THE AMERICAN SOCIETY OF PHARMACOGNOSY

THE ASP NEWSLETTER VOLUME 44 ISSUE 4

2009 - The Golden Anniversary Year of the ASP!

by Dr. Roy Okuda

Where were you in July, 1959? At least two current ASP Members, Drs. Norman Farnsworth and David Carew, were present at a meeting at the University of Illinois, Chicago, Illinois, in which the American Society of Pharmacognosy was incorporated as a professional society. Thus began the long journey from a small group of a few dozen to the present-day ASP.

The year 2009 is time to celebrate our important milestone and an excellent chance to both recognize our history, as well as look forward to the future of the ASP. For the past several years, a large group of dedicated members have contributed in many ways to help us mark our special anniversary. The project which involves the largest number of people, more than 130, is the ASP history book, which will be published in Spring 2009. Dr. Gordon Cragg, in a heroic effort, has compiled and edited articles contributed by over 130 colleagues worldwide. The entire history of the ASP, from inception to present, is described. Other articles describe natural products

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2009 ASP Awards Deadline December 15, 2008

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Heber W. Youngken, Sr. (1885-1963)

by Kimberly D. Bean

The study of botany unfolds many of Nature's secrets, enhances one's appreciation of Nature's beauty, develops one's powers of observation, and forms a sound foundation for the understanding of many problems in pharmacy, chemistry, agriculture, industry, and the biological sciences.

H. W. Youngken, Pharmaceutical Botany, 1st-7th Ed, 1914-1941.

Heber Wilkinson Youngken, a founding member of the ASP, was known as the "father of American pharmacognosy." Although pharmacognosy, the scientific exploration of natural products for the benefit of humanity, existed before Dr. Youngken, the science was in its infancy in the United States when Dr. Youngken rose to the ranks of Professor at the Philadelphia College of Pharmacy, the first school of pharmacy in America. During his long career, Dr. Youngken reigned as the foremost expert in the field, rivaled by no man before him, and matched only by the next Dr. Youngken generation and the Ph.D. students he would mentor.

Education

Dr. Youngken was born in Richland Township, Bucks County, Pennsylvania, on October 31, 1885, to a family of florists and nurserymen. Dr. Youngken spent his early days on a farm in Quakertown, Pennsylvania, where he assisted his father and grandfather in the florist and nursery trades while attending public school.[1]

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Editor's Corner

In this issue of the Newsletter, we begin a concerted effort to prepare for the 50th anniversary celebration of the American Society of Pharmacognosy. Dr. Roy Okuda, who has fearlessly been spearheading this celebration for years now, has written our lead article that describes many of the activities and commemorations for this historic time in the life of ASP. His article provides many details regarding the upcoming Annual Meeting in Honolulu, Hawaii.

Dr. Gordon Cragg has written a short article about the ASP history book that he is currently editing.

Dr. Okuda is urging everyone to look into travel arrangements early. Reservations at the conference hotel will be open to members in January, and I hope there will be a strong showing of members at this very special Annual Meeting.

In this issue, we continue to look back at the history of our Society. Our second lead article was written by University of Illinois at Chicago (UIC) doctoral student, Kim Bean, about one of the founding members of the ASP, Professor Heber Youngken, Sr. This article provides a comprehensive review of the professional achievements of a man known as the "father of American pharmacognosy."

Our recurring article, "From the Archives," returns in this issue to look at the founding of the ASP in 1959 at UIC. A photo of the founding members, along with their names, appears in this column. Professor Norman Farnsworth also reminisces about the seminal events in a Chicago bar that led to the founding of the ASP.

We also highlight the recent achievement of ASP Fellow, Dr. Susan Horwitz, who was awarded the American Cancer Society's Medal of Honor, in part for her studies on the mechanism of action of Taxol.

New member, Dr. Jim Sullivan at Gaia Herbs, tells us about his interest in quality control of herbs, and archiving botanical species. In "Behind the Scenes," Dr. Mahmoud ElSohly talks about his long career studying the phytochemistry of *Cannibis*, and some of the new compounds he recently described from high-potency varieties. The ElSohly lab's greatest extravagance? Their indoor marijuana grow room!

Correction

In our previous issue, the ACPE was misidentified. The correct organization is the American Council on Pharmaceutical Education. In the article "ACPE Curriculum Guide Available" by Dr. Robert Krueger, the last sentence should read, "Dr. Krueger would like to acknowledge the support of Ferris State University in granting his sabbatical and the invaluable assistance of the leadership and staff of the Council for Responsible Nutrition in preparing the Guide." The *Newsletter* apologizes for any confusion.

Employment Service

The Society offers a placement service to aid our members in seeking positions or employees. This service is available only to ASP members and is free to both the applicant and the employer. For more information see the services website.

www.phcog.org/employment.html

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programs at many institutions throughout the world. The "story behind the story" of the discovery and development of many of the most significant natural products in the past half century is given, often by the discovers themselves. The ASP history book will be a celebration of the Society, its members, and their many accomplishments.

A half century later, the ASP:

- has over 1,200 members from over 70 countries.
- publishes the *Journal of Natural Products* jointly with American Chemical Society (ACS). The *Journal of Natural Products* continues to have one of the highest impact factors among the ACS family of journals.
- hosts annual meetings that typically attract 400-500 attendees worldwide.
- maintains the ASP Foundation, which annually provides major amounts of research and travel support, primarily to younger members.
- annually awards the Norman R. Farnsworth Research Achievement Award, the Varro E. Tyler Prize, and the Matt Suffness Young Investigator Award.
- recognizes significant members as Honorary Members and as Fellows of the ASP.

Is Your Mailing Address Current?

In early November, postcards announcing the 2009 50th Anniversary Meeting were sent to all 1,237 ASP members on file in the ASP Membership Directory. If you did not receive a postcard, it is possible that your address is out of date or incorrect. Please verify your information as soon as possible. In 2009, the ASP history book will be sent by post to these mailing addresses, so it is very important that your address be correct!

An ongoing project is the ASP Photo Archive. Dr. John Beutler is collecting and organizing photos from past ASP meetings, and of ASP members in "action." The photos will become part of the permanent collection for the Society and may be used in ASP meetings, the *ASP Newsletter*, or other Society-related activities. If you have any photos to contribute, send the photo files or scans to Dr. Beutler by email. He can also accept photo prints, which he will scan and return to you. He can be reached at: beutlerj@mail.nih.gov.

In 2009, the ASP also plans to complete an agreement with the Lloyd Library and Museum to house and organize the official ASP Archives. All Society records will be housed in one location and available for relevant research. This will also mark a formal re-establishment of our relationship with the Lloyd Library.

The 50th Anniversary Meeting of the ASP will be the event which celebrates our Society's Golden Anniversary. We have chosen a special place for our most special meeting, Honolulu, Hawaii. Our meeting venue will be the spectacular Sheraton Waikiki Hotel, which is in the heart of Waikiki Beach. The scientific program will include 10 world class speakers who will cover the broad spectrum of natural products/pharmacognosy research.

Dr. K.H. Lee of the University of North Carolina, Chapel Hill, North Carolina, will present the Norman R. Farnsworth Research Achievement Award address. Recipients of the Varro E. Tyler Prize and Matt Suffness Young Investigators Award will also present talks. Many short oral talks and three poster sessions will allow for a large number of contributed papers. The social program will include an opening reception, an outdoor luau with Polynesian entertainment, and the closing banquet, all to be held in a truly unique environment! One very special feature of the meeting will be a program on the history of the ASP, which will occur at 5:00 p.m. on Saturday, June 27, 2009. Plan your travel accordingly!

We have arranged a hotel accommodations block with the Sheraton Waikiki, with excellent prices and concessions unusual for a meeting of our size. Information on hotel reservations was recently sent to all ASP members. Additional details may be found on the 2009 ASP Meeting website. Please note that in order to get our special rates and features, you must make your reservations via the special website for the 2009 ASP Meeting or via the phone number provided. We have also striven to keep the registration as moderate as possible. The only key expense we have no control over is the airfare, but hopefully with the lower price of oil, these will start to come down soon. We also hope that because of the proximity to Pacific Rim countries, colleagues from Asia and other points in the region will join us, so our meeting will truly be an international event.

Please check the 2009 ASP Meeting website for the latest updates:

http://www.phcog.org/AnnualMtg/Honolulu.html

The Spring *ASP Newsletter* will contain additional information on the meeting, including local attractions and activities. In the meantime, if you have questions, contact Drs. Roy Okuda (okuda@sjsu.edu) or John Cardellina (jhcardellina@aol.com).

We hope to see you in Waikiki next summer!

1959 2009

The 50th Anniversary Meeting of the American Society of Pharmacognosy

June 27 - July 1, 2009 ❖ Honolulu, HI

Fifty Years of Natural Products and Beyond: Celebrating the Golden Anniversary of the ASP

Confirmed Speakers:

Justin DuBois (Stanford)
Nina Etkin (Univ. Hawaii)
Franz-Josef Marner (Cologne)
Bradley Moore (UCSD / Scripps)
Tomas Hudlicky (Brock Univ.)
Valerie Paul (Smithsonian)
P.Y. Qian (Hong Kong Univ. Sci & Tech)
Daisuke Uemura (Keio Univ.)
K.H Lee. (Univ. N. Carolina) - ASP Farnsworth Awardee
Tyler Award and Suffness Young Investigators to be announced

Check the ASP website for updates www.phcog.org

Photo Credits: (1) Hawaii Tourism Authority/Joe Solem, (2-3) Hawaii Tourism Authority/Tor Johnson, (4) Hawaii Tourism Japan

Heber W. Youngken, Sr.

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In 1901, he apprenticed at the drug store of Howard R. Moyer, and after completing two years of practical experience, entered the Medico-Chirurgical College of Pharmacy. In 1905, he earned the Graduate of Pharmacy, Ph.G. degree, and passed examinations to become a registered pharmacist in Pennsylvania the same year.

He continued to study classical subjects under private tutors and entered Bucknell University in 1906, taking courses in Greek, Latin, mathematics, and biology, leading to an A.B. degree, *cum laude*, in 1909. That same year he entered the medical course at the Medico-Chirurgical College where he worked as a Professor's Assistant in biology and botany while completing two more years of education. In 1912, he accepted a position as Assistant Professor of Botany and Pharmacognosy and Director of the Botanical Laboratory in the Department of Pharmacy and Chemistry of the Medico-Chirurgical College. While teaching, he pursued graduate studies in botany and zoology at the University of Pennsylvania, earning a Ph.D. in 1915, and a promotion to Adjunct Professor, all while writing the first edition of his textbook *Pharmaceutical Botany*, published in 1914.

Dr. Youngken's doctoral thesis was titled, *The Myricaceae-Their Morphology, Taxonomy, and Distribution,* and included elaborate descriptions of five species of bayberry, their roots, stems, leaves, inflorescences, and fruits.[2]

Philadelphia College of Pharmacy

Dr. Youngken in his 1927 Yearbook photo.

As Dr. Youngken was earning his doctorate and professorship, the Medico-Chirurgical College and all its faculty and students, were under major threat. The city of Philadelphia purchased the land occupied by the Medico-Chirurgical buildings in order to construct a new parkway. The Philadelphia College of Pharmacy reached out an olive branch to the Medico-Chirurgical College, offering to absorb the school, its faculty, and students. In 1916, when the Medico-Chirurgical College was demolished, Dr. Youngken joined the Philadelphia College of Pharmacy as Assistant Professor of Botany and Pharmacognosy. Upon the resignation of Henry Kraemer in 1917, twenty-year veteran Professor of Botany and Pharmacognosy and Director of the Microscopical Laboratory, Dr. Youngken became Acting Professor.[1]

In addition to teaching duties, Dr. Youngken was in charge of directing the three-acre botanical gardens, including a large plot containing a representative variety of medicinal plants, as well as a greenhouse and cold frame for the systematic study, cultivation, and standardization of therapeutic drug plants.

While at the Philadelphia College of Pharmacy, he published dozens of important papers, two more editions of *Pharmaceutical Botany*, and the first edition (1921) of *Pharmacognosy*, a comprehensive textbook of the field. Evidence of his avid readings in pharmacognosy, from 1921 to 1923, he published extensive literature reviews, each citing over 175 articles. His own publications ranged in topics including the United States drug plant cultivation, pharmaceutical history, plant associations, histology, chemistry, morphology, taxonomy, and adulterants of drug plants, as well as pharmacy education, and drug store management.[3-7] Papers presented on the topic of Native American drugs earned him recognition in LaWall's *Four Thousand Years of Pharmacy* in 1927.[8]

Youngken's window to the world.

The microscope was Dr. Youngken's window to the world. He spent countless hours looking through the lens to create the hundreds (or thousands) of intricately detailed, hand-drawn depictions of the histology of plant drugs for his textbooks, papers, and monographs commissioned by the American Pharmacists Association (APhA). The microscope allowed for the identification of adulterants, commonly found in the drug market at the time. In the paper titled "The Value of the Microscope in the Drug Store," he urged pharmacists to inspect every batch of drugs sold microscopically, citing cases of toxic species found in batches of crude drugs, and tablets diluted with cornstarch, thereby delivering potentially dangerous lowered doses.[6] In 1920 he was elected Secretary, and in 1921, Chairman of the scientific section of the APhA, marking the beginning a partnership that would endure through his life and career.[1]

Dr. Youngken married Clara Eastman while in Philadelphia and in 1919 they bore their first child, Heber Youngken, Jr. Dr. Youngken had the rewarding experience of having his son follow in his footsteps to become a renowned pharmacognosist himself. The Youngkens each had their own approach to teaching, and "neither agreeing entirely with the philosophy of the other."[9]

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Heber W. Youngken, Sr.

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Massachusetts College of Pharmacy

Problems awaiting solution [in pharmacognosy] are so numerous that the surface has merely been scratched. There are, for instance, methods of microanalysis to be perfected, problems in genetics pertaining to the cultivation of drug plants yielding a more uniform amount of active principles to be solved, not to mention the wealth of material to be investigated within the realms of plant chemistry and morphology.

H. W. Youngken, 1923 Editorial in the Journal of the American Pharmaceutical Association[10]

After five years of service to the Philadelphia College of Pharmacy, Dr. Youngken was "lured away" by a special committee of the Massachusetts College of Pharmacy.[11] There, he chaired the Materia Medica and Botany Department as a Professor of Pharmacognosy, where he spent the remaining 40 years of his life. In the beginning, his teaching responsibilities were a staggering 15 to 25 hours per week, including first-year Botany, second-year Physiology, Pharmacognosy, and Inorganic Materia Medica, third-year Pharmacognosy and Organic Materia Medica, Technical Microscopy I and II, Advanced Pharmacognosy, Drug Plant Cultivation, General Plant Taxonomy, and Special Topics in Pharmacognosy.[12-14] Many years later, in 1957, Dr. Norman Farnsworth took Dr. Youngken's Technical Microscopy course. He recounts Dr. Youngken towering in front of the classroom, addressing the five students as if an auditorium of people, reciting from memory the course material in verbatim with his textbooks.

The Ebert Medal

It was said "hearing Dr. Youngken read a paper was a real experience since he had a vast botanical vocabulary and knew how to paint with technical words the most exacting descriptions of that which he saw and observed."[15] Despite his demanding teaching schedule, he maintained active in research pursuits and in 40 years published over 100 scientific articles, as well as editorials and book reviews, edited the botanical sections for many editions of the *National Formulary (N.F.)* and the *United States Pharmacopeia (U.S.P.)*, and *United States Dispensatory*, and published several more editions of his textbooks on *Pharmaceutical Botany* and *Pharmacognosy.*[9,15] For his 1925 paper titled, "The Anatomy and Botanical Position of Miré," in which he describes a species of *Brunsfelsia* used by aboriginal Bolivians to induce muscle paralysis, he was awarded the Ebert Medal, America's oldest pharmacy award.[16,17] It can be claimed that Dr. Youngken was the first recipient of the Ebert medal, as all recipients before received the award in a form of a $500 cash prize, and the year Dr. Youngken was anointed, the medal was instituted.[17] Dr. Youngken was not present at the 1925 meeting of the American Pharmaceutical Association. The gentleman who received his medal in his stead, said of him, "I think every man whose heart is in the right place rejoices when distinction comes to his friend, and I have great happiness in accepting the Ebert Medal for my friend, Professor Youngken, who has now been in Boston for two years. With a profound knowledge of his subject and his almost unlimited industry as a worker, he combines the simple heart of a child in such a way that has won the high regard of everyone associated with him." [17]

Dr. Youngken served as the 1928 president of the Plant Science Seminar, affectionately called The Watermelon Party by Dr. Norman Farnsworth, and later to become the American Society of Pharmacognosy, celebrating 50 years in 2009.[18]

The Pure Food and Drug Acts of the National and State Governments make it incumbent upon all dealers in drugs and chemicals to sell and dispense only such U.S.P. and N.F. drugs which conform to the U.S.P. IX and N.F. I.V.

H. W. Youngken[6]

In the I930's Dr. Youngken devoted much of his time to the study of *Viburnum* species, also called black haw. *Viburnum* spp. were listed in the *N.F.IV, U.S.P.IX* and the *United States Dispensatory* and prescribed by doctors for the treatment of menstrual irregularities and cramping. Many researchers studied the effects of *Viburnum* on smooth muscle tissue, but the results were starkly conflicting. Dr. Youngken was determined to demonstrate the case that adulteration and substitution of black haw bark with other related species was the cause of conflicting reports. In four studies, comprising 70 pages and 10 years of work, Dr. Youngken investigated every species of North American *Viburnum*, their morphology, taxonomy, history, botany, and pharmacology. He personally identified several cases of adulteration in commercial supplies and interviewed traders who claimed to have used substitutes in response to the shortage of authentic material.[19-24]

In 1957, he was made professor emeritus and continued to teach courses in technical microscopy, and pharmacognosy with help from Professor Maynard Quimby, his former student and then Chair of the Department, and another founding ASP member.

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Heber W. Youngken, Sr.

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The Legacy

Considered the foremost expert regarding taxonomy, especially microscopic and macroscopic characteristics of plant drugs in the United States, Dr. Youngken was often called upon by government officials, academics, and industry to identify plants.[9] When the United States Government condemned a sample of "horehound herb" shipped from Greece, for suspicion of adulteration, Dr. Youngken was called to provide his expertise. He discovered flower parts of the closely related "false horehound," confirmed by comparison with herbarium vouchers of the National Academy of Science.[5] "When [the pharmaceutical industry] was importing *Rauwolfia* [*Rauvolfia serpentina* or Indian snakeroot, the source of the hypertensive drug reserpine] into the country, Dr. Youngken was the only person they would go to in order to ensure that the plant material really was *Rauwolfia*."[25]

Several of Dr. Youngken's books.

Letters of correspondence between the curator of the Arnold Arboretum at Harvard University from the 1930's until the 1950's demonstrate his appetite for research and pleasure in providing consultation to others.[26] In 1941, Dr. Youngken coordinated efforts between the Massachusetts College of Pharmacy and the Arnold Arboretum at Harvard University to build a two-acre medicinal plant garden. The four purposes of the garden were to provide added facilities for the teaching of botany and pharmacognosy by enabling students to see and study the growing medicinal, oil-yielding and aromatic plants which yield many drugs and condiments, to provide authentic plant materials needed for class work and investigation, to ascertain which medicinal plants of exotic origin can be grown successfully in New England, and to endeavor to ascertain what nutrient and other factors are essential to the yield of drugs of superior quality."[27] The garden was made open to visitors of the Arnold Arboretum, professional and public alike. This garden has since been replaced by a building called the William A. Hinton State Laboratory Institute.[28]

In his chairman's address to the 1928 Plant Science Seminar, he recommended that the exchange of herbarium specimens be made a feature of annual meetings.[18] Dr. Youngken's own herbarium in his small Massachusetts College of Pharmacy office was estimated to consist of 7,000 specimens.[25] When he passed away, the herbarium was stored in as many as 40 boxes in the attic of the College. In 2000, the collection was donated to the American Botanical Council (ABC), who had hopes of building a facility to properly house the collection.[29] In 2005, the decision was made to transfer the collection to the Botanical Research Institute of Texas (BRIT), where they will be stored in herbarium conditions, thereby prolonging Dr. Youngken's legacy.[30]

Dr. Youngken in his 1963 Yearbook photo.

Dr. Youngken, 77, died July 20th, 1963 in Symmes Hospital, Arlington, Massachusetts, following a brief illness.15 Upon hearing the news, attendees of the 1963 ASP Annual Meeting in Chapel Hill, North Carolina, quietly mourned the loss of one of the greatest pharmacognosists to have ever lived. "The father of American pharmacognosy" was survived by his wife, Clara M. Eastman, his two sons, Heber W., Jr., (1919-2001), and Eugene W., of New London, New Hampshire, two daughters, Marion Gowdy of Winchester, Massachusetts, and Flora McCarthy of Arlington, Massachusetts, and at least seven grandchildren. The late Dr. Quimby continued Dr. Youngken's legacy at the Massachusetts College of Pharmacy until 1967.

Acknowledgements

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ASP Fellow Dr. Susan Horwitz Receives Research Honor

ASP Fellow, Dr. Susan Band Horwitz, was awarded the Medal of Honor from the American Cancer Society, its highest award, on November 21, 2008.

Dr. Horwitz, Distinguished Professor and co-chair of the Department of Molecular Pharmacology at Albert Einstein College of Medicine of Yeshiva University, was recognized for her groundbreaking research on the cancer drug Taxol (paclitaxel), used by more than one million patients around the world to treat cancers of the ovary, breast, and lung.

"When I started working with Taxol in the 1970's, there was absolutely no indication that it would be useful in the clinic," says Dr. Horwitz. "Of course I hoped, but I had no reason to think that it would turn into a drug that would help more than a million cancer patients."

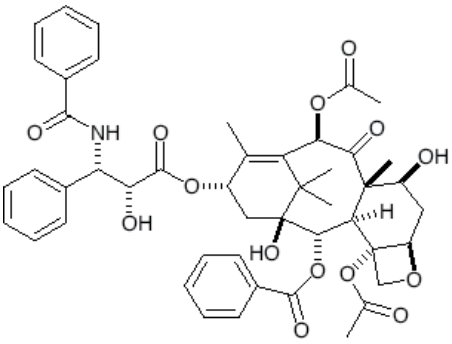
Bark from the Pacific yew tree, *Taxus brevifolia*, was collected in 1962 by two botanists who were hired by the National Cancer Institute (NCI), a branch of the National Institutes of Health, to find natural products that might cure cancer. The isolation of Taxol from the bark by ASP members, the late Dr. Monroe E. Wall, and Dr. Mansukh C. Wani, at Research Triangle Institute was published in 1971.

Albert Einstein College of Medicine

Outgoing ACS President Dr. Elmer Huerta, Dr. Susan Horwitz, and ACS CEO Dr. John R. Seffrin.

Research into Taxol languished for years. The yew tree was relatively rare and produced little of the compound. Furthermore, isolating and extracting Taxol from the tree's bark was difficult. It was not until the mid-1970's that NCI researchers confirmed that Taxol had anti-tumor properties, but they couldn't figure out how it affected cells. For that, they turned to Dr. Horwitz, a promising young researcher at Albert Einstein College of Medicine who was known for her studies of naturally occurring small molecules and their use in cancer treatment.

Within months of receiving samples of the compound in 1976, Dr. Horwitz and her colleagues discovered Taxol's mechanism of action. Some anti-cancer drugs kill cancer cells by wrecking the proteins needed to make microtubules, filament-like structures that play a crucial role in cell division. But as Dr. Horwitz found, Taxol works in a completely different manner. Instead, the molecule sends cells into overdrive, churning out extra microtubules that clog up the cells' innards. Taxol freezes the microtubules into bundles, preventing them from disassembling. As a result, cancer cells have no way to divide, and they soon collapse and die. It was a stunning discovery, setting the stage for a whole new class of cancer chemotherapeutic drugs.



Taxol

But first, Taxol had to be brought from the bench to the bedside, which was no easy task. Early clinical tests showed the drug to be quite toxic, delaying human trials for years. But Dr. Horwitz was undeterred. "We felt that this was a special drug, because it had a unique structure and mechanism of action," she says. Researchers at Einstein and other institutions eventually figured out how to transform the compound into a formulation that was safe for human use.

Finally, in 1992, 16 years after Dr. Horwitz first began studying the compound, the FDA approved Taxol for the treatment of ovarian cancer. Later, it was approved for use against advanced breast cancer and small-cell lung cancer. To date, Taxol is the best-selling cancer drug ever manufactured.

"I am very honored to receive this award from the American Cancer Society," says Dr. Horwitz. "It is so important to realize that basic scientists can make significant contributions to clinical care." She adds, "I feel strongly that this is not my personal award. It is for my entire laboratory - for all the students, fellows, visiting scientists, and collaborators that have worked with me all these years."

Today, Dr. Horwitz is more optimistic than ever about curing cancer. "We've learned a tremendous amount in the 35 years since I got my first research grant, which was from the American Cancer Society," she says. "I believe that with enough financial support, and with the brightest and the best young people going into cancer research, we should be able to overcome this disease."

This article appears courtesy of Albert Einstein College of Medicine.

Norman R. Farnsworth ASP Research Achievement Awards

by Drs. Jim McAlpine, Mike Tempesta, and John Blunt

The Norman R. Farnsworth ASP Research Achievement Award (NRFASPRAA) Committee solicits nominations for the highest award given by the Society. This award is given for outstanding research furthering the study of pharmacognosy and is presented once a year at the Annual Meeting where the awardee is expected to deliver an Award Address on an aspect of his or her research.

The award carries with it an honorarium of $5,000 plus expenses to attend the Annual Meeting. Awardees do not have to be members of the Society and service to the Society is not a consideration in choosing the awardee. As the name of the award implies, research achievement in one of the areas of pharmacognosy is the sole criterion. Nominations should include a full curriculum vitae of the nominee and usually include three letters seconding the nomination. They should also include a statement from the nominee that he or she is aware of, and consents to, the nomination.

Selection is made by the selection committee a year ahead of the award and must be ratified by the Executive Committee of the Society. The Selection Committee considers nominations for up to three years after the nomination is received but one of the conditions for consideration is that the nominee be maintaining an active research program at the time the selection is sent to the Executive Committee.

Relatively few nominations have been received by the Committee in the last few years, and your consideration of outstanding researchers in our field is requested.

Nominations should be sent to Dr. Jim McAlpine at 730 Benson Lane, Green Oaks, Illinois 60048, or electronically to jmcalpine@thallion.com. Those nominated for consideration for the 2010 or later awards should be received by March 31, 2009.

December 15, 2008 Awards Deadline

by Dr. Phil Proteau

The deadline for receipt of applications for 2009 ASP travel grants, research grants, and research awards is DECEMBER 15, 2008. This deadline applies to the following awards: Student Research Award, Kilmer Prize, Undergraduate Research Award, General Travel Grants for Graduate Students, Lynn Brady Student Travel Awards, Research Starter Grants, Travel Grants for Active Members, the D. John Faulkner Travel Award, and the Matt Suffness Award (by nomination only).

Special Grants for 2009 - 25 $1000 Graduate Student Travel Grants

In order to have a high level of graduate student participation at the ASP 50th Anniversary Meeting, ASP will fund 25 $1000 travel grants for graduate students to present their work in Hawaii.

Details about application requirements for specific grants and awards are posted at the ASP Awards and Grants heading on the website (www.phcog.org/awards/awardgrant.html).

ASP Book Project

Drs. Roy Okuda and Gordon Cragg

The year 2009 is our time to celebrate our important milestone and an excellent chance to both recognize our history, and to look forward to the future of the ASP. For the past several years, a large group of dedicated members and supporters have contributed in many ways to help us mark our special anniversary. The ASP history book is the project involving the largest number of people, 100 or more, and will be published in Spring, 2009.

Dr. Gordon Cragg, in a heroic effort, has compiled and edited articles contributed by over 100 colleagues worldwide. The entire history of the ASP, from inception to present, is described. Other articles describe natural products programs at many institutions in the United States, and in countries and regions throughout the world.

The “story behind the story” of the discovery and development of many of the most significant natural products in the past half century is given, often by the discoverers themselves. A profiles section on past presidents, award winners and honorary members has been compiled by co-editor, Dr. Will Jones, together with Dr. Scott Baggett and other young ASP members. The ASP history book will be a celebration of the Society, its members and their many accomplishments.

Conference Calendar

The *Newsletter* is pleased to announce the following upcoming conferences and meetings. The events portrayed here reflect what listings and notices the *Newsletter* has specifically received. For a more extensive calendar, please visit the ASP website at www.phcog.org. If you have a conference or event you would like mentioned, please send us relevant information, including any graphics or appropriate fliers, at asp.newsletter@lehman.cuny.edu.

International Conference on Herbal Medicine: "Evaluation of Quality, Efficacy, and Safety"

Indian Institute of Science, Bangalore, India
February 26-28, 2009

www.herbalconference2009.com

50th Anniversary Meeting of the American Society of Pharmacognosy

Honolulu, Hawaii
June 27 - July 2, 2009

www.phcog.org/AnnualMtg/Honolulu.html

8th Annual Oxford International Conference on the Science of Botanicals

The University of Mississippi, Oxford, Mississippi
April 6-9, 2009

www.oxfordicsb.org

57th International Congress & Annual Meeting of the Society for Medical Plant Research

Geneva, Switzerland
August 16-20, 2009

www.ga2009.org

Society for Economic Botany: 50th Annual Meeting

College of Charleston, Charleston, South Carolina
May 31 - June 4, 2009

http://2009.sebconference.org

Meet a New ASP Member

by Amy Keller

ASP welcomes many new members to the Society this year. We are especially pleased to feature a member with a wide range of fascinating professional experience, Dr. James Sullivan. He works as a Process Quality Manager at Gaia Herbs in Brevard, North Carolina. We are grateful to Dr. Sullivan for this opportunity to get more acquainted with him.

Kent Constable

Dr. Jim Sullivan

How did you hear about the ASP?

I became aware of ASP while reviewing the early herbal monograph works by Roy Upton and the American Herbal Pharmacoepoeia group while doing natural products research and analytical chemistry at Hauser Research in Boulder, Colorado.

Why did you join ASP?

I joined ASP so I can continue to network with other pharmacognosists and to keep current with pharmacognosy work being done worldwide.

What are your research interests in pharmacognosy?

As a naturopathic physician by trade, I have always had to help pioneer and implement the "old" sciences with the "new" sciences concerning the healing arts and the modern scientific technologies. I believe it is important to continue the research and characterization of botanical materials while utilizing the newer scientific HPLC technologies and including the thin layer and microscopic standard procedure methods. I have had recent training from the FDA in microscopy of botanical materials. I want to continue doing pioneering work in my career where possible for this important science.

What is your scientific background?

I graduated from National College of Naturopathic Medicine in 1980 and practiced in Kansas and Minnesota until 1988 when I went into natural products research at Hauser Research in Boulder, Colorado. I was a pioneer scientist, along with other natural product chemists, in the isolation and extraction of the pharmaceutical cancer drug Taxol from the Pacific yew tree bark, approved by the FDA. While at Hauser Research, I extended my analytical chemistry and research experience into various natural products projects including some of the most common herbs in commerce today. Finally, I have spent a lot of time with other herbal companies as a technical advisor and consultant in the quality assurance and quality control laboratory analysis of botanical products, including Eclectic Institute in Portland, Oregon, Rexall-Sundown in Boca Raton, Florida, and currently Gaia Herbs in Brevard, North Carolina.

Can you describe what you do in your current position?

I am currently a Process Quality Manager responsible for quality assurance functions and overall process quality of herbal formulations in production. I take part in the writing of SOP's and performing QA auditing and regulatory responsibilities of outside contract manufacturers. My process chemistry experience is utilized with all aspects of technical operations with the botanical and nutraceutical receipt of materials, herbal extraction and encapsulation, QC analysis in production, and monitoring of the label and packaging compliances for Gaia Herbs. My current work is to publish scientific applications related to the ethanol-water extraction clean-up of toxic heavy metals from herbs in commerce, particularly from imported herbs.

Do you belong to any other scientific societies?

I am a member of the American Organization of Analytical Chemists and the American Botanical Council.

What do you like doing in your spare time?

I like to play golf regularly. I have recently been doing a lot of international travel with interest of the various cultures. I like to collect, dry, and press botanical species archives and placing them on herbarium papers.

What are you currently reading?

I am currently reading an HPTLC textbook concerning the different ways of method developments currently being used to properly identify botanical species. I review *Phytomedicine* and keep up to date with reading the *HerbalGram* magazine and *Herbal Clips* from the American Botanical Council.

Behind The Scenes in Pharmacognosy

The ElSohly Laboratory: To Serve and Advise

by Amy Keller

In April of this year, the article entitled, "Cannabinoid Ester Constituents from High-Potency *Cannabis sativa*" by Safwat A. Ahmed, Samir A. Ross, Desmond Slade, Mohamed M. Radwan, Fazila Zulfiqar, and Mahmoud A. ElSohly, appeared in the *Journal of Natural Products*' 71st volume. The *Newsletter* interviewed corresponding author and ASP member Dr. Mahmoud A. ElSohly, who took time out his busy schedule to give us insight into an interesting study.

From left to right - Drs. Mohamed Radwan, Mahmoud ElSohly, Samir Ross, Desmond Slade.

How did you become interested in the medicinal chemistry of *Cannabis*?

I started working on *Cannabis* in 1976, when I took a postdoctoral position with Dr. Carlton Turner, a prominent member of the ASP who became the drug abuse policy advisor to President Reagan in 1980. Dr. Turner was the Director of the Marijuana Project at Ole Miss at the time, and after he assumed his position at the White House, I became the Project Director. Our group has isolated more new compounds from *Cannabis* than any other group in the world. In the last two years, we have reported on the chemical structures of 28 new compounds isolated from a high potency variety of *Cannabis*.

Who in your laboratory carried out the research?

Our team includes Drs. Samir Ross, Desmond Slade, Mohamed Radwan, Safwat Ahmed and Fazila Zulfiqar. I serve as the team mentor.

Could you provide a brief explanation of the work and results in your own words? In what way are the data in your paper new?

We have been intrigued by the constant and gradual rise in the potency of confiscated *Cannabis* (marijuana) over the years. The tetrahydrocannabinol (THC) content in the 1970s averaged less than 1%, and has risen to approximately 8% currently. Today it is not unusual to find marijuana samples of greater than 15% THC and even over 20%. Since most phytochemical work in the past was carried out using low or medium potency material (2-4% THC), we have developed and cultivated high potency varieties and reexamined the chemistry of these. The aim of our work was to determine if there are other, new constituents in the high potency marijuana and if so, how these constituents contribute to the overall activity of the plant material. The compounds reported in this article, and others already published or in preparation, are new compounds that have not been previously reported in *Cannabis*.

What impact on the medicinal use of *Cannabis* does this research have?

This research shows the complexity of the chemistry of *Cannabis* and the fact that marijuana is a crude drug containing a wide range of chemicals with different biological activities. Therefore, the plant should be used as a source of many constituents of potential medicinal and therapeutic potential, and not a drug to be "smoked" for medicinal purposes.

What is a favorite nonscientific activity of your lab?

The laboratory personnel join in holiday celebrations, birthday parties, retreats, and fellowships. The most exotic activity carried out by one of our team members is tree climbing.

What is your lab's motto?

Our motto is, "quality comes first." We also service the law enforcement community, including Drug Enforcement Agency (DEA), as well as state and local narcotic agents, providing potency trend data on the samples submitted by these groups. So, "serve and advise" is another motto.

What is your greatest extravagance in the lab?

We just built and equipped an indoor growing room and micro propagation laboratory for marijuana propagation and production, obviously with the proper DEA registrations.

Brief News From Washington

by Dr. Georgia Perdue

- Dr. Elias Zerhouni stepped down as Director, National Institutes of Health (NIH) at the end of October. Just before leaving office, he put in place a new policy, Early Stage Investigator, to encourage funding for scientists new to NIH who are in the early stage of their careers. "Exceptional scientists with new ideas are at the core of our success—we must invest in the future of our new scientists today…." said Zerhouni. These investigators are encouraged to apply for the traditional research project grant awards, namely the R01. This policy is an outcome of the new Peer Review Policy being slowly implemented. (see http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-121.html)
- The National Cancer Institute released the results of a study using selenium and vitamin E in a prevention trial against prostate cancer. The seven-year trial with 35,000 men shows that "selenium and vitamin E supplements taken either alone or together did not prevent prostate cancer."
- Dr. John (Jack) Killen has been appointed Deputy Director of the National Center for Complementary and Alternative Medicine (NCCAM). Dr. Killen spent many years at the National Institute of Allergy and Infectious Diseases in the AIDS division.
- Among the four **new centers of excellence for research on complementary and alternative medicine** recently funded by NCCAM, is a center on CAM countermeasures against infectious and inflammatory disease at Montana State University, in Bozeman, Montana. Dr. Mark Jutila is the principal investigator. One of its projects will focus on the effects of polyphenols in extracts from apple skins and from yamoa, originating from the bark of an African gum tree. A second project will look at two compounds in licorice root for their potential antiviral effects in models of influenza and stomach virus. The third will look at bacterial products for treating autoimmune diseases such as arthritis. Dr. Chun-Su Yuan, of the University of Chicago, will head up another center for herbal research on colorectal cancer. His team will examine the antitumor effects of American ginseng (*Panax quinquefolius)* and notoginseng (*Panax notoginseng*).
- Dr. Josephine Briggs, NCCAM director, wants to expand the area of **botanical therapeutics**. At the September NCCAM Advisory Council meeting, Dr. Briggs mentioned that Dr. David Kingston is a member of the intramural board of scientific counselors which reviews NCCAM's intramural research. She also noted that NCCAM funds fewer R01 grants, but more R21s, than the rest of NIH. Dr. Briggs will conduct an in-depth evaluation of the R21s and report her findings to the Council in February.
- In mid-November the NIH announced that clinical trials with the dietary supplement *Gingko biloba* "…was found to be ineffective in reducing the development of dementia and Alzheimer's disease in older people…." The 8-year Gingko Evaluation Memory (GEM) trials, with 3,069 participants age 75 years or older with normal cognition or mild cognitive impairment, were conducted at four sites, funded by NCCAM, National Institute on Aging (NIA), National Heart, Lung and Blood Institute, National Institute of Neurological Disorders and Stroke, and the Office of Dietary Supplements. Dr. Richard Hodes, M.D., Director of NIA, noted that "… it is disappointing that the dietary supplement … had no effect in preventing Alzheimer's disease." Dr. Richard Nahin, NCCAMs Acting Director, Division of Extramural Research, stated "…gingko is one of the top 10 natural products used by Americans." He added, "It is important to conduct studies and build scientific evidence … [for] botanical supplements through rigorous research such as the GEM trial." (see *Journal of the American Medical Association,* 2008:300 (19): 2253-2262)
- The annual bibliography of significant advances in dietary supplement research is now available. It contains over 400 original scientific papers and can be accessed from http://ods.od.nih.gov/research/annual_bibliographies.aspx.
- The NIH 2009 budget is expected to remain essentially flat. Much of the government, including NIH, is and probably will remain under a continuing resolution. The NIH has set aside $90 million to support the NIH – wide **Bridge Award Program**. National Cancer Institute (NCI) Director Dr. John Niederhuber told the Board of Scientific Advisers (BSA) in November the FY 2010 budget is already set and he does not anticipate a new budget for NIH until FY 2011. He expects the NCI R01 grants to have a 20% success rate over the next year.
- The **new SBIR program at NCI** recently funded grants with venture capital support. "We were told it couldn't be done," said Dr. Niederhuber. "Applications are coming and our dollars are being spent more effectively."
- The **Food and Drug Administration** approved a new anticancer drug, **CZ48, a derivative of camptothecin** (isolated from C*amptotheca acuminate),* for Phase I clinical trials. Developed by the Houston-based Christus Stehlin Foundation for Cancer Research, CZ48 can be taken orally and has shown activity against several solid tumors with a lack of toxicity. The first trials began at the University of New Mexico Center, Albuquerque, New Mexico, in November. Additional trials are expected to be carried out at Vanderbilt-Ingram Cancer Center, Nashville, Tennessee.

From the Archives

Fifty Years of ASP

In 2009, the American Society of Pharmacognosy will be celebrating the 50th anniversary of its founding. The Society is planning a number of ways to commemorate this auspicious occasion, including the ASP Photo Project and ASP Archives. The Newsletter *has begun digging into these resources in order to publish items from the past and annotate them with member memories. ASP encourages all members to submit items to the ASP Photo Project and Archives. If you would like to suggest topics to be featured in "From the Archives", please forward them to the* Newsletter.

by Dr. Edward J. Kennelly

The American Society of Pharmacognosy was founded in August, 1959, at the University of Illinois, Chicago, as an outgrowth of the Annual Meeting of the Teachers' Seminar on Pharmacognosy. A plaque now hangs in Lecture Room 32, in the College of Pharmacy, with the photo and names of those attending the Seminar. Professor Norman Farnsworth, one of the founding members, noted, "Not all of those pictured were 'founding members' of the Society, but most are. As best that I can ascertain, there were 88 scientists at the meeting, most of them were pharmacognosists. As best as I can determine, about 50 of these are still alive."

Professor Farnsworth's remembrance of the meeting "was that Art Schwarting provided a draft of a constitution and by-laws of the proposed American Society of Pharmacognosy. A group of us met in a local restaurant (with a bar) and in the back room the strategy for passing the new constitution and by-laws was modified. The Chair of the Plant Science Seminar was Edson Woodward, Chief Pharmacognosist for the S.B. Penick Company in New York. As I recall, the major points of discussion revolved around the name of the new Society and the future role of the Plant Science Seminar. At the suggestion of [founding member] Heber Youngken Sr., the annual meeting of the ASP would be known as the Plant Science Seminar, but this designation disappeared after a few years."

1. L. Amer
2. K. Redman
3. R. Doughty
4. R. Westby
5. C. Johnson
6. L. Brady
7. H. Hoch
8. J. Bianculli
9. R. VanderWyk
10. F. Eby
11. L. Sciuchetti
12. K. Kazerovskis
13. H. Youngken
14. F. Slama
15. E. Djao
16. R. Marano
17. M. Ferguson
18. M. Vallarta
19. M. Dunn
20. H. Hewitt
21. C. Albers
22. R. Brillhart
23. F. Kelz
24. A. Koffler
25. B. Bienfang
26. V. Bailey
27. M. Tanner
28. M. Quimby
29. R. Stokes
30. R. Leonard
31. M. Gibson
32. G. Gjerstad
33. L. Ferring
34. M. Andries
35. F. Cole
36. S. Sim
37. F. Crane
38. D. Tsao
39. H. Youngken
40. B. Benton
41. F. O'Connell
42. H. Jonas
43. E. Roscoe
44. J. Beal
45. F. Pokorny
46. C. Lord
47. L. Zopf
48. G. Webster
49. P. Carpenter
50. J. Staba
51. H. Bailey
52. F. Bulda
53. L. Schermeister
54. E. Fischer
55. V. Simonian
56. R. Bienfang
57. K. Stahl
58. S. Smolenski
59. S. Susina
60. P. Catalfomo
61. D. Carew
62. A. Paul
63. L. Schramm
64. T. Call
65. K. Waters
66. P. Briggs
67. J. Seibert
68. G. Duff
69. E. Taylor
70. V. Tyler
71. L. Parks
72. E. Claus
73. F. Mercer
74. A. Dodge
75. F. Martin
76. R. Blomster
77. N. Farnsworth
78. J. Caponetti
79. A. DeMaggio
80. R. VanHorne
81. N. Tanner
82. L. Anderson
83. R. Voigt
84. C. Blomquist
85. L. Hanmer
86. W. Brewer
87. A. Schwarting
88. J. Dusenberry

David J. Slatkin, Ph.D, Treasurer
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Northbrook, Illinois 60062

ASP Membership

Full Membership

Full membership is open to any scientist interested in the study of natural products. Dues are $75 per year. In order to receive the *Journal of Natural Products* the subscription rates are as follows: United States, Canada, and Mexico: $157 (Print Edition), $70 (Web Edition), $140 (Archive Web Edition); All other countries: $247 (Print edition), $70 (Web edition), $140 (Archive Web Edition).

Associate Membership

Associate membership is open to students of pharmacognosy and allied fields only. These members are not accorded voting privileges. Dues are $25.00 per year. In order to receive the *Journal of Natural Products* the subscription rates are as follows: United States, Canada, and Mexico: $98 (Print Edition), $70 (Web Edition), $140 (Archive Web Edition); All other countries: $163 (Print Edition), $70 (Web Edition), $140 (Archive Web Edition).

Emeritus Membership

Emeritus membership is open to retired members of the Society who maintained membership in the Society for at least five years. Dues are $10.00 per year. These members receive the ASP Newsletter. Emeritus members may subscribe to the *Journal of Natural Products* at the Full Member rates.

Honorary Membership

Honorary members are selected by the Executive Committee of the American Society of Pharmacognosy on the basis of meritorious service to pharmacognosy.

Present Honorary Members are:

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Additional information about membership may be obtained by writing to the Treasurer of the Society:
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