The American Society of Pharmacognosy

Discovering Nature's Molecular Potential

The ASP Newsletter: Volume 52, Issue 1

JNPC: Copenhagen 2016!

By Dr. Anna Jäger

Welcome to the 9th Joint Natural Products Conference (JNPC), to be held in Copenhagen, Denmark, from July 24-27, 2016! The conference takes place at the Tivoli Congress Centre in central Copenhagen, Denmark. It is a privilege and a great honor to welcome you to this joint conference organized by University of Copenhagen, Copenhagen, Denmark, on behalf of the Society for Medicinal Plant and Natural Product Research (GA), the American Society of Pharmacognosy (ASP), the Phytochemical Society of Europe (PSE), Società Italiana di Fitochimica (SIF), Association Francophone pour l'Enseignement et la Recherche en Pharmacognosie (AFERP), and the Japanese Society of Pharmacognosy (JSP).

The conference covers a broad range of scientific disciplines within natural products research. We have put together a tantalizing program of high scientific standard, with interesting talks and time for networking. The scientific program includes plenary lectures by invited speakers, and both keynote and short talks on recent topics of natural product research. The main themes are, "Advances in Natural Products Research Spurred by New Technological Developments," Sources of Bioactive Compounds," Sustainable Sources of Bioactive Natural Products," Natural Products as Preventive and Curative Medicine for Humans and Animals," and "Production and Regulatory Aspects of Herbal Preparations."

The scientific program includes plenary lectures by invited speakers, and keynote or short talks on recent topics of natural product research. ASP member Dr. Barry R. O'Keefe (National Cancer Institute, National Institutes of Health) has been invited by the ASP as Plenary Lecturer, with ASP members Drs. Nadja B. Cech (University of North Carolina, Greensboro, North Carolina) and James B. Gloer (University of Iowa, Iowa City, Iowa) as Keynote Lecturers. The poster sessions also provide opportunities for scientific discussions.

A Young Researcher Workshop takes place the day before the conference. There will also be a pre-conference workshop on regulatory affairs and a pre-symposium entitled, "Advances in (Bio)Analytical Techniques Applied to Natural Products Research". We hope you will enjoy the various social events, such as an Evening in the Botanical Gardens, and make the most of the light Nordic summer nights. The day following the meeting, we have organized a Botanical Excursion to three unique habitats on Zealand, the island where Copenhagen is situated.

More information can be found on the conference homepage: **www.jnpc2016.dk.** We hope to see you in Copenhagen this summer.

NOTIFICATION OF ABSTRACT ACCEPTANCE OR REJECTION: May 1, 2016. End of early registration: May 15, 2016

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EDITOR'S CORNER

As I write this Editor's Corner, the ASP Interim Meeting has come and gone in Oxford Mississippi. This was the second Interim Meeting ASP will have cohosted with Annual Oxford International Conference on the Science of Botanicals, and we are indebted to the organizers, especially ASP members Drs. Ikhlas Khan and Larry Walker for their willingness to allow ASP to piggy back on their outstanding annual conference. ASP will also be cohosting the Joint Natural Products Conference in Copenhagen this July, but we realize that a number of ASP members will not be able to attend. Thus, it was good to see a number of ASP members at the Oxford Mississippi meeting. As it happens, close to 10% of ASP members, according to the ASP Directory, are located in Mississippi. It was especially nice to see three former ASP Presidents, Drs. Alice Clark, Jim McChesney, and Geoffrey Cordell, along with future ASP President Cindy Angerhofer. The tradition of natural products is rich at the University of Mississippi, and it is great to see how much continues to be done in pharmacognosy there.

Please see the information about the Copenhagen meeting provided in this *Newsletter*. While the call for abstracts is now closed, and early registration about to close, I hope you will be sure to register soon for this conference. This will be a terrific opportunity for colleagues from around the world to discuss their latest results in pharmacognosy research. This is the first time that the Japanese Society of Pharmacognosy will be participating in the joint meeting, and this is especially noteworthy since a Japanese natural products chemist, and ASP Fellow, Professor Satoshi Ōmura won the 2015 Nobel Prize in Physiology or Medicine. It is indeed an exciting time for pharmacognosy research, and I look forward to hearing about your findings and meeting you in Copenhagen.

The ASP website has been hacked! If you type "American Society of Pharmacognosy" into a search engine, you may very well be directed to a malicious website. (However, if you simply type in the URL itself, www.pharmacognosy.us you will be directed to the correct and uncorrupted website). As ASP President, I sincerely apologize for this inconvenience. In my dreams of what I wanted to accomplish as ASP President, a stronger and more useful internet presence was high on my to-do list. I never imagined I would spend considerable time working with other officers and outside contractors to try to fix a hack. I do hope that in my last months as President, we can move forward making our website even more useful to members, and obviously, fix the hack as soon as possible.

In this issue, we also highlight the ASP elections. In addition to the election of officers (Vice President and Executive Committee), we are also considering the possibility of changing the name of the ASP. The ballot initiative grew out of a branding effort that the Society went through in 2014-2015 with Master's degree students at the Brand Center of Virginia Commonwealth University. The *Newsletter* and ballot have a discussion of the pros and cons of a name change. I hope you will look at this carefully and cast your vote before the May 15 deadline. The ballot also has a number of proposed ASP Constitution changes, and while many of these are minor, I hope you will do your due diligence in considering each change, and casting your vote.

I thank our regular contributors to the *Newsletter*. While wearing two hats now at ASP as President and *Newsletter* Editor has taken more time, my *Newsletter* job is made much easier by the help of my Assistant Editor, Dr. Amy Keller, and our regular contributors, Drs. Georgia Perdue, David Newman, Dan Kulakowski, and Ms. Devhra BennettJones. I thank each of you for your dedicated service to the *Newsletter*.

Dr. Edward J. Kennelly

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.pharmacognosy.us/jobs/

NEWSLETTER STAFF

The contribution deadlines are:
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Decisions 2016! Considering ASP Name Change

By Dr. Barry O'Keefe

In the Summer of 2014 at the American Society of Pharmacognosy (ASP) Annual Meeting in Oxford Mississippi, the ASP Executive Committee approved the engagement of the Virginia Commonwealth University (VCU) Brandcenter in a project to assess the brand of the ASP. Several requests were made to the Brandcenter to evaluate everything, including ASP membership, information dissemination, technical footprint, logo and the name of the Society itself. In reference to the name of the ASP, the specific request presented was as follows:

"One concern of the Society is whether or not the term "pharmacognosy" is still encompassing enough for the society and relevant in the 21st century. The ASP defines pharmacognosy as *"the study of the physical, chemical, biochemical and biological properties of drugs, drug substances or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources."* However, the lay public and much of the scientific public are unaware of the meaning of the term "pharmacognosy." So the issue arises that the name pharmacognosy brings a confused reaction from the lay public while its definition is generally met with "cool." In the scientific community, pharmacognosy is a term not generally recognized outside of Colleges of Pharmacy and does not have the recognition/respect level we would like. In addition, there are only a small number of colleges that still have Departments of Pharmacognosy. We would welcome help with how to bridge these gaps, so that non-scientists would recognize the "cool" without having the term explained, and scientists would gain respect for the Society. It is essential that non-scientists and leading professions alike recognize the Society moniker without having the term explained.

There is also the thought that the ASP is increasingly international with perhaps more growth opportunity outside the U.S. than inside. This, in turn, brings up the "American" in the ASP. Is this term limiting to international growth in membership? We are open to all possibilities from enhancing the public knowledge of the term pharmacognosy to even changing the name of the Society."

The VCU Brandcenter accepted the charge, and in response to the project proposal five independent teams assessed the current brand status of the ASP. These groups spent months researching the ASP, interviewing scientists and students, members of the ASP, administrators at colleges of pharmacy and in departments of chemistry, surveying the ASP membership on several questions and holding focus groups on ways to improve the standing of the Society. These groups then presented the results of their research along with ideas for how best to improve ASP recognition.

One suggestion of general agreement from all the study groups was that the Society should consider changing its name. This suggestion led to additional discussion on the subject by the ASP Executive Committee. The result was the decision to hold one last survey of the ASP members to decide whether or not to have an official ballot question next year on changing the name of the ASP. As a prelude to that survey, the *ASP Newsletter* is publishing editorials from two prominent ASP members, one in favor of changing the name of the ASP and one in favor of retaining the current name. Drs. McAlpine and Molinski (both past ASP Presidents) have agreed to present their views below. Please consider them when deciding how to respond to the coming survey. ■

ASP 'Name Change' Debate

WHY WE *SHOULD* CHANGE THE NAME

By Dr. Tadeusz Molinski

The American Society of Pharmacognosy (ASP)[1] was founded in 1959 at University of Illinois, Chicago, Chicago, Illinois, at the business meeting of its precursor organization, the Plant Science Laboratory Seminars, that had its origins much earlier (1923 at the University of Minnesota, Minneapolis, Minnesota). Also in 1959, the first officers were appointed: President Varro Taylor, Vice President Norman Farnsworth, along with Secretary Frank Mercer, and Treasurer Frank Cane. The Society's first Annual Meeting was in Boulder, Colorado, in the summer of 1960.

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WHY WE *SHOULD NOT* CHANGE THE NAME

By Dr. Jim McAlpine

1. The American Society of Pharmacognosy is well respected and known in the scientific community world-wide, with a 55-year history.

2. "Pharmacognosy" best describes the goals and scope of the Society. It covers all aspects of DRUG discovery from Nature; from botany, microbiology, zoology, genomics, through chemistry, biology, pharmacology, pharmacokinetics, toxicology, clinical efficacy and regulatory issues.

3. It is defined on Google as "the study of the physical,

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Decisions 2016! ASP Name Change

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For a detailed history of the Society, including major milestones, "pharmacognosy in action," a lineage of past presidents, research achievement awardees, pioneering activities of natural products research at many major US institutions, ties with the Lloyd Library and Museum and much more, see the wonderful monograph,[2] initiated by Dr. Roy Okuda, edited by Drs. Gordon Cragg, John Beutler and William Jones, and lovingly prepared by a host of contributors for the occasion of ASP's 50th Anniversary.

The late founders of ASP would scarcely believe how their Society would grow over the decades and evolve into astonishing dimensions, far beyond the fertile seeds of their original imagining. Today, the multiple scientific disciplines embraced by the ASP membership were hardly conceived in the late 1950's, but now help define contemporary natural products science and its relevance to society. Last year, we were enthralled when the 2015 Nobel Prize in medicine or physiology was awarded to three individuals for their work in natural products, including ASP Fellow, Dr. Satoshi Ōmura. Dr. Ōmura's Nobel lecture was entitled *"A splendid gift from the Earth: The origins & impact of Avermectin,"*[3] an anthelminthic compound discovered from a soil bacterium that has alleviated parasitic worm infections for millions. ASP is a truly internationalized society with robust components: a diverse community of members, networking to other international societies, and a major journal that befits a multidisciplinary, dynamic scientific organization. In short, the history of ASP is a story of success, from humble beginnings to the modern Society we know today.

In our time, the question has been raised; "should the Society change its name?" to one with greater recognition and more in tune with its contemporary dimensions. Specifically, should the term *"pharmacognosy"* be replaced with one befitting and representative of the diverse activities and scientific disciplines of the Society in the new millennium? As I recall, the question was first raised by former President William Gerwick, in the executive meeting at the 44th Annual Meeting 2003 in Chapel Hill, North Carolina, and again by President Brad Moore in 2013 at the business meeting of the 54th Annual Meeting in St. Louis, Missouri. A proposal was made to constitute a committee to study the matter and report back. The question is valid and worth considering, but in the meantime I offer a few 'pros' for a new Society name:

- Greater recognition of the Society by the wider scientific community through a strong, engaging, and contemporary name.
- More accurate representation of the activities of the Society that also reflects the broader origins, or provenance, of natural products in the modern age.
- Reflection and representation of the diversity and internationality of its members.
- Expansion of membership to embrace younger scientists conversant with the terminology of 'cutting edge of science,' but less familiar with the term *'pharmacognosy.'*

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chemical, biochemical, and biological properties of drugs, drug substances or potential drugs from natural sources." Not too bad, but a little narrow!

4. No other name ever proposed has embraced the scope inherent in "Pharmacognosy."

5. We are one of at least eight societies of pharmacognosy in the world and probably the most international, with one third of our members coming from outside the US.

6. The first item of our Constitution states "The name of the society will be The American Society of Pharmacognosy." To change this requires: i) a majority vote of the Executive Committee, ii) a majority vote at an Annual General Business Meeting and iii) a 2/3 majority vote at a referendum of all members. This process takes approximately 12 months. If we vote now to initiate this process, we will go through a 12 month period of indecision. The well intentioned, but misplaced, idea of changing the name has been brought up several times in the past decade and we have NEVER had 2/3 membership in favor of doing so. We should abort this divisive issue with immediate effect.

7. We have recently added a tag-line "Discovering Nature's Molecular Potential" to our Website, *Newsletter* and official letterhead to clarify what we are about to the incognizant.

8. If we think that a name change will suddenly lead to a sudden increase in membership, I believe we are sadly mistaken. The number of pharmacognosists in North America has been most adversely affected by all large pharmaceutical companies closing their natural product discovery programs, not as a result of our name. In fact, the reverse outcome may occur. We recently had a proposal from the Brazilian Society of Pharmacognosy to, for an appropriate fee, extend membership in ASP to all of their members. This arrangement, which your Executive Committee embraced, has not been consummated, presumably due to an increase in the value of the US dollar concurrent with a major fall in that of the Brazilian Real. However if the currencies readjust to something more favorable for the Real, this could go forward. If the names of the societies are different, it would be a disincentive to the Brazilians.

9. Four of the five groups of graduate students from Virginia Commonwealth University who undertook a heavily discounted Branding Project for ASP suggested we should change our name (one suggested retaining

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The legacy of ASP is unquestionable, and we would all surely agree that it is desirable to nurture the Society's growth into the next 50 years and beyond, and not rest on our laurels. Perhaps we may reach a consensus that a natural evolution of its purpose and countenance is required to do this. These and other talking points are worthy of discussion. This is where you can contribute your thoughts and suggestions. For example, what does your Society mean to you and what would you like it to be? Contact your Society through Twitter, Facebook, or LinkedIn. ■

[1] According to Wikipedia, the word *"pharmacognosy"* is derived from two Greek words φρρμακον pharmakon (drug), and γνῶσιςgnosis (knowledge). The term *"pharmacognosy"* was used for the first time by the Austrian physician Schmidt in 1811 and 1815 by Crr. Antheus Seydler in a work titled *Analecta Pharmacognostica*. https://en.wikipedia.org/wiki/Pharmacognosy It is less clear to me who, among the founding executive, suggested the term 'pharmacognosy' for the Society's name.

[2] *"The American Society of Pharmacognosy. 50 Years of Progress in Natural Products Research, 1959-2009,"* Eds. Gordon M. Cragg, John A. Beutler, William P. Jones, Omnipress, Madison, **2009.**

[3] http://www.nobelprize.org/nobel_prizes/medicine/laureates/2015/omura-lecture.html

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it). However, they were somewhat fed this suggestion by being specifically asked if we should change our name. These Marketing students did a great job and came up with several worthwhile suggestions, but we should not feel obliged to accept all or any of them. We should evaluate them as scientists.

10. Changing the name of the Society will be expensive in both time and money, perhaps more in the former than the latter. We would have to get a new website, when we have been known as "pharmacognosy.us" for some years. (Not expensive in $$, provided we can find one that fits without being held up by website trolls.) We have to redesign our logo, letterhead and *Newsletter*. We will also have to renegotiate all of our contracts and reissue them and advertise the fact that the newly named society is in fact a continuation of The American Society of Pharmacognosy. The ASP Foundation would presumably have to change its name also and change the name on its accounts, letterhead and constitution. ■

Please vote to retain the present name.

Specifically, should the term "pharmacognosy" be replaced with one befitting and representative of the diverse activities and scientific disciplines of the Society in the new millennium?

"Pharmacognosy" best describes the goals and scope of the Society. It covers all aspects of DRUG discovery from Nature; from botany, microbiology, zoology, genomics, through chemistry, biology, pharmacology, pharmacokinetics, toxicology, clinical efficacy and regulatory issues.

Decisions 2016! ASP Election Coverage

This season, ASP members will be electing a Vice President and an Executive Committee member. Candidates for the Vice Presidency are Drs. Ray Andersen and Cedric Pearce, and candidates for service on the Executive Committee are Drs. Kerry McPhail and Eric Schmidt. The *Newsletter* has obtained candidate statements below to help educate ASP members and inform their voting decision. Please remember to vote, as these open positions are important in driving our Society forward. Also keep in mind that the Vice Presidential winner will assume the ASP Presidency the following year. ■

CANDIDATE STATEMENTS FOR VICE PRESIDENT

DR. CEDRIC PEARCE

I am both happy and honored to be standing for election as President of the American Society of Pharmacognosy. The ASP membership probably knows me as Associate Editor for the *Journal of Natural Products,* a position that I have held since 2010. I have been on organizing committees for three ASP Annual Meetings, and served on a variety of ASP committees, including the Executive Committee.

If elected, I would aim to bring my leadership skills in natural products and entrepreneurship to the position for which I am standing. As well as maintaining the society's momentum, my goals are primarily as follows:

1. Increase our entrepreneurial activity, thereby improving the translation of our discoveries into commercialized natural products.

2. Further develop the society's international relationships, especially in the Americas where biodiversity is threatened.

I began my natural products career working on the biosynthesis and mutasynthesis of neomycins, a joint effort between Dr. Muhammad Akhtar's group at the University of Southampton, Southampton, United Kingdom, and Dr. Stephen Gero's group at the Institut de Chimie des Substances Naturelles (CNRS) in France. This was followed by a Royal Society European Exchange fellowship to work with Dr. Gero, and a second post-doctoral position with Dr. Kenneth Rinehart at the University of Illinois, Urbana-Champaign, Illinois.

I was on the pharmacy faculty at University of Connecticut, Storrs, Connecticut, from 1983-1988, and during this period was responsible for providing the National Institutes of Health National Cancer Institute program with fungal material for anticancer evaluation, as well as being a Visiting Scientist at Bristol-Myers Squibb where I worked with Dr. Terry Doyle and his associates on the biosynthesis of rebeccamycin and esperamicin, both of which entered human cancer clinical trials.

I spent five years working at American Cyanamid's Medical Research Division engaged in the discovery of bioactive microbial compounds for infectious diseases and agricultural and animal health applications. Immediately before joining the group, Dr. Guy Carter had discovered nemadectin, precursor to Cydectin®, and Don Borders, Mike Greenstein, and colleagues had discovered calicheamicin, which then became a challenging biosynthetic project for my own research group and ultimately an approved drug, Mylotarg®. I have thus worked on the biosynthesis of two of the most potent cytotoxic natural products known, esperamicin and calicheamicin.

Early in the 1990s, I joined the growing biotechnology industry, initially as director at MYCOsearch, soon thereafter acquired by OSI Pharmaceuticals, and ultimately becoming head of the latter's Natural Products Division. In 2000, I took a sabbatical as vice president for Discovery Technologies with Pappas Ventures, a life-science venture capital firm in Research Triangle Park, North Carolina, and following this, I founded Mycosynthetix in 2001, a fungus metabolites research company. For the past 15 years, I have worked with a number of academic (primarily Drs. Nick Oberlies and Bill Baker) and industrial groups to catalogue biologically-active fungus metabolites from our library of 55,000 fungi. I have also been Principal Investgator for five SBIR awards to help develop the business at Mycosynthetix.

I am currently an Adjunct Professor in the Chemistry and Biochemistry Department, at University of North Carolina, Greensboro, North Carolina, and since 2011, have been a Coleman Entrepreneurship Fellow at the university. ■

DR. RAYMOND ANDERSEN

I am a Professor of Chemistry and Oceanography at the University of British Columbia (UBC), Vancouver, Canada. I obtained a BS in chemistry from the University of Alberta, Edmonton, Canada, an MS in chemical physics from University of California (UC), Berkeley, California, and a PhD in marine natural products chemistry from UC San Diego Scripps Institute of Oceanography (SIO), San Diego, California, working with Dr. D. J. Faulkner. My PhD was followed by postdoctoral research in the chemistry laboratory of Dr. George Büchi at Massachusetts Institute of Technology, Cambridge, Massachusetts. I joined UBC in 1977 and have been a Full Professor since 1987.

I view the ASP as the world's preeminent organization that promotes the science of natural products chemistry. The main venues for the ASP's activities are the Annual Meeting, the *Journal of Natural Products*, the *Newsletter*, and the research grants and awards recognizing excellence in the field. As president of the ASP, I would work with the executive committee and the society membership to make sure that the ASP remains the leading voice for our field.

Issues that I would focus on are:

1. Recruiting and retaining new members, particularly young scientists early in their careers.

2. Ensuring that we have an outstanding Annual Meeting featuring a diversity of topics presented by top scientists.

3. Ensuring that young scientists have an opportunity to get exposure for their research at the Annual Meeting.

4. Fund-raising to support starter and travel grants for young scientists.

5. Continuing the tradition of having a joint meeting with other societies that promote natural products research.

6. Ensuring that the ASP has a robust outreach program that informs the public and government funding agencies about the importance of natural products research in drug discovery.

These are already the core elements of ongoing ASP activities and my goal would be to maintain the excellent work already being done in these areas and look to enhance them where possible.

My research interests encompass all aspects of the chemistry of biologically active marine and terrestrial natural products, including structure elucidation, synthesis, biosynthesis, chemical ecology, and drug discovery. I have published more than 300 peer reviewed research papers and filed more than 40 patent applications. Four experimental drugs based directly on my research have reached Phase I/II clinical trials in humans. I co-founded two biotech companies, Aquinox Pharmaceuticals and Essa Pharma Inc., which are now both public companies listed on NASDAQ with drugs in clinical trials.

I received the Rutherford Medal in Chemistry from the Royal Society of Canada, Fellowship in the Royal Society of Canada, the Schwarting Award from the ASP, the Lemieux Award from the Chemical Society of Canada, the UBC Jacob Biely Research Prize, the Paul Scheuer Award in Marine Natural Products Chemistry, the Chemical Institute of Canada Medal, Fellowship in the ASP, and the ASP Norman R. Farnsworth Research Achievement Award. I have served on the executive committee of the ASP as a member and chair of the ASP Research Achievement Award selection committee, as a member of the organizing committee for the Seattle ASP Annual Meeting, and am a member of the Editorial Advisory Board of *J. Nat. Prod.* ■

CANDIDATE STATEMENTS FOR EXECUTIVE COMMITTEE

DR. ERIC SCHMIDT

As a natural products scientist, I hold the Droschkey Chair of Pharmacy and am a Professor of Medicinal Chemistry at the University of Utah, Salt Lake City, Utah. My lab works on areas spanning natural products drug discovery and structure elucidation, chemistry, biosynthesis, and symbiosis, in many types of organisms. Because of this broad research experience, I am confident that I can represent the interests of ASP membership on the Executive Committee.

In addition to ensuring the smooth functioning of ASP, the Executive Committee has a strong role to play in supporting the field of natural products research. Our field is experiencing a time of enormous threat and enormous promise. The science is moving very quickly, enabling us to address longstanding challenges. On the other hand, we run the real risk of marginalization from mainstream disciplines, and changes in industry and funding models have only increased this challenge. As a member of the Executive Committee, I would like to help address the challenges needed to keep the field strong.

My priorities are to ensure that we are well integrated into and understood by mainstream academic disciplines; that we continue to impact policy and funding priorities; and that our academic research and training efforts continue to reflect the current needs of industry. My experience in ASP will help me to achieve these goals. I chaired a committee that helped to establish the ASP Fellows, where we pushed to give the Fellows the role of providing a strong voice and leadership to the field. I have participated as member and chair of the Farnsworth Award committee and as editorial board member of *Journal of Natural Products*. Having first joined ASP in 2003, I look forward to continuing to serve the Society and our discipline. ■

DR. KERRY MCPHAIL

I obtained a BS degree in Chemistry and Marine Biology, and PhD in Organic Chemistry at Rhodes University, Grahamstown, South Africa, in 2001. Following almost two years of postdoctoral research with Dr. William H. Gerwick at Oregon State University (OSU), Corvallis, Oregon, I took up a Research Assistant Professor position associated with the Panama International Cooperative Biodiversity Group (ICBG) program, led by Dr. Gerwick, in late 2002. After investigating industrial and academic research scientist positions, I elected to remain at OSU running an independent laboratory following relocation of the Gerwick lab to Scripps Institution of Oceanography, San Diego, California, in 2005.

In 2006, I joined the OSU Department of Pharmaceutical Sciences in a tenure-track Assistant Professor position. As an Associate Professor in the natural products and medicinal chemistry division of pharmaceutical sciences, I currently lead an internationally collaborative marine natural products research group comprising graduate and undergraduate students, as well as professional pharmacy students, visiting scholars and a visiting professor. The general research focus of my research group is the chemical and biological characterization of new macrocyclic microbial natural products relevant to the treatment of human diseases.

I have co-authored over 60 peer-reviewed publications. I have been a member of the Society since 2002, and was co-recipient of the 2010 Jack L. Beal Award for best paper by a young investigator in the *Journal of Natural Products*. I am also a recipient of the Matt Suffness Young Investigator Award in 2013. I participated in the organizing and scientific committees for the 2005 ASP Annual Meeting in Corvallis and am a member of the scientific committee for the Joint Natural Products Conference 2016 in Copenhagen, Denmark. I am also on the scientific and local organizing committees for the 2017 ASP meeting in Portland, Oregon. Some of my other service to the ASP includes Audit Committee member for 2003 and Publicity Committee member 2015-2017. ■

Efferth Wins 2015 theSCENTEDdrop Award

By Drs. Amy C. Keller and Douglas Kinghorn

The working group headed by Dr. Thomas Efferth at the Institute of Pharmacy and Biochemistry – Therapeutic Life Sciences, Johannes Gutenberg University, Mainz, Germany, was a two-time winner in theSCENTEDdrop Competition (www.thescenteddrop.eu/). This is an award to investigators and their institutions working with local herbs and fragrant plants from Graz, Austria. PhD student Onat Kadioglu and Dr. Efferth studied the medicinal properties of sage (*Salvia officinalis*), the theme of this year's competition, in terms of molecular mechanisms. Sage is used as dietary supplement and has diverse medicinal activities, including cytotoxicity towards cancer cells.

The authors investigated possible modes of action to explain its activity towards drug-resistant tumor cells (Kadioglu O.; Efferth T., *J. Nat. Prod.* **2015**, 78, 762-775). They found that a panel of drug-resistant tumor cell lines expressing diverse mechanisms of multidrug resistance (P-glycoprotein, ABCB5, BRCP, mutant EGFR, mutant TP53, and mutant RAS) did not exert cross-resistance towards two chemical constituents of sage (ursolic acid and pomolic acid). This implies that otherwise drug-resistant and refractory tumors might be successfully treated by these compounds. Using bioinformatics analysis of microarray data, they identified novel determinants of cellular responsiveness to these two phytochemicals. Molecular in silico docking indicated that the two plant triterpenoid acids bind to target proteins of the anti-apoptotic NF-κB pathway with even higher binding affinity than the known NF-κB inhibitor, MG-132. The authors concluded that the lack of cross-resistance to classical drug resistance mechanisms may open new opportunities to develop treatment strategies for cancer. ■

Further information on Dr. Efferth's research is available at **www.pharmazie.uni-mainz.de/Ak-Efferth/**.

The recipients of the 2015 theSCENTEDdrop Award in the six categories of the competition. Dr. Thomas Efferth (eighth from the left) received the award in the Science, Health, and Research category as well as for onlince audience voting.

THESCENTEDDROP.COM

Pharmacognosy Field Notes: A Drive Through the Desert Heart of Australia

Dr. David J Craik

Our work involves the discovery of plant proteins called cyclotides that have the distinguishing features of a head-to-tail cyclised peptide backbone and a knotted arrangement of three disulfide bonds. These proteins are ultra-stable and interest us because of their applications in medicine via drug design and agriculture, such as crop protection.

One of our favourite field trips for the discovery of new plant species containing cyclotides was across the Simpson Desert in Australia from Brisbane to Alice Springs. There is no direct road across this route, which involves crossing more than 1,000 sand dunes in a 4-wheel-drive vehicle. This trip involved five days of carrying our own fuel supplies, food and water across the desert. The first image shows one of the more mundane aspects of field work. (We are drying sleeping bags and towels from the overnight dew.)

One of the unique features of this trip was that even though it is rare to see other vehicles, occasionally one will see a 4-wheel-drive vehicle coming in the opposite direction, and it is important to make sure that you do not collide with them at the top of a sand dune. So, it is traditional to have a flagpole to make your vehicle visible well ahead of time. The image below shows my fifth attempt to cross the final sand dune on the return trip. This dune, known as 'Big Red,' is one of the largest navigable sand dunes in the world and not easy to cross. I finally made it by having my passengers disembark, lowering the tire pressure substantially, getting a good run up, and hoping! We made it and were rewarded with a beer at the Birdsville Hotel, on the eastern edge of the Simpson Desert. On this trip, we were able to discover several Violaceae family plants that contained cyclotides, including *Hybanthus aurantiacus*. ■

Drying field equipment; the sand dune crossing; the Birdsville Hotel: *hybanthus aurantiacus.*

ASP Fellows: Are Natural Products Gaining Traction in Pharma?

By Dr. Guy Carter

Since I left the world of Big Pharma six years ago, I have been promoting the use of natural products in drug discovery largely through interactions with biotech companies getting started in the business. In the course of this work, I have had the opportunity to interact with Big Pharma companies, now as a seller rather than a buyer, and in this account I share my perspective of the current status of natural products in Pharma.

The predictions highlighted in a 2011 article regarding the changing landscape in Pharma research and development, and how natural products could re-emerge as critical starting points for drug development are still valid.[1] The unifying theme of these predictions is that Pharma will need new types of chemical diversity to mesh with new discovery paradigms. Of course, the desire to enhance chemical diversity in screening libraries is not a new idea; in fact, this is an ongoing effort in Pharma. The difference today is that more fully elaborated molecules are needed to fit with new screening concepts. Required are libraries of "leads," versus libraries of "hits," in order to elicit positive responses in functional assays.

PHENOTYPIC SCREENING

When considering what to test in phenotypic assays, the value of natural products is widely recognized. Phenotypic screening for all sorts of biological activities has seen a resurgence of interest within Pharma.[2] The driving force is the discovery of new paths to therapeutic activity, including new targets. New generations of phenotypic assays are highly sophisticated, often with multiple readouts of "high information content." Regardless of format or sophistication, phenotypic assays require hits to be "functional" (i.e. able to elicit the desired response), and natural products are an excellent fit. In a highly positive move, the industry has returned to its roots by re-initiating the search for new antibiotics, ideally with novel mechanisms of action. The emphasis is on Gram-negative antibacterial activity; typically, such programs use some form of whole organism phenotypic screens (i.e. killing bacteria) in the assay. It is safe to say that companies that have rejoined the antibiotic game are eager for new sources of natural products.

PAYLOADS FOR ANTIBODY-DRUG CONJUGATE (ADC)

A prime example where functional activity is a required starting point for pharmaceutical discovery is in the search for cytotoxic agents for antibody-drug conjugate (ADC) approaches to cancer chemotherapy. ADCs work by using monoclonal antibodies to selectively deliver cytotoxic agents (payloads) to specific tumor cells. The number of payload molecules that can be delivered per cell by the ADC is small so the payloads must be exquisitely potent in order to eradicate the tumor. This approach to cancer chemotherapy is growing rapidly with hundreds of clinical trials in progress. At least 90% of the ADCs are armed with natural products-derived toxic payloads as these compounds have proven to be the most potent. However, the arsenal of payloads is very limited; DNA-damaging agents such as calicheamicin and tubulin interactive agents related to dolastatins (e.g. auristatin) dominate the field. Therefore there is a strong push to find new super-potent agents that act through different mechanisms as payloads to overcome resistance. To date, natural products have this market cornered.

GENOMICS

The rapid advance in DNA sequencing technologies has elevated genome mining from an esoteric experiment into a mainstream path for finding new metabolites. The launch of Warp Drive Bio LLC in 2012 should be recognized as a seminal event in the evolution of natural product-based drug discovery. By coupling of the promise of novel natural products with emerging genomic tools, the founders of Warp Drive created an opportunity for drug discovery that was attractive to tech-savvy investors. The continuing multi-$100M deal between Sanofi and Warp Drive provides strong evidence that natural products are highly attractive as sources for drug discovery, especially *when linked with a novel technology.*[3] The flipside is also quite clear: there is much less enthusiasm for the traditional natural products "grind & find" platform.

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The difference today is that more fully elaborated molecules are needed to fit with new screening concepts. Required are libraries of "leads" versus libraries of "hits," in order to elicit positive responses in functional assays.

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OUTLOOK

It is fair to say that many Pharma companies have niche areas where novel natural products could have a substantial impact as starting points for drug discovery and development. However, there are usually caveats associated with Pharma's desire to include natural products in their screening campaigns. Chief among these are that the samples should consist of single pure compounds with assigned structures arrayed in a convenient screening format. In addition, there should be adequate material in reserve (hundreds of mg) for follow up testing and analog generation. This chemistry, no matter what the source or how precious, is still treated as a commodity by Pharma where screening collections consist of many thousands of compounds. This mindset requires some adjustment in the natural products scientist's attitude. Our beloved and highly prized new compound is treated just like any other chemical. The requirements for pure compounds and material in reserve pose real challenges for typical small-scale natural product discovery platforms, so what are we to do? How do we get our chemical gems into Pharma where they have the opportunity to show their value against novel targets for new types of therapy?

There is no easy answer and success will depend on some attitude adjustment on the part of natural product scientists. As always, the importance of compound supply cannot be minimized. There simply has to be a path to obtain hundreds of mg of material in a reasonable timeframe to get the attention of Pharma researchers. In my opinion, this aspect of pharmaceutical R & D is still under-appreciated by many natural products practitioners. The notion that the discovery of a scarce novel natural products with intriguing biological activity will trigger heroic efforts to produce the compound is a myth. In reality, for early-stage drug discovery there is rarely enough data to justify "heroic" efforts, and Pharma will typically have other options including alternative lead compounds. There are obviously some notable exceptions like the production of eribulin by Eisai Inc., and there is reason for optimism as advances in synthetic chemistry proceed at a rapid pace. The bottom line here is that the natural products community should devote greater effort to practical methods for compound supply if we are to achieve greater impact in Pharma.

OPEN ACCESS OPTIONS

In the past five years, Pharma has launched programs aimed at accessing novel chemistry for its most challenging drug targets. These programs, usually called "open innovation," can be useful to the natural products community by offering a means to obtain biological activity data beyond the capabilities of individual labs.[4]

Since most natural products discovery today takes place in small companies and academic labs, the biological profiles of these compounds are limited to data from a few assays. While this amount of data may be sufficient for the current program of investigation and will at least support publication of the structure with a specific activity, that may well be the end of the story. Typically the remaining sample of isolated compound goes in the freezer and unless it is subsequently isolated by another group for a different biological assay, the biological potential of the compound is not further explored. A limited number of natural products with intriguing structural features will be subjects of synthetic programs that may be able to generate sufficient material for additional biological testing, but this is a very small percentage. So rather than leaving the compound to slowly decompose in the freezer, why not submit a few milligrams to an open innovation program sponsored by Pharma? Under the terms of these testing agreements, the investigators retain rights to the compounds and have the opportunity to score some highly significant biological results. Any hits in such high-profile assays will result in greater impact for the natural products, whether through further development or eventual publication. I believe that more high profile natural products hits that are generated through these open access platforms will result in a greater appreciation of natural products as leads in Pharma.

So the answer to the question posed in the title is a qualified YES and mainly in fairly narrow niche applications at the present time. The good news is that small companies and academic groups have the freedom to explore new technologies yielding new chemistry that may well be of broader interest to Pharma. Challenges remain, but these are not insurmountable. We need to continue to push the envelope beyond the analytical scale and to more fully characterize the biological potential of our compounds. ■

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4 See for example Lilly's Open Innovation website: openinnovation.lilly.com/.

Hot Topics in Pharmacognosy: Fungal Taxol and Its Role(s) in the Yew Tree

By Dr. David J. Newman

As has become obvious over the last few years, there have been some very interesting papers demonstrating that there are fungal endophytes in a variety of plants that when isolated and then fermented outside of the plant, and in some cases, when supplemented in those fermentations with either plant or microbial extracts, increased yields have been seen. However, until very recently, these were considered by a large number of botanists and some natural product chemists, as being artifacts and not related in any way to production of taxol by fungal genes. Comments such as "carry-over," "no complete genomic characterizations," etc., were made both in press and verbally at meetings when these possibilities were discussed and/or presented.

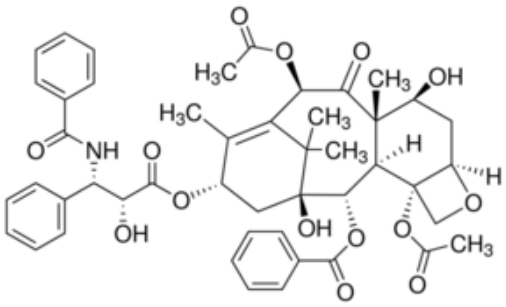
...the paper by Soliman now opens up the topic of fungal production of taxol as a protective mechanism for the tree when attacked by wood rotting fungi.

A recent paper in *Current Biology* by Soliman et al..[1] has now thrown open an entirely new possibility that covers the production of fungal taxol in the yew with experimental evidence of its role as a protective agent. From the early days of studying fungal tubulin, though at the time the actual protein was not identified, it was subsequently realized that antitubulin agents were excellent antifungal agents as first demonstrated by Hastie in 1970 with benomyl[2] and then further developed in later papers from Hastie's group in 1976[3] and with more details given in a 1986 publication in *Annual Reviews of Phytopathology* in 1986.[4] Obviously in the intervening period the results of Horwitz's studies were published in *Nature* in 1979[5] showing the mechanism of action of the cytotoxin taxol, first reported by Wani et al. in 1971.[6]

However, the paper by Soliman now opens up the topic of fungal production of taxol as a protective mechanism for the tree when attacked by wood rotting fungi. Not being a botanist, I will have to accept at face value the report in this paper that in the branch growth of *Taxus*, cracks occur in the protective bark layer that allow in pathogenic fungi (wood rotting fungi for example). In an excellent series of clever experiments, Soliman and colleagues demonstrated that the endophyte *Paraconiothyrium* strain SSM001 present in the tree migrated to the "cracks" and other pathogen entry points and effectively laid down an antifungal carpet of taxol. The fungal taxol was produced by the fungus and then sequestered within the fungus in intracellular hydrophobic bodies. When the presence of an invader was "sensed" (which had to be a chemical signal analogous to a quorum sensing agent, think pheromone in human terms), the hydrophobic bodies were release via exocytosis, laying down the "antifungal carpet."

In a further series of elegant experiments, Soliman et al. demonstrated that fungal taxol did not interfere with the plant's own metabolism if in the hydrophobic bodies, whereas in their absence, taxol inhibited plant cell growth as would be expected. In addition, the endophyte was insensitive to taxol. This brings up the interesting point that taxol, when isolated from the yew tree, is found generally in the outer stem wood and particularly in the bark. If one thinks about this from a hydrodynamic perspective, taxol may be sequestered in areas of the tree where it will not get back into areas of growth. Its presence in the leaves may well be due to the presence of taxol-producing endophytes in these organs.

Taxus brevifolia



Taxol

What was also of significant interest was a series of experiments reported in the paper that demonstrated that supplementation of the endophyte's ex-planta fermentation with chitin or in particular, methyl chloride (chloromethane), a known fungal metabolite of wood decaying fungi from metabolism of lignin, induced a significant increase in production of taxol in the fermentation.

Soon after the paper referred to above was published, Zhang et al.[7] published a very interesting paper on a genetic analysis of the micro-

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bial consortium found in the roots of *Taxus chinenis* where they showed 187 operational taxonomic units including fungi with the necessary genes to produce taxol if the methodologies to induce expression were available. They allude to genetic evidence that the gene clusters in microbes for taxol production might differ from the plant, which is similar to the report by Yang et al.[8] that reported that the genes involved in taxol production by the endophyte *Penicillium aurantiogriseum* NRRL 62431 differed from those in the plant. Further discussion of the role of microbes in taxol production can be seen in the 2014 review by Gond et al.[9] and also discussed by Newman and Cragg in 2015 in a *Frontiers in Chemistry* article.[10]

Thus the various role(s) of taxol in the plant and the microbe may differ or may simply be successive operations in the protection of the plant from predation by fungi. It would be interesting to see a report of the microbial content of the callus cultures used in the plant cell culture production of taxol on an industrial scale, but so far nothing has been reported on this topic as far as can be determined. ■

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Meet a New ASP Member

Our featured new ASP member, Dr. Michael Spiteller, is Head of the Institute of Environmental Research (INFU) at the Technical University of Dortmund, Dortmund, Germany. Dr. Spiteller was also the recipient, together with co-authors, of the 2014 Schwarting Award for the paper entitled, "Endophytes are hidden producers of maytansine in Putterlickia *roots" in* J. Nat. Prod. ***2014***, *77, 2577-2584. We are grateful to Dr. Spiteller for sharing his enthusiasm for both endophytic fungi and cars with us, and we welcome him to the ASP.*

By Dr. Dan Kulakowski

How did you hear about the ASP?
Quite a while ago, I searched for *Journal of Natural Products* on the internet and just by chance discovered ASP.

Why did you join ASP?
I joined ASP because it is an international-oriented society which covers a broad spectrum of different disciplines. It also has Annual Meetings at different places all over the world. The membership increases the chance for potential collaboration and exchange of ideas. Furthermore, it is always exciting to meet people known only from the literature.

Dr. Spiteller in the field.
DR. DENNIS ECKELMANN

Do you belong to any other scientific societies?
I have been a member of the German Chemical Society (GDCh) for over 30 years.

What are your current research interests in pharmacognosy?
With my background in analytical chemistry, I am always interested in applying the latest technology available. Currently, we are looking at plant-endophyte interactions at the cellular level using matrix assisted laser desorption/ionization (MALDI) imaging mass spectrometry, in addition to the comparison of endophytic/plant gene expression to understand the communication between plants and associated organisms. What are the signaling molecules? What are the mechanisms to turn them on and off? What are the organismal triggers and modulators and how do they benefit from each other?

What is your scientific background?
I studied chemistry at the University of Göttingen, Göttingen, Germany, and earned my PhD in analytical chemistry and mass spectrometry. At that time, I studied urine samples from patients with inherited diseases, but I was also interested in naturally-occurring substances in urine and their possible origin. Later, I changed to the department of soil science, did some work on soil humus nitrogen, and had the opportunity to visit Dr. Morris Schnitzer of Agriculture Canada in Ottawa, Canada, one of the leading scientists in this field. I earned my Habilitation with venia legendi in soil science at the Faculty of Forest Science and was later appointed as group leader at Bayer Inc. There, I was in charge of metabolism studies of newly developed pesticides and their registration. After seven years in industry I returned to academia and, for the last 16 years, have been at the Technical University of Dortmund where I have served as head of the Institute of Environmental Research (INFU) in the Department of Chemistry and Chemical Biology. The current focus is natural product chemistry, structure elucidation of plant constituents from different African countries and plant-microorganism interaction.

What would you like to achieve through your membership?
I think that the ASP is an ideal platform for getting in touch with scientists all over the world and for meeting them at the Annual Meetings. It would be nice to find some new friends with common interests.

What do you like doing in your spare time?
In my spare time, I go skiing and hiking with my son. I also enjoy visiting some friends and having a good time with a glass of wine.

What are you currently reading?
I am currently reading a book on vintage Mercedes cars, many of them produced pre- or post- World War II. As a small boy, I used to live above a car workshop and could see all these cars, and most of them are not available any more. In addition, I just started to read Mr. John Strelecky's *The Why Are You Here Café*, and it is amazing what we can learn from a sea turtle.

What is your favorite organism (to study or for general interest)?
My favorite organism is the first endophytic fungus we discovered that produces the highly-active anticancer compound camptothecin. This organism was isolated from the Indian tree *Nothapodytes foetida* (formerly *Mappia foetida*, Icacinaceae). This endophyte belongs to the genus *Entrophospora*. It is remarkable to discover that an endophytic fungus is able to produce a host plant compound such as camptothecin. ■

It is remarkable to discover that an endophytic fungus is able to produce a host plant compound such as camptothecin.

New Members of ASP 2016

ASP would like to welcome new members. The Society's main objectives are to provide the opportunity for association among the workers in pharmacognosy and related sciences, to provide opportunities for presentation of research achievements, and to promote the publication of meritorious research. New members include 6 domestic full members, 4 international members, and 9 associate members. We look forward to meeting you and learning more about you and your work.

ACTIVE MEMBERS

Mr. Clement Egharevba
Benin City, Nigeria

Mr. Kevin Ergil
Geneva, Nebraska

Dr. Nora Gray
Portland, Oregon

Dr. Joshua Kellogg
Greensboro, North Carolina

Dr. Souvik Kusari
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Florence, Kentucky

Miss Nicola Woods
Glasgow, Scotland

Mr. Maonian Xu
Reykjavik, Iceland

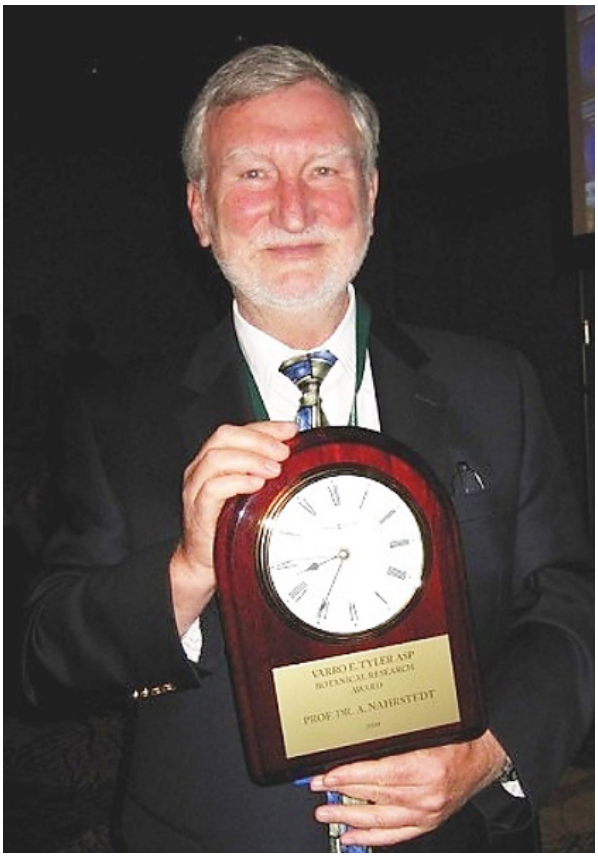
Welcome to ASP!

In Memoriam: Adolf Nahrstedt

By Dr. Veronika Butterweck

The natural products community was saddened to learn of the death of longtime ASP member Dr. Adolf Nahrstedt, University of Muenster, Muenster, Germany, who passed away at age 75 at the St. Franziskus Hospital on January 7, 2016, after a long battle with prostate cancer.

Dr. Nahrstedt was born in Northeim/Harz, Lower Saxony, Germany, on August 9, 1940. After studies of Pharmacy and Food Chemistry, a PhD obtained in 1971, and Habilitation from the University of Freiburg (1976), Freiburg, Germany, he was appointed as an Associate Professor at the Technical University Braunschweig, Braunschweig, Germany. He was full Professor at the University Muenster (1986-2004), Muenster, Germany, where he served as Vice Dean, Dean of the College of Chemistry and Pharmacy, and Vice Dean of the Faculty of Natural Sciences. Beyond his activities as academic teacher and researcher, Dr. Nahrstedt accepted various appointments outside of academia. He was a long-standing member of the Pharmacopoeia Commission of the German health authorities (BGA and later, BfArM), Commission E, and a board member of the German Society of Phytotherapy (GPhyt). He was an honorary member of the European Academy of Natural Medicine, a recipient of the Rudolf Fritz Weiss Award of the GPhyt, and of the Varro Tyler Award of the American Society of Pharmacognosy. He received honorary doctorates from the Ovidius University in Constanta, Constanta, Romania, and the University of Mahasarakham, Maha Sarakham, Thailand.



Dr. Adolf Nahrstedt

Dr. Nahrstedt's research in the earlier years of his scientific career focused on the biochemistry and physiology of secondary metabolites, in particular, the role of cyanogenic glycosides in plants and insects. He then shifted his research interests increasingly towards the phytochemistry of traditional herbal drugs and science-based phytotherapy. Dr. Nahrstedt is probably best known for his major contributions on St. John's wort (*Hypericum perforatum L.*), in particular his studies of the subtle interplay of pharmacologically active compounds with constituents of the "extract matrix." He demonstrated that the coeffectors procyanidin B2 and hyperoside improve the biopharmaceutical properties of hypericin, one of the compounds which contribute to the antidepressant activities of St. John's wort. He studied a number of other important medicinal plants such as *Piper methysticum, Cimicifuga racemosa, Crataegus* species, *Harpagophytum procumbens, Hedera helix, Salix* spp., *Cynara scolymus, Zingiber officinale, Aesculus hippocastanum, Hamamelis virginiana*, and *Chelidonium majus*. He published over 200 research and review articles and numerous book chapters. Also, 50 PhD theses and 2 Habilitations were carried out under his supervision.

Dr. Nahrstedt was an eminent member of the Society of Medicinal Plant and Natural Products Research (GA). He served for many years on the GA Advisory Board where he continuously gave valuable input to the Society. His balanced and thorough opinions on scientific issues in nearly all fields of phytotherapy and phytochemistry were highly respected and appreciated. His most important service

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Dr. Nahrstedt trained us to think critically and independently; he expected us to be solidly grounded in all aspects of phytochemistry and pharmacology, which enabled us to link phytotherapy with other disciplines.

In Memoriam: Dr. Tom J. Mabry (1932-2015)

By Dr. Barbara N. Timmermann

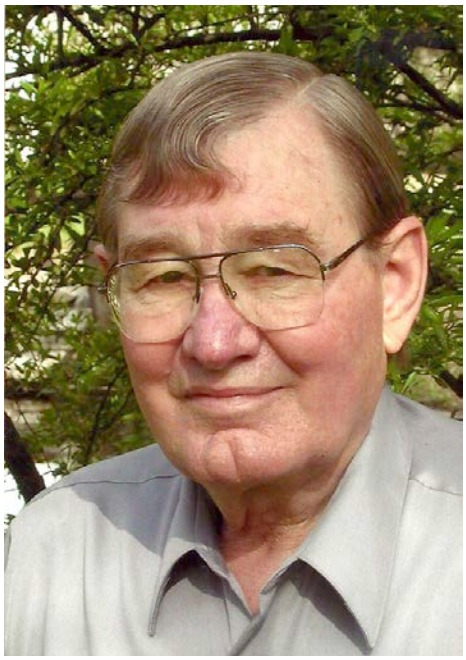
The natural product research community recently lost a dear colleague, mentor, and friend. ASP member Dr. Tom J. Mabry, 83, passed away November 29, 2015, in Austin, Texas. Dr. Mabry had served with distinction at the rank of Professor, Department of Botany at the University of Texas (UT) at Austin, Texas, from 1962 until 2006, when he retired as Professor Emeritus. Born and raised on the outskirts of Commerce, in Northeast Texas, his time was spent outdoors in the fields. This inspired a curiosity about the natural world that led him to study biology and chemistry.

Dr. Mabry earned his BS and MS in Chemistry (1953) from Texas A&M University-Commerce, Commerce, Texas, then worked at Chance Vought Aircraft in Dallas, Texas, before beginning his two years service as a United States Air Force Research Chemist at the Wright-Patterson Air Development Center in Dayton, Ohio. He later moved to Rice University, Houston, Texas, where he obtained a PhD in Organic Chemistry (1960). He began the career in natural products research, for which he is best known, as a postdoctoral fellow at the University of Zürich in Zürich, Switzerland (1960-1962). While there, he solved the structure of the red pigment in such plants as the red beat, cacti, and *Bougainvillea* spp., naming the new class of unique pigments "betalains."

In 1962, he joined the faculty of the Department of Botany at UT Austin where he continued his research for more than four decades, serving as the Chairman of the Department of Botany (1980-1986), and then continuing in the Section of Molecular Cell and Developmental Biology upon restructuring of the School of Biological Sciences. Under Dr. Mabry's leadership, the botany program reached the number one national ranking and he was responsible for establishing several important endowed faculty positions. In 1986, his interests in biotechnology led to his appointment as a Jack C. Wrather Centennial Endowed Fellow at UT Austin's IC2 Institute.

Throughout his notable career, Dr. Mabry's pioneering phytochemical research has contributed significantly to the understanding and analysis of the chemistry, distribution, biogenesis, and medicinal value of a number of natural products, including flavonoids, betalains, alkaloids, terpenoids, neurotoxic non-protein amino acids, antiviral proteins, and phytoalexins.

Overall, Dr. Mabry was unbelievably productive, having produced more than 700 research publications, most in leading journals including the *Journal of Natural Products, Phytochemistry, Planta Medica, Journal of Chromatography, Tetrahedron* and *Journal of Organic Chemistry*. He authored or co-authored 15 technical books on a number of different topics, most in natural product chemistry and plant biotechnology. He is the co-author of two classics: *The Systematic Identification of Flavonoids* as well as *Sesquiterpene Lactones- Chemistry, NMR and Distribution.* These books continue to be standard references in pharmacy and phytochemical research laboratories around the world and among the most cited books in the plant chemistry literature.



Dr. Tom Mabry

Apart from the high quality of his own work, Dr. Mabry had a major impact in the training of undergraduate and graduate students, many of whom have gone on to have highly successful careers in academia and the biotechnology industry in their own right. He supervised to completion more than 70 PhD and MS students. For over four decades, a large number of postdoctoral researchers and visiting sci-

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Throughout his notable career, Dr. Mabry's pioneering phytochemical research has contributed significantly to the understanding and analysis of the chemistry, distribution, biogenesis, and medicinal value of a number of natural products, including flavonoids, betalains, alkaloids, terpenoids, neurotoxic non-protein amino acids, antiviral proteins, and phytoalexins.

In Memoriam: Adolf Nahrstedt

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to GA, however, was undeniably his editorial activities for the official journal of GA, *Planta Medica.* Dr. Nahrstedt was associated with the journal for more than 30 years, first as co-editor (1983 – 1992), later as editor-in-chief (1993 – 2004), and until his death, as senior editor (2005 – 2015). In recognition of his outstanding service, the GA bestowed him in 2005 with an honorary membership.

I consider it as a great honor that I had the privilege of being one of Dr. Nahrstedt's students. Dr. Nahrstedt trained us to think critically and independently; he expected us to be solidly grounded in all aspects of phytochemistry and pharmacology, which enabled us to link phytotherapy with other disciplines. This was an excellent training for entry into academic or pharmaceutical research. All his former students are extremely grateful, not only for his outstanding scientific mentorship, but also for his exceptional personal support.

Despite his illness, he remained scientifically active almost until the last day of his life. Last December, shortly before he was hospitalized, we had a very enthusiastic discussion about his favorite topic: *Planta Medica,* the journal that meant so much to him for more than 30 years.

Many scientists may have benefited from his work, but I, and many of others who knew him, are eternally grateful to have known him as a person. Having him by my side for so many years as a teacher, mentor and devoted friend truly meant a lot to me. Dr. Nahrstedt will be deeply missed in the scientific community, not only as a great colleague, but also as a true friend. ■

Many scientists may have benefited from his work, but I, and many of others who knew him, are eternally grateful to have known him as a person.

In Memoriam: Dr. Tom J. Mabry

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entists from around the world worked in his laboratory, which brought high international recognition to the Department of Botany at UT.

Dr. Mabry was organizer and first president (1966-1968) of the Phytochemical Society of North America (PSNA), and for the first conference, he initiated the long-running series of the PSNA volumes known as *Recent Advances of Phytochemistry*.

While many other colleagues have made significant contributions in a specific area of natural products chemistry, Dr. Mabry has left a legacy at a much broader level being extremely active in botanical chemistry, pharmaceutical and biochemical research. Many prestigious awards and honors have been bestowed on Dr. Mabry during his prolific career. He was the recipient of the ASP Research Achievement Award (2001) and the PSNA Pioneer Award (2011). Other honors over the years include the American Chemical Society Award for the Application of Chemistry to Food and Agriculture (1986), the Pergamon Prize for Phytochemistry (1998), and UT Austin Graduate School's Outstanding Doctoral Teaching Award (1999). Dr. Mabry traveled widely and presented invited lectures all over the world, and he was a favorite speaker in the lecture circuit.

When Dr. Mabry joined the UT faculty in the early 1960s, he was one of the very first chemists in a group of biologists who were excited to study, understand, and enjoy the world of plants around us. At the same time, they were deeply concerned with preserving and protecting the green earth for future generations. I was indeed fortunate to join his research group as a graduate student in 1970 at a time when his lab was buzzing with new ideas and techniques and remarkable international postdoctoral researchers and visiting professors who were organic chemists and biochemists. Over the years, my condition as a student changed into that of a friend and family member. Dr. Mabry had a great and generous heart, wanting no accolades from others, but happy when his teaching was "passed on" to the next student. He was pleased to start each day with dreams filled with love and hope. He had a befitting line he liked to repeat, "a man is not old until regrets take the place of dreams." Dr. Mabry will be greatly missed by those of us who still have dreams and the fortune to have been included in his inner circle, Texas-style. ■

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.

Society of Economic Botany 57th Annual Meeting

June 3-9, 2016

Pine Mountain Settlement School

Harlan County, Kentucky

www.econbot.org/index.php?module=content&type=user&func=view&pid=103

The 9th International Countercurrent Chromatography Conference (CCC 2016)

July 30-August 3, 2016

Dominican University

Chicago, Illinois

www.ccc2016.com

1st International Multidisciplinary Conference on Nutraceuticals and Functional Foods

July 7-9, 2016

Kalamata Greece

Tei Peloponnese, New Buildings Amphitheatre

http://www.foodandnutritionjournal.org/conference/international-conference-on-neutraceuticals-and-functional-foods/

Gordon Research Conference: Natural Products

July 31- August 5, 2016

Proctor Academy

Andover, New Hampshire

www.grc.org/programs.aspx?id=11733

9th Joint Natural Products Conference 2016

July 24-27, 2016

Tivoli Congress Centre

Copenhagen, Denmark

www.jnpc2016.dk

John Innes – Rudjer Bošković Summer Schools on Applied Molecular Microbiology:

"Microbial Diversity and Specialised Metabolites"

September 10-18, 2016

Inter-University Centre

Dubrovnik, Croatia

http://www.jic.ac.uk/science/molmicro/summerschool/index.htm

Brief News From Washington
Natural Products in the Spotlight

By Dr. Georgia Perdue

- **There was great joy at the National Institutes of Health (NIH) on December 18, 2015, when President Obama signed the funding bill for FY 2016, giving NIH a $2 billion increase to $32 billion, its biggest increase in 12 years.** Dr. Francis Collins, NIH director, said in a statement, "this is the most encouraging budget in 12 years….I applaud the bipartisan support for NIH and biomedical research that made this possible, and want to particularly thank the leadership of the House and Senate. I welcome this development with a sense of gratitude."
- Other generous funding increases in the **FY 2016 budget** include the **Food and Drug Administration (FDA)**, from $2.6 billion to $2.7 billion, and the **National Science Foundation (NSF)** from $7.3 billion to $7.5 billion.
- On December 12, 2015, the National Institute of Allergy and Infectious Diseases (NIAID) announced it had awarded approximately **$5 million in funding for 24 research projects to develop nontraditional therapeutics or therapeutic alternatives to traditional antibiotics which will help the growing threat of antibiotic resistance.** These new NIAID grants will help researchers develop "unique nontraditional therapies that could complement or even replace currently available antibiotics that are losing effectiveness." One nontraditional approach uses "good bacteria found in or added to the human microbiome to target or control the growth of harmful bacteria." "Another alternative approach is bacteriophage or phage therapy [using] viruses that… affect only bacteria to reduce or eliminate bacteria in humans." (The long list of these interesting projects, including industry and academia, can be found on the NIAID website: https://www.niaid.nih.gov/Pages/default.aspx).
- Everyone has heard the President's announcement in his State of the Union address, the **cancer "Moonshot,"** i.e., a war on cancer, reminiscent of President Richard Nixon's 1971 "War on Cancer" effort. It appears that Vice President Biden called for such an effort after his son died of brain cancer last year. One writer in the *Washington Post* noted that "…there is no true 'moonshot' approach to tackling the nation's second-leading cause of death." The American Enterprise Institute noted that "only private industry, free from political pressures, has the culture skills and financial wherewith all…the entrepreneurial spirit… free from political meddling and insider favoritism to deliver better cancer treatments and cures…." **Many cancer specialists say "big ideas might push the boundaries of research and therapy."** A highly respected cancer researcher, Assistant Professor Vinay Prasad, at Oregon Health and Science University, Portland, Oregon, penned an insightful article, **"What a true cancer 'moonshot' entails." This pullout is noteworthy: "The problem with a surge of concentrated effort to tackle cancer is that it does not fit the way that medical progress occurs."** (The original article appeared online at *TimesReporter.com* on February 2, 2016: http://www.timesreporter.com/article/20160202/OPINION/160209989.)
- **(NCI) Acting Director Dr. Douglas Lowy issued a statement about the "Moonshot" effort** saying, "NCI stands ready to continue to work with our partners across the cancer research community toward the goals we all share…. **I believe we have within our reach real opportunities to prevent, successfully treat, or even eliminate many forms of cancer…."** He and NIH Director Dr. Collins joined the Vice President at the University of Pennsylvania Abramson Cancer Center, Philadelphia, Pennsylvania, to discuss the effort. The Vice President also went to the World Economic Forum annual meeting in Davos, Switzerland, to hear from worldwide cancer experts.
- In early February 2016, the President launched the **White House Cancer Moonshot Task Force**. Its purpose is to remove any regulatory barriers to developing new cancer treatments. **Members of the task force, chaired by Vice President Biden, include the FDA Commissioner, Department of Health and Human Services (HHS) director,**

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NCI director and NIH director. NIH will fund the task force. A report to the President is due before the end of the year. It has been suggested that an "innovations czar" be appointed.

- **FDA approved a non-alcohol formulation of the cancer drug docetaxel (Taxotere®)** because some patients may be adversely affected by the alcohol. The drug is used to treat patients with different cancers: breast, non-small cell lung, head and neck, prostate and adenocarcinoma.
- In December 2015, the FDA announced it has created an Office of Dietary Supplement Programs (ODSP), elevating its previous status of a division. "… [this] will enhance the effectiveness of … regulation because ODSP will [be able to] better compete for government resources and capabilities to regulate this rapidly growing industry."
- Also in December 2015, **FDA approved a Chinese herbal medicine for clinical trials**, ***Astragalus* spp. root, or milkvetch root.** The active ingredient, astragali, contains polysaccharides and flavonoids. **It is used in China to treat flu symptoms.**
- At the December 2015 NIH Director's Advisory Committee to the Director meeting, Dr. Collins noted that NIH is "working more closely than ever" with the Bill & Melinda Gates Foundation, which he noted, "makes sense." There are 10 working groups focusing on different areas including malaria and tuberculosis. "I want to get Bill involved; he is a science junkie at heart, so maybe at the next meeting in April [we will do it]."
- NIAID announced in late January 2016 that **in certain Cambodian provinces, the first-line treatment for malaria, a combination of dihydroartemisinin-piperaquine, had failed due to resistance by the parasite to the drugs. Researchers are now considering using the combination of artesunate and mefloquine in the above areas.**
- In a press release in late January 2016, the **NSF noted that Arizona State University, Tempe, Arizona, scientist Dr. Lynda Williams and Dr. Keith Morrison, at Lawrence Livermore National Laboratory, Livermore, California, have found that [green and blue] clays, plentiful in nature, possess germ killing abilities….** A new discovery shows **"two specific metallic elements in the right kinds of clays can kill disease causing bacteria that infect humans and animals."** The discovery of how the clays' antibacterial action works could lead to alternative ways of treating persistent infections and diseases that are difficult to treat with antibiotics. "Finding out **how natural clays kill human pathogens," says Williams, "may lead to new economic uses of such clays and to new drug designs."** (See *ASP Newsletter* Spring 2015; Natural Science Reports, January 26, 2016).
- **The administration wants to appropriate $1.8 billion to respond to the Zika virus domestically and internationally.** Congress still has to vote on it. While transmission of the Zika virus by mosquitoes has not been detected within the continental United States, Puerto Rico and other parts of the Americas and South America have reported infections. The fear is that as spring and summer approach, larger mosquito populations will be more active, especially in the southern parts of the United States; this will raise concerns of local transmission of the Zika virus. **The $1.8 billion would be allocated as follows:** HHS, $1.48 billion, which includes NIH to develop a vaccine, (NIAID is already working on this), FDA, USAID $335 million, State Department $41 million to support the World Health Organization (WHO), and Pan American Health organization (PAHO). **Sanofi SA will be starting Zika vaccine research; Merck & Co., Takeda Pharmaceutical Company Ltd., Johnson & Johnson, and Pfizer are on board.** In addition, **research institutions worldwide have agreed to share their data, including the Bill & Melinda Gates Foundation, United Kingdom's Academy of Medicine, WHO, France's Institute Pasteur and the Wellcome Trust.** (Some information from Reuters).
- Effective January 10, 2016, NIH raised the maximum allowable direct salary for a grantee or contractor from $183,300 to $185,100.
- **The confirmation by the Senate of Dr. Robert Califf to be the new FDA Commissioner finally happened on February 24, 2016, by a vote of 89-4. His confirmation had run into some playing-politics roadblocks.** At the end of January 2016, **Senator Bernie Sanders (D-VT)** put a hold on the nomination because of Dr. Califf's perceived close ties to the pharmaceutical industry. **Senator Joe Manchin (D-WV**) filibustered the nominee for his [perceived] **strong ties to the pharmaceutical industry and not being tough enough on the opioid problem. Senator Edward Markey (D-MA) held up** the full Senate vote because **he wants FDA to change its approval process for opioid pain killers and to form an advisory committee to deal with this problem.** FDA responded on February 5, 2016, saying the agency plans to reassess its approach to this problem. ■

The administration wants to appropriate $1.8 billion to respond to the Zika virus domestically and internationally. Congress still has to vote on it.

From the Archives: The Quest for a Pharmacognostic Journal

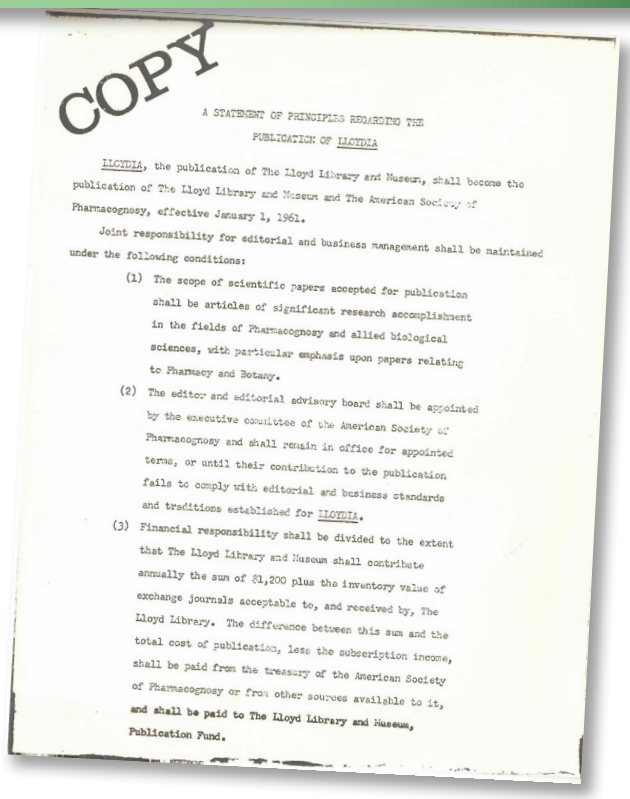
By Ms. Devhra BennettJones

The American Society of Pharmacognosy (ASP) boasts numerous achievements in its 57 year history. Preeminent among the Society's triumphs is the joint publication (since 1996) with the American Chemical Society of the *Journal of Natural Products* (*J. Nat. Prod.*). Boasting an impact factor of 3.798, *J. Nat. Prod.* is devoted to publishing the research of natural product chemists, biochemists, pharmacologists, taxonomists, and ecologists.[1] Since 1993, the *J. Nat. Prod.* has grown and prospered under the leadership of Editor-in-Chief Dr. A. Douglas Kinghorn. While seasoned ASP members may know about the *J. Nat. Prod.* evolution, for new Society members the journal's inception is a notable history.

The origin of the *J. Nat. Prod.* was the journal *Lloydia*, published by the Lloyd Library and Museum, 1938-1961. The path to ASP editorship is well formed in the words of the inaugural Society President, Dr. Varro E. Tyler. In 1960, he wrote to potential and existing ASP members, "The American Society of Pharmacognosy is extremely interested in founding a publication devoted to this science and negotiations are currently being carried out with the University of Pittsburgh Press and with several other publishers for the establishment of such a scholarly publication. Patron memberships are urgently needed to finance this effort. Your support of the Society in its effort to publish worthwhile contributions to the science of pharmacognosy will be sincerely appreciated."[2]

Tyler and the ASP leaders accomplished this goal within the year. Tyler took great pride in the announcement in his Presidential address on July 2, 1960 at the first Annual Meeting in Boulder, Colorado.

> You have already heard the presentation of Dr. Farnsworth, Vice-President of our Society and Chairman of the Committee on Publications, in which he reported the efforts made to establish a journal of pharmacognosy and the opportunity which has presented itself for our organization to assume the editorship of *Lloydia.* This arrangement… will give us a medium for publication of our research efforts which is under the direct editorial supervision of our Society ….the Society is now in the position to offer you a publication devoted to pharmacognosy as a further means of encouraging the dissemination of your specialized knowledge. In other words, we have the tools; now we must use them…. There are those that accuse us, as pharmacognosists, of weakening pharmacy's house by separating from it through the formation of our own organization and the attempt to establish our own publication. I believe that I speak for all those who had anything to do with the forming of the American Society of Pharmacognosy when I say that this possibility was given thorough consideration prior to our founding and dismissed as inconsequential. Our purpose is not to divide and conquer but to organize and strengthen…Frankly, I anticipate that existing pharmacy journals will welcome a new entry in our specialty field, since they are so far behind in their publication schedules already that there appears to be no possibility of ever getting caught up. The power of our federal government is not lessened by the measures of internal sovereignty delegated to the individual states. So it will be with pharmacy and pharmacognosy.[3]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A STATEMENT OF PRINCIPLES REGARDING THE PUBLICATION OF LLOYDIA

LLOYDIA, the publication of The Lloyd Library and Museum, shall become the publication of The Lloyd Library and Museum and The American Society of Pharmacognosy, effective January 1, 1961.

Joint responsibility for editorial and business management shall be maintained under the following conditions:

(1) The scope of scientific papers accepted for publication shall be articles of significant research accomplishment in the fields of Pharmacognosy and allied biological sciences, with particular emphasis upon papers relating to Pharmacy and Botany.

(2) The editor and editorial advisory board shall be appointed by the executive committee of the American Society of Pharmacognosy and shall remain in office for appointed terms, or until their contribution to the publication fails to comply with editorial and business standards and traditions established for LLOYDIA.

(3) Financial responsibility shall be divided to the extent that The Lloyd Library and Museum shall contribute annually the sum of $1,200 plus the inventory value of exchange journals acceptable to, and received by, The Lloyd Library. The difference between this sum and the total cost of publication, less the subscription income, shall be paid from the treasury of the American Society of Pharmacognosy or from other sources available to it, and shall be paid to The Lloyd Library and Museum, Publication Fund.

A Statement of Principals Regarding the Publication of *Lloydia.*

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[1] *Journal of Natural Products*, published by American Society of Pharmacognosy and American Chemical Society, Researchgate.net, https://www.researchgate.net/journal/0163-3864_Journal_of_Natural_Products

[2] Varro E. "Tip" Tyler Papers, "A Short History of the American Society of Pharmacognosy", 1960, Box 35, Folder 5, Lloyd Library and Museum, Cincinnati, Ohio.

[3] Varro E. "Tip" Tyler Papers, "One Year Of Activities: Report of the President of the American Society of Pharmacognosy Presented to the 1st Annual Meeting, Boulder, Colorado, July 2, 1960", Box 35, Folder 5, Lloyd Library and Museum, Cincinnati, Ohio.

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The new ASP leaders approached the establishment of a pharmacognosy journal with the same due diligence and commitment that they conducted laboratory research, by asking pertinent questions: Is there a real need for the proposed journal?; What would be the title, scope and editorial policy for such a journal?; What methods are available for the Society to publish such a journal?; What costs are involved in the publication of such a journal?; and, What are the sources of financial support for the journal?[4]

Dr. Norman R. Farnsworth led the Ad-hoc Publications Committee investigations into these questions. They sent out 132 questionnaires and received 104 replies. In assessing a need for the journal, the committee found that there were only two journals in 1960 that were primarily pharmacognostic in nature, *Planta Medica* the official journal of the Society for Medicinal Plant and Natural Product Research, and *Farmacognosia*, the official journal of the José Celestino Mutis Institute of Pharmacognosy. In addition to these two journals, there were 34 others that accepted manuscripts for publication dealing with diversified interests in pharmacognosy research. The most commonly utilized journal by ASP members in 1960 was the *Journal of the American Pharmaceutical Association, Scientific Edition*.[5]

The Publications Committee wanted to know the opinions of specific pharmacognosy leaders and organizations about the prospect of a new journal. They contacted 22 leading pharmacognosists in the United States and abroad by letter to determine their perspectives on the feasibility of a new ASP journal. Each letter described the background of the ASP, its organization including the constitution and by-laws, and delineated the scope of the proposed journal. In addition, letters were also sent to individuals at *Planta Medica* and *Farmacognosia* to assess their opinions. Out of the 22 letters, only two replies were not in favor of the Society beginning the publication of a new journal. The respondents elicited expected and surprising viewpoints. Foreign pharmacognosists felt that the Society as an organization would bring together pharmacognosists from all over the world, and that the proposed journal would facilitate unity. They voiced that there was a need to bring all pharmacognosists together in order to improve communication about research activities. In 1960, this need was particularly expressed in the South American countries. Most foreign pharmacognosists indicated that there was only one journal primarily pharmacognostic, *Planta Medica*. They believed that there was room for another journal focused on pharmacognostic research. The respondents voiced strong opinions that the new journal must publish manuscripts in languages other than English. They believed that the ASP and the proposed journal would improve the reputation of the science of pharmacognosy.[6]

The Publications Committee's diligent and comprehensive research on the feasibility of a new pharmacognosy journal set the stage for its fruition. By December 1960, the Society had amended the constitution and by-laws allowing a dues increase which included the journal subscription expense with each membership. In a letter to the Society, ASP Treasurer Frank Crane wrote,

> …the annual dues including the subscription to the official journal of the Society, *Lloydia*, of $8.00 should go into effect with the publication of the first number. I have been informed that the first issue of *Lloydia* under the Auspices of the ASP will be the Spring number of 1961 with publication in March, 1961….We are all looking with eager anticipation to the first issue prepared by Editor Schwarting. If you wish to get further official information concerning the present state of negotiations on our Journal. I'm sure that Norman Farnsworth, Chairman of the Publications Committee, can give you details.[7]

The swelling excitement, curiosity, and numerous inquiries about the new ASP journal were so concentrated that Dr. Norman R. Farnsworth, Ad-hoc Publications Committee Chair, wrote a letter to the membership on January 13, 1961 outlining the extent of the new *Lloydia*.

> Dear Colleagues:
>
> This will be the final communication from the ad hoc Publications Committee appointed by president Tyler over a year ago. As you are all probably aware, negotiations have finally been completed with the trustees of The Lloyd Library and Museum for the American Society of Pharmacognosy to assume editorship and joint publication responsibilities for the journal *Lloydia*.
>
> An editorial staff (the Publications Committee) has been appointed as follows: Editor: Arthur E. Schwarting, Storrs, CT
>
> Editorial Advisory Board: C.J. Alexopoulos, Iowa City,

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[4] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy 1960 Publications Committee Report", p. 1, Box 35, Folder 5, Lloyd Library and Museum, Cincinnati, Ohio.

[5] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy 1960 Publications Committee Report" pp.2-4, Box 35, Folder 5, Lloyd Library and Museum, Cincinnati, Ohio.

[6] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy 1960 Publications Committee Report" pp.5-6, Box 35, Folder 5, Lloyd Library and Museum, Cincinnati, Ohio.

[7] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy. Letter from ASP Treasurer, Frank Crane to the Society, December 1, 1960", Box 35, Folder 5, Lloyd Library and Museum, Cincinnati, Ohio.

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Iowa; W.E. Anderson, Cincinnati, OH; W.H. Camp, Storrs, CT; B. Douglas, Philadelphia, PA; J.W. Fairbairn, London, England; N.R. Farnsworth, Pittsburgh, PA; A.W. Galston, New Haven CT; M.R. Gibson, Pullman, WA; R. Hegnauer, Leiden, Netherlands; R. Paris, Paris, France; F. Sandberg, Stockholm, Sweden; E. Smith, New York, NY; V.E. Tyler, Jr., Seattle, WA; H.W. Youngken, Jr., Kingston, RI; H.W. Youngken, Sr., Boston, MA

The first issue of *Lloydia* to be published under the editorial direction of our Society will be volume 24, No. 1, March 1961. Editor Schwarting has asked me to make the announcement that he is now accepting manuscripts for possible inclusion in the first issue. Articles to be considered must be submitted prior to February 15, 1961.... The Publications Committee of the American Society of Pharmacognosy hope that you will all give editor Schwarting and our official journal your complete support.[8]

The first year of journal publication proved challenging for the young ASP. Correspondence between Drs. Lynn Brady and Norman R. Farnsworth illustrates some of the leadership's frustrations.

Many thanks for your letter of March 20, 1961. I hope that Dr. Orgell comes through with a paper. It really scalds me to think that the response has been so poor up to now. Let's hope that some of the hot shots come through for us. If this is any indication of the output of the "pharmacognosists" in the U.S.A. I imagine that Dr. Schwarting is going to have to really sweat for papers to make the issues of *Lloydia*.[9]

By the summer of 1962 ASP publication of *Lloydia* had triumphed. In his year report to the membership, President Farnsworth wrote,

I am sure that you are all aware of the fine job rendered by Dr. Arthur E. Schwarting, as editor of our official journal, *Lloydia*, during this past year… Editor Schwarting has asked me to thank those members who have submitted manuscripts for publication in Lloydia. During the year January 1, 1961 through December 20, 1961, forty-three (43) manuscripts were submitted. Twenty-five (25) were accepted and published in Volume 24 of Lloydia, twelve (12) were rejected and six (6) are in preparation for Volume 25.[10]

The ASP—Lloyd Library co-publication of *Lloydia* served as a transformative development for pharmacognostic researchers. Through the Society they had direct access to a scientific journal devoted to their expertise. The prolific research and writing of pharmacognosists influenced *Lloydia*'s publication schedule. While it was originally a quarterly publication, *Lloydia* became bimonthly in 1975. In 1979, under the Editorship of Jack L. Beal, the title was changed to the *Journal of Natural Products*. Editor James E. Robbers moved the *J. Nat. Prod.* to a monthly publication in 1992. Today's *J. Nat. Prod.* Editor-in-Chief A. Douglas Kinghorn began his stewardship in 1993. At that time he also served on the negotiating team representing the ASP in the collaboration with the American Chemical Society (ACS) and the ASP's co-publication of the *J. Nat. Prod.*, culminating in 1996. The *J. Nat. Prod.* has grown and prospered under Dr. Kinghorn's leadership. In 2000, ASP President Jim Gloer's "President's Message" credited the excellence of the *J. Nat. Prod.* in the Society's membership growth to over 1,100. From the ASP's initial publication of *Lloydia* Volume 24(1), to the present *J. Nat. Prod.* Volume 79(3), the Society's members can take great pride as the number of citations and impact factor have risen over the past 57 years. ■

[8] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy. Letter from ASP Ad-hoc Publications Committee Chair, Norman R. Farnsworth to the Society, January 13, 1961", Box 35, Folder 6, Lloyd Library and Museum, Cincinnati, Ohio.

[9] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy. Letter from Norman R. Farnsworth to Lynn Brady, March 28, 1961", Box 35, Folder 6, Lloyd Library and Museum, Cincinnati, Ohio.

[10] Varro E. "Tip" Tyler Papers, "American Society of Pharmacognosy. Letter from ASP President Norman R. Farnsworth to the Society, April 2, 1962", Box 35, Folder 7, Lloyd Library and Museum, Cincinnati, Ohio.

[11] *American Society of Pharmacognosy Newsletter,* Volume 35, No. 4, Winter 2000, p. 6, http://www.lloydlibrary.org/archives/ASP%20Newsletters/ASPNV35N4.pdf

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ASP Membership

Full Membership

Full membership is open to any scientist interested in the study of natural products.
Current membership dues and Journal of Natural Products subscription rates can be found at **www.pharmacognosy.us**.

Associate Membership

Associate membership is open to students of pharmacognosy and allied fields only. These members are not accorded voting privileges.
Current membership dues and Journal of Natural Products subscription rates can be found at **www.pharmacognosy.us**.

Emeritus Membership

Emeritus membership is open to retired members of the Society who maintained membership in the Society for at least five years.
Current membership dues and Journal of Natural Products subscription rates can be found at **www.pharmacognosy.us**.

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:

Dr. John H. Cardellina · Dr. David P. Carew, University of Iowa · Dr. John M. Cassady, Oregon State University
Dr. Geoffrey A. Cordell, University of Illinois at Chicago
Dr. Gordon C. Cragg, National Institutes of Health · Dr. Harry H.S. Fong, University of Illinois at Chicago
Dr. William Keller, Nature's Sunshine Products, Inc. · Dr. A. Douglas Kinghorn, Ohio State University
Dr. Robert J. Krueger, Ferris State University · Dr. Roy Okuda, San Jose State University
Dr. James E. Robbers, Purdue University · Dr. Yuzuru Shimizu, University of Rhode Island
Dr. E. John Staba, University of Minnesota · Dr. Otto Sticher, Swiss Federal Institute of Technology
Dr. Hildebert Wagner, University of Munich · Dr. Mansukh Wani, Research Triangle Institute

Additional information about membership may be obtained by writing to the Treasurer of the Society:
Jim McAlpine, PhD, Treasurer, The American Society of Pharmacognosy,
3149 Dundee Road, #260, Northbrook, Illinois 60062. Email: jim4asp@gmail.com