking stramonium in his 1864 text *On asthma: its pathology and treatment*. He reported "strammonium smoking is, to some patients, an infallible cure, while others might just as well smoke so much sawdust, and not only receive no benefit, but experience no result of any kind".[11] (It must be remembered that during this time period most any impairment in breathing function was classified as asthma although it may have had a different pathology such as congestive heart failure.[12]) Salter concluded that the conflicting results were likely attributed to sudden changes of the disease and to the preparation and drying of the drug. To improve the likelihood of being efficacious he recommended growing and preparing stramonium instead of purchasing it out of a shop (upon his inspection shop bought stramonium lacked "fresh greenness") and to smoke it at the first sign of an asthma attack (noting that it has little power over established attacks). Speaking to stramonium's onset of action and duration, he stated "I think it does more in the way of prevention than cure" and "the stramonium seems to leave for some hours a state of nervous system in which the asthma is not likely to come on; and since the attack is almost always at night, use at bedtime conducts and guards the patient through the critical time". He summarized his report on stramonium by stating that it is not dangerous unless egregiously overdosed and although not always effective, due to some experiencing great value from it, to always give it a trial.[11]

Although inhaling medicinal vapors liberated from earthenware inhalers or inhaling the smoke generated from directly burning the substances on a dish were options, what if someone experienced an asthma attack while away from home? The cigarette dosage form was an attractive alternative, as it was portable and easy to use, and

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LOOKING BACK AT PHARMACY AND THE KEFAUVER HEARINGS

By Greg Higby

It is well known that Congress passed the Kefauver-Harris amendment to the Food, Drug, and Cosmetic Act in response to the Thalidomide tragedy of the early 1960s. Some background on Kefauver and his hearings into pharmaceutical price fixing provides context and inspires students to consider parallels with today's concerns about the cost of medicines.

In the 1950s, C. Estes Kefauver, was one of America's best-known politicians. As a senator from Tennessee, Kefauver favored civil rights legislation and championed the causes of the "little man." He made his name investigating organized crime during some of the earliest televised hearings. In 1956 he was a leading candidate in the pursuit of the democratic nomination for president. And while he failed in that effort, he succeeded in gaining the V.P. spot on the ticket with Adlai Stevenson. And after suffering defeat in 1956 to the Eisenhower-Nixon Republican ticket, he turned to investigating American big business, first going after the steel and auto industries. In 1959, Kefauver announced that his attention would be turning to the pharmaceutical industry. As is often the case in the history of drug regulation, a tragedy – this time the tragic side effects of Thalidomide – resulted in new legislation in 1962.

It is important to remember the state of pharmacy practice in 1959. The prescription business had grown tremendously during the 1950s. Before then drug companies were not giants of commerce. Rather than selling blockbuster medicines, most of them had made their reputations selling pure chemicals or standardized herbal preparations. Companies like Squibb, Lilly, and Parke Davis had built close relations with pharmacy over the decades and had earned the trust of community pharmacists, who made up nearly 90% of practitioners. A post-War boom in new drug development, spurred on by antibiotic research, had made the prescription department a significant part of the average drugstore's cash flow for the first time. By 1960, the prescription department provided about 50% of an average store's business, with the other half coming from out-front sales of traditional goods: candy, magazines, cosmetics, greeting cards, and tobacco. The actual practice, however, was simple. Pharmacists filled prescriptions. Period. Clinical pharmacy in general practice was years away. A few months before Senator Kefauver opened up his hearings, pharmacists were upset to learn that the American Medical Association wanted doctors to ask for the name of drugs to appear on prescription labels. (At that time, prescription labels did not commonly contain the name of the medicine inside. Patients were expected to trust their doctors completely.) Pharmacy leaders opposed the idea, largely because pharmacists would be forced to talk with customers about their medicines. That was the doctor's job and expressly forbidden by APhA's Code of Ethics.

Starting in late 1959 and throughout 1960, Senator Kefauver and his committee went after the drug industry on the issue of pricing. Kefauver was convinced that the pharmaceutical industry was fixing prices on certain drugs, especially antibiotics. The executives of the major companies argued that just because the major broad-spectrum antibiotics like the tetracyclines and chloramphenicol all cost exactly the same amount as each other and had for a decade, it did not mean there was any price fixing. Kefauver did not buy their arguments.

In sharp contrast with what might happen today, all elements of pharmacy lined up against Kefauver: The companies, of course, opposed his inquiries. National pharmacy organizations saw Kefauver as threatening to them as well, even though he pledged not to investigate practitioners. Community pharmacists, placed on the front lines defending what they identified as their industry to customers, opposed Kefauver. And the journals … well, they set aside objectivity and went after "Keef." In the words of one headline writer, "Kefauver Smear Campaign Begins."

As Dan Rennick of American Druggist remarked on the Kefauver hearings, "no single event has created so

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Pharmacists' Expanding Role in Immunizations…

and pharmacy student immunizers increased to 15,000 by 2004.[2] These strides were followed by the implementation of the Doctor of Pharmacy (or PharmD) degree in 2000 as the sole degree to practice accredited by ACPE.[6] Today, pharmacists are now able to serve as educators, facilitators, and administrators of various vaccines, such as influenza, pneumonia, and herpes zoster in all 50 states.[7] These accomplishments were commended by Assistant Surgeon General Anne Schuchat, MD of the CDC, who wrote a letter to all pharmacists recognizing their important role in reducing vaccine-preventable illness through improved public awareness and access to vaccines.[8]

The evolution of the profession of pharmacy has had a substantial impact on the delivery and availability of immunizations. From apothecaries, to vaccine distributers, to now clinically advanced professionals with key roles in immunization administration and education, pharmacists have transformed the profession to have a greater impact on public health. These advancements leave hope that there is still room for exponential growth in the profession within the next few decades.

—Anusha Sekhar, PharmD., Nisha Joseph, PharmD., 2017 Graduates of MCPHS and Catherine Taglieri, PharmD., Associate Professor, MCPHS University, School of Pharmacy, Boston

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chronic illness (unspecified).[2] Unfortunately, Jun met opposition from the King's counsels in 1606, when the King wanted to award him the highest possible title in Joseon, after his treatment of the King's illness.[2]

Because of the counsels' dislike of Jun, when King Jo died in 1608, Jun was exiled from the court. It was the court's determination that the King died due to intentional acts committed by Jun. Fortunately for him, Prince Kwang Hae, whose life Jun had also saved, defended Jun, arguing that King Jo's death was not due to an intentional act, but instead was due to a lack of skill. In modern day parlance, Prince Hae argued that Jun had not committed an intentional act, like battery; but instead, had simply committed an unintentional error, i.e., negligence. In 1609 Jun's banishment was lifted by the Prince. Jun would spend his remaining years, until his death in 1615, practicing medicine amongst the poeple.[3, 4]

Research and Written Works

Jun wrote eight different textbook series, which are divided into four broad categories. The first textbook written by Jun was in a category by itself and concerned current medical practices. This was used for medical entrance exams and surpassed other texts previously used.[2] The second category of books were devoted to the classification and treatment of infectious diseases, like scarlet fever.[2] The third category of books were Korean translations of Chinese medical books, done to allow common people the ability to read and practice this medicine. Topics in these books included: treatment of common childhood illnesses, treatment of smallpox, and first aid for common injuries.[2] The final category was the encyclopedic work regarding Korean medical practice, entitled Dongui Bogam.[2]

The Dongui Bogam was the culmination of all Jun's work, consisting of twenty-five volumes. The volumes contained both a table of con

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tents and an extensive appendix, unusual for that time. In addition, the volumes provided all of the details regarding what is today known as traditional Korean medicine. The twenty-five volumes were divided into five medical categories (with the number of volumes involved for each), as follows: internal diseases (six), external diseases (four), mixed illnesses (eleven), water-based medication (three), and acupuncture (one).[5]

The Dongui Bogam was further broken down into topic areas within each category. The internal disease category covered: body shape, chi, spirit, dreams, sweat, phlegm, internal organs (specifically the gall bladder, stomach, small and large intestines, the paunch, bladder, and bowels), pimples, parasites, feces, and urine. External diseases involved the: head, teeth, upper cavities, limbs, skin, bone, and hair. The mixed illnesses category was broken into diagnostic topics, such as classifying illnesses caused by wind, cold, hot, dehydration, fire, fatigue, indigestion, vomiting, cough, inflammation, ascites, jaundice, seasonal, and fate. This category also included open wounds, as well as separate sub-topics regarding gynecology and children. The water-based medication category covered: where and how to find herbs, how to compound formulations, and how to take or administer the medications. The acupuncture category included: needle choice for different disorders, and the proper anatomical locations for their administration.[5]

The Dongui Bogam is believed to be the best Eastern medicine work written during the Joseon era (1392 C.E. – 1897 C.E.).[1] Jun began writing it with other medical officers in 1596, following the King's order. The writing paused during the second Japanese invasion (in 1597 C.E.), after which Jun finished the encyclopedic work by himself by 1610. The work's title was derived from: "Dong Ye," which referred to the medical traditions of eastern China, and "Bo Gam" which literally translated means "valuable mirror." Taken together, the full title means: "Mirror of the Eastern Medicine." This was a unique aspect of this work – it was more than just Korean medical practice – it included Chinese medical practice, too. Another unique aspect was that Jun incorporated three major principles throughout: (1) the first priority should be to extend life expectancy by preventing versus treating disease; (2) of the many different ways to treat, only the main points, not all of the details, should be provided; and (3) medicinal herbs should be locally obtainable and formulations should be written using common language, so all could make and use them.[5]

Legacy:

Even though Heo Jun existed over 500 years ago, his research and written works still form the basis for traditional Korean medical practice today. In fact, on July 9th, 2009, the United Nations Educational, Scientific and Cultural Organization made Dongui Bogam an official artifact in the Memory of the World Programme.[6] It has become the premiere medical text representative of the Joseon era throughout the Eastern cultures, because of its many unique features, such as: the discussions of disease prevention versus treatment; its organized and concise summary of concurrent references, and its comprehensive appendix.[6] Interestingly, after the 18th century, Dongui Bogam became available and was utilized in both China and Japan.[6] One of the reasons for its widespread international adoption: it was the first medical text to correct the myths and/or errors found in traditional Chinese medical practice during the Joseon period. Another reason was that Heo Jun advocated for, unlike most, the use of the smallest quantity of a herb necessary to exert the most effect.[2,6]

—Heesun Kim, PharmD Candidate, 2019 and David Baker, B.S., M.B.A., J.D., Associate Professor, Western New England University, College of Pharmacy.

Footnotes:

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Cigarettes for Asthma …

by the turn of the 20th century its use was gaining popularity and acceptance.[5]

Although commonly referred to as cigarettes, manufacturers were quick to point out that their products did not contain tobacco or other addictive substances like opiates. The instructions for Page's Inhalers were to "Exhaust the lungs of air, then fill the mouth with smoke and take a deep breath, drawing the smoke down into the lungs. Hold a few seconds, then exhale, through mouth and nostrils". The table below includes a sampling of proprietary products available in the early to mid-1900's, along with their labeled active ingredients. Many of these products were also available as powders. Users of Kinsman's Asthmatic Powder were instructed to "Place a teaspoonful of the powder on a plate or metallic surface and set fire to the top. Inhale the smoke deeply into the bronchial tubes. Use the powder as soon as you feel an attack coming on, but not oftener than once in three or four hours."

Smoking medicinal cigarettes started to fall out of favor in the 1930's. It was during this time that the pathophysiology of asthma was being recognized as an allergic inflammatory response and not simply a "nervous" or spasmodic bronchoconstriction. By the 1940's allergists were advising their patients not to inhale or smoke substances as it would exacerbate their asthma.[1] During this same time period, the use of alternative treatments which offered greater efficacy was gaining momentum. These treatments included injected or vaporized epinephrine, theophylline, and oral corticosteroids.[13] The largest advancement in asthma treatment was in 1956 when the first pressurized metered-dose inhalers (Medihaler-EPI and Medihaler-Iso) were marketed by Riker Laboratories.[3]

Despite the advent of commercial metered-dose inhalers, medicinal cigarettes were still widely available as over the counter products. Supporting their efficacy, a small, crossover study from 1980 compared the physiological effects of smoking Potter's asthma cigarettes verses regular tobacco cigarettes. Users of the medicinal cigarettes had a small, but statistically significant improvement in pulmonary function and experienced an increased incidence of anticholinergic effects such as reduced heart rate and reduced salivary flow.[14]

The definitive end for medicinal cigarettes was in 1985, when the Food and Drug Administration issued a final rule as part of its OTC review and monograph process, which deemed all non-prescription products containing belladonna alkaloids (including stramonium) misbranded due to lack of sufficient safety and efficacy data. It was during this time that any remaining products were removed from the market in the United States.[15]

Product	Active Ingredients Listed on Packaging
Dr. R Schiffmann's Asthmador Cigarettes	Stramonium, Belladonna
Blosser's Cigarettes	Stramonium, Cubeb, Yerba Santa, Eucalyptus
Page's Inhalers	Stramonium leaves, Chestnut leaves, Tea leaves, Gum Benzoin, Kola nuts
Kinsman's Asthmatic Cigarettes	Stramonium, Lobelia Herb, Ephedra, Skunk Cabbage, Grindelia, Cascarilla

Although medicinal cigarettes are no longer available, they are not forgotten. On the Smithsonian National Museum of American History's website there is a page detailing Dr. R. Schiffmann's Asthmador Cigarettes. Numerous visitors have left comments reminiscing about their personal use of Asthmador and its effectiveness.[16]

— Michael Hegener, PharmD, BCACP, Associate Professor of Pharmacy, University of Cincinnati James L. Winkle College of Pharmacy

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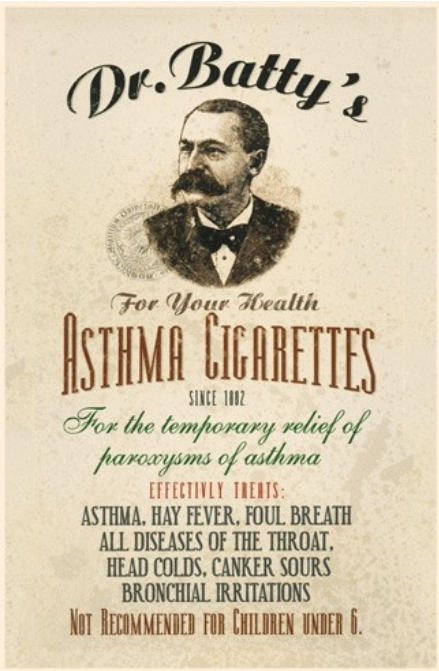

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LOOKING BACK AT PHARMACY AND THE KEFAUVER HEARINGS

much distress among pharmacists." He collated the opinions of his fellow editors who were all in complete agreement.[2]

Wally Werble (Weekly Pharmacy Reports "The Green Sheet"): "The most damage that Kefauver can cause is to create a hostile atmosphere and public opinion for the pharmaceutical industry, drug wholesalers, and pharmacists."

Madeline Oxford Holland (American Professional Pharmacist): "The Kefauver hearings are a serious threat to all of Pharmacy."

Robert Swain (Drug Trade News): "The public may be expected to manifest a thumbs-down attitude for some time, as it munches upon the few juicy morsels tossed its way."

Robert Abrams (Voice of the Pharmacist): "[T]hese hearings may serve as a springboard toward the hastening of some form of socialization of the health professions."

Louis Kazin (Drug Topics): "Retail pharmacists should be prepared to answer the questions on prescription pricing that must be expected to crop up in ever greater numbers as the committee hearings progress."

With these opinions expressed at the beginning of Kefauver's hearings, it is not surprising to learn that objectivity did not reign during the next several months. Following the lead of Dr. Austin Smith, head of the Pharmaceutical Manufacturers Association (PMA), the pharmaceutical press shifted towards a broad-based public relations campaign that emphasized prescriptions as "America's biggest healthcare bargain." The journals were full of articles and excerpted editorials critical of Kefauver and his "tactics" used against representatives of the drug companies. The editors of pharmacy journals even broke rank with their newspaper colleagues, accusing

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them of supporting Kefauver in order to "sell papers."

As the hearings progressed in 1960 with Kefauver probing the pricing of corticosteroids and tranquilizers, pharmacy journals turned to harsher stories: The Kefauver hearings were going to dissuade young people from entering pharmacy, for example. The frightening specter of "Socialized Medicine" putting pharmacy practice under direct government control was brought out periodically whenever opposition to Kefauver seemed to cool.

What was Kefauver's agenda? Was he hoping to ride this investigation into the White House, as some pharmacy editors maintained? Perhaps. He was an ambitious politician. But he also knew that his time had probably come and gone. More likely he saw reform of drug pricing as his legacy as a politician. He had found so-called "administered pricing" in other industries and was convinced that the pharmaceutical industry was guilty of the practice. Moreover, the arrogance that Austin Smith and some company executives exhibited in the early rounds of the hearings spurred him forward.

To the PMA Kefauver's hearings threatened to inspire laws that would impose some sort of price controls on drugs, especially lucrative antibiotics. Even more importantly, Kefauver's hearings brought public attention to the subject of generic prescribing and its possible cost savings. Outside of hospitals, almost all medicines were prescribed by trade name. Companies spent millions of dollars to make Miltown and Diuril household names. Anti-substitution laws kept brand name medicines large sellers long after patent rights expired. And finally, Kefauver's staff revealed another strange anomaly – brand name medicines manufactured by US companies were being sold wholesale in Europe and Canada at much lower prices than in the USA. The testifying pharmaceutical executives did not explain this oddity other than claiming that it was a result of the strong US dollar.

Based on the hearings, Kefauver proposed corrective legislation in 1961 that clarified the length and nature of pharmaceutical patents, called for uniform generic names for drugs, and some regulation of drug advertising. Most significantly, it gave the Food and Drug Administration the authority to pass on drug efficacy as well as safety. The bill failed to receive sufficient support for a vote on the Senate floor. The public relations barrage by the PMA and supported by the pharmacy establishment may have contributed to its demise. It would, however, rise again.

Soon after the bill's legislative defeat, the popular press filled their pages with stories and photographs of the victims of the Thalidomide disaster. This sedative, marketed in Europe to treat morning sickness, led to about 10,000 cases of phocomelia. Richardson-Merrill attempted to get the drug into the US market in late 1960 and was stopped repeatedly by Frances Kelsey at the US Food and Drug Administration. Few stories have captivated the popular press as the famed "Thalidomide babies." As was the case in the 1930s when the Elixir of Sulfanilimide disaster spurred passage of the Food Drug and Cosmetic Act, this new disaster resurrected Kefauver's old bill, which was rewritten to add an efficacy requirement for new drugs. President Kennedy signed the bill on 10 October 1962.[5]

—Gregory Higby, Executive Director, American Institute of the History of Pharmacy.

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