Société Phytochimique de L'Amérique du Nord

Sociedad Fitoquímica de América del Norte

Newsletter

● Volume 39, Number 1 ● May 1999 ●

PSNA Executive Committee 1997-98

Dr. Rachel Mata
Past-President, PSNA
Facultad de Química
Univ. Nac. Autónomica de México
Apartado Postal 70-243
Coyoacán 045 1 0, México, D.F., MÉXICO
(5) 622-5289 (phone)
(5) 622-5329 (fax)
rachel@servidor.unam.mx

Dr. Vincenzo De Luca
President, PSNA
Université de Montréal
Institut Botanique
Montréal, QC, CANADA, H1X 2B2
(514) 872-8492 (phone)
(514) 872-3765 (fax)
delucavi@ere.umontreal.ca

Dr. Susan McCormick
President-Elect, PSNA
USDA-ARS-NCAUR
1815 N. University Street
Peoria, IL 61604, USA
(303) 681-6381 (phone)
(303) 681-6665 (fax)
mccormsp@mail.ncaur.usda.gov

Dr. W. Dennis Clark
Secretary, PSNA
Department of Plant Biology
Arizona State University
Tempe, AZ 85287-1601, USA
(480) 965-4482 (phone)
(480) 965-6899 (fax)
dennis.clark@asu.edu

Dr. Cecilia A. McIntosh
Treasurer, PSNA
Department of Biology
East Tennessee State University
Johnson City, TN 37614-0703, USA
(423) 439-5838 (phone)
(423) 439-5958 (fax)
mcintosc@etsu.edu

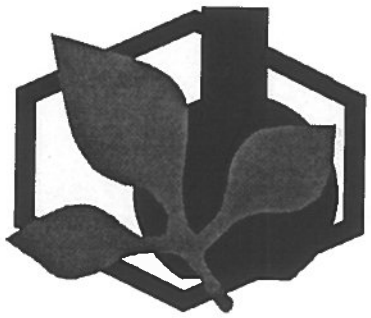
Dr. John T. Romeo
Editor-in-Chief, PSNA
Department of Biology
University of South Florida
Tampa, FL 33620, USA
(813) 974-3250 (phone)
(813) 974-3263 (fax)
romeo@chuma.cas.usf.edu

PSNA Advisory Committee

Dr. James Saunders (1999)
Dr. Kelsey Downum (2000)
Dr. John T. Arnason (2001)
Dr. Nikolaus H. Fischer (2002)

PSNA Newsletter

Editor: **Dr. W. Dennis Clark**



The Phytochemical Society of North America is a nonprofit scientific organization whose membership (currently over 400) is open to anyone with an interest in phytochemistry and the role of plant substances in related fields. Annual membership dues are U.S. $20 for regular members and $10 for student members. Annual meetings featuring symposium topics of current interest and contributed papers by conference participants are held throughout the United States, Canada, and Mexico. Still a specialist organization despite its broadened interests, PSNA meetings are small enough to offer informality and intimacy that are conducive to the exchange of ideas. A newsletter is circulated to members several times a year to keep them informed of upcoming meetings and developments within the society. If you would like additional information about the PSNA or if you have material to be included in the newsletter, please contact the PSNA Secretary. Annual dues and changes in addresses should be sent to the PSNA Treasurer. Also see the PSNA homepage, currently at: http://ls.la.asu.edu/psna.

Table of Contents

From the Editor

The organizing committee of Vincenzo De Luca, Ragai Ibrahim, and Luc Varin have assembled another truly excellent program for PSNA. It is highlighted by the first annual Arthur Neish Young Investigators' Minisymposium and a set of four other symposia on recent topics of interest to all phytochemists. The program summary is included later in this newsletter.

The joy of working in phytochemistry is familiar to us all, and the health of our society and of our discipline depends on the continuing discovery of that joy by young scientists. I've always felt that the PSNA played a significant role for me in the development of my career, starting with my first professional conference at Western Carolina University in 1973. I look forward to our annual gatherings not only because of the excellent scientific content that we all enjoy, but also because of the friendly atmosphere and the chance to renew my phytochemical roots with a group of such good people. I am now especially gratified that the PSNA has the growing resources to foster this kind of development in others through the Arthur Neish Young Investigators' Minisymposium.

President Vincenzo De Luca is the driving force behind the development of the Neish Minisymposium. Dr. De Luca is personally modest, yet he is an accomplished scientist, so I hope he will not be embarrassed at this little bit of publicity. Nevertheless, I encourage all members to commend Dr. De Luca for his efforts. He has laid the groundwork for a vigorous and continuous boost to the appeal of phytochemistry and PSNA to young scientists. We will all benefit from this annual addition to our program for years to come. The essay by Dr. De Luca, included in this newsletter, is an excellent story about the origin and development of the Neish Minisymposium.

Phytochemistry continues to play significant roles in all aspects of biological research, a role that is emphasized by the explanatory power of phytochemical research for molecular biology. This view is reinforced by the main theme of our "Y2K" meeting in 2000: regulation of plant natural products by molecular biotechniques. See the preliminary details for this upcoming meeting on page X.

Please also note that this issue includes a ballot for the election of our next President-Elect. Be sure to vote!

Finally, I once again encourage the membership to send me announcements, photographs, brief comments, and other items of interest to PSNA that would be appropriate to include in the newsletter.

Looking forward to seeing you all in Montréal!

The Editor

1999 Conference Program Summary

Saturday, July 10

9:00-12:00	Registration - Mezzanine Floor, Hall Bldg.
9:30-11:00	PSNA Executive Meeting, Concordia University
12:00-14:00	Welcome Luncheon - Mezzanine Floor
14:00-14:15	Welcome by the hosts, Concordia University and University of Montréal

1st Arthur Neish Young Investigators' Minisymposium:
Biochemistry and Molecular Biology of Brassinosteroid Hormones

14:15-14:45	Professor Arthur Neish - Remembered: Introductions by Peter Hackett (National Research Council, Ottawa) and Neil Towers (University of British Columbia, Vancouver).
14:45-15:15	Brassinosteroids: structures, analysis and synthesis. Jürgen Schmidt, B. Spengler, G. Adam.
15:15-15:45	Biochemical analysis of brassinosteroid signal transduction. Man-Ho Oh, S.C. Huber, D.A. Gage, S.D. Clouse
15:45-16:15	BREAK
16:15-16:45	Molecular and genetic analysis of the brassinosteroid and light signal transduction pathways. Zhiyong Wang, P.C. Roland, C. Lamb, J. Chory
16:45-17:15	Modulation of brassinosteroid biological activity by sulfonate conjugation. Frédéric Marsolais, L. Varin
17:15-18:00	INSTALLATION OF POSTERS - Mezzanine Floor
18:00	FREE EVENING - JAZZ FESTIVAL !

Sunday, July 11

Symposium Session I

Secondary Metabolites and Their Role in Evolution

9:00-9:45	The role of natural products in evolution. Bruce Jarvis
9:45-10:30	Views of the evolution of phenolics in plants. Helen Stafford
10:30-11:00	BREAK
11:00-12:30	**Oral communications I**
12:30-14:30	LUNCH

Symposium Session II

Evolutionary Origins of Polyketides and Terpenes

14:30-15:15 The family of chalcone synthase-related proteins: functional diversity and evolution. Joachim Schröder

15:15-16:00 Combinatorial biosynthesis of polyketides and its role in molecular biosynthesis. Youla Tsantrizos

16:00-16:30 BREAK

16:30-17:15 Aspects of evolution of terpenoid biosynthesis in plants. Jörg Bohlmann

17:15-18:30 **Poster Session I**

Monday, July 12

Symposium Session III

Role of Oxidative Reactions in the Evolution of Secondary Metabolism

9:00-9:45 The functions and evolution of cytochrome P450 in plants. Francis Durst

9:45-10:30 The multifunctional P450s involved in cyanogenic glucoside synthesis and their use in metabolic engineering of plant secondary metabolism. Birger L. Moller

10:30-11:00 BREAK

11:00-11:45 Two oxoacid-dependent dioxygenases: inefficient enzymes or evolutionary driving force ? Andy G. Prescott

12:00-14:00 LUNCH

14:00-16:00 **Oral Communications II**

16:00-16:30 BREAK

16:30-18:00 **Poster Session II**

Tuesday, July 13

Symposium Session IV

Origin of Substitution Reactions Involved in Secondary Metabolism

9:00- 9:45 Biosynthesis of glucose polyesters. John Steffens

9:45:10:30 Evolution of the acyltransferase genes. Benoit St. Pierre, V. De Luca

10:30-11:00 BREAK

11:00-12:30 **Oral Communications III**

12:30-14:30 LUNCH

14:30-15:15 Glycosyltransferases involved in plant secondary metabolism. Thomas Vögt, D. Strack

15:15-16:00 The methyltransferase multigene family: a tree with many branches. Ragai Ibrahim, I. Muzac

16:00-16:30 BREAK

16:30-17:30 **PSNA Annual General Meeting**

19:00-22:00 BANQUET and DINNER

The Arthur Neish Young Investigators' Minisymposium

Over the past several years, many PSNA members stressed the need to develop new approaches for highlighting our Society and for attracting new members. We live in a period where so many Scientific Societies are competing for the same members and where the relevance of a particular Society depends very much on its perceived usefulness. One measure of this usefulness could be the ability of the PSNA to attract and to keep young scientists who are willing to participate in the development of the Society. Another important feature of our Society is its ability attract and maintain the involvement of a significant number of eminent Scientists who may have already retired, but who are still engaged in research and/or are actively participating in its annual meetings. The rich knowledge base supplied by these senior members is one of the unique and attractive features, that has prompted me to maintain my association and involvement with the PSNA over the last 15 years.

Last year we had an important discussion during our business meeting in Pullman, WA, on the future of the PSNA and its focus. The ability of the PSNA to maintain and expand its membership base was a key component of the discussions. It was proposed that we might be able to attract promising young scientists to the PSNA by creating a Minisymposium series that would highlight their research, and become a permanent feature of our annual meetings. In fact, this idea had been proposed several years ago by Kelsey Downum, and I had agreed to organize a Young Investigator Minisymposium that was held in Sault St. Marie, Canada 1995. Although this minisymposum was very successful, the event was not repeated since funding was not available. However, you may note that we are recommencing this event in 1999, which is also the 25th Anniversary after the decease of Art Neish.

The creation of the Arthur Neish Young Investigators' Minisymposium, which would become a permanent feature of our annual meeting, requires a significant fund in order to finance part of the expenses of the participating scientists. I am happy to report that we have received to date over $23,000 in contributions, in part from PSNA ($10,000), and the rest was solicited from Novartis ($5,000), National Research Council of Canada ($5,000 cdn), The Samual Roberts Noble Foundation ($ 2,500) and Pfizer Canada Inc ($3,000 cdn). We have also received a generous contribution of $500 cdn from Mrs. Art Neish who expressed her great appreciation for the manner in which we chose to remember her late husband.

We have raised significant levels of funding towards the goal of having a permanent young investigators' minisymposium, but we are still short by about $25,000. Therefore, I would like to take this opportunity to invite the members of PSNA to make a contribution towards the establishment of this fund. Please send contributions to the PSNA treasurer and clearly mark that they are for the Arthur Neish Young Investigators' Minisymposium. All contributions will be acknowledged on PSNA letterhead, which will serve as your receipt for tax purposes. Suggestions for other potential sponsors (corporate or other) would also be welcome!

Although our membership base is strong (420 members), it is clear that the maintenance and continued growth of our society will depend on initiatives of this kind. The PSNA has a long history of fostering the interests of young scientists in the field of phytochemistry via the student/postdoc travel awards and the best poster/paper awards. The society views having a recurring young investigator symposium as an extension of that mission, and we are looking forward to the first PSNA Arthur Neish Young Investigators' Minisymposium!

Vincenzo De Luca
President, PSNA

PSNA 1998 Financial Report

January 1, 1998 - December, 1998

RECEIPTS

Membership dues	$ 4020.00
Plenum Publishing	
Royalties	5411.47
Page charges on RAP	2478.00
Interest on checking account	15.12
Interest on TN FAIR account	799.22
Rental of mailing list	350.00
1997 meeting refund	NA
1998 meeting refund	1463.18
Arthur Neish Minisymposium Fund	7500.00
Symposium Fund Interest	80.36
CD Interest	877.20
TOTAL RECEIPTS	$ 22,994.95

EXPENDITURES

Executive Committee expenses	
Treasurer (dues notices)	$ 104.20
Directory	730.52
Editor, RAP	1000.00
Secretary	4000.00
Checking account service charges (Peoria)	45.15
Check printing (TN)	30.64
Symposium account service charges	25.00
Pullman meeting advance	7500.00
1998 Best Paper/Poster Awards	500.00
Executive committee travel	711.50
TOTAL EXPENDITURES	$ 16,997.01

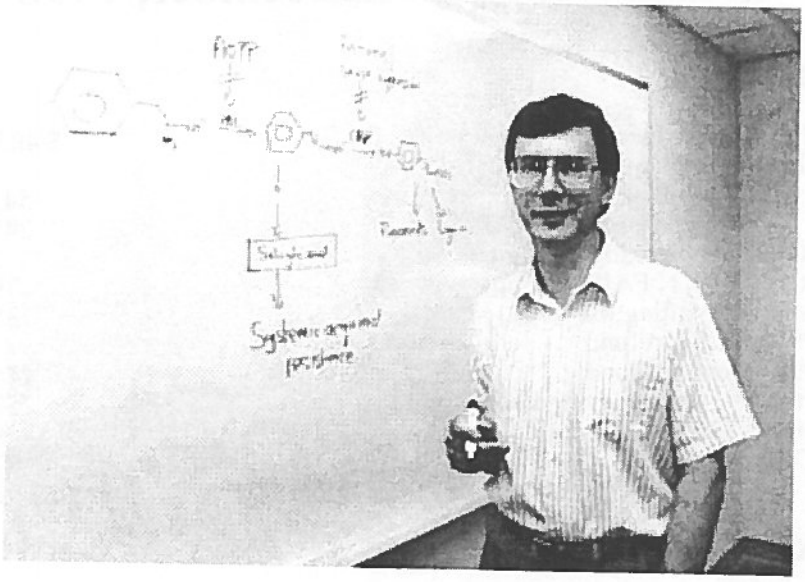
ASSETS

Checking account	$ 2117.33
FAIR account	34426.24
Savings (CDs)	17671.72
TOTAL ASSETS	$ 54,215.29

C. McIntosh, S. McCormick

Nomination for President-Elect

Richard A. Dixon



Dr. Richard Arthur Dixon completed both a B.A. in Biochemistry (1973) and a D. Phil. in Plant Biochemistry at Oxford University (1976). After completing postdoctoral studies between 1976-78 in the Department of Biochemistry at Cambridge University, Dr Dixon accepted a position as Lecturer in the Department of Biochemistry at the University of London where he taught and did research between 1978-85. In 1985 he was promoted to Reader in Plant Biochemistry. In 1988 he became the first director of a newly established Plant Biology Division at the Samuel Roberts Noble Foundation in Ardmore, Oklahoma.

The mission of the Plant Biology Division is to perform both fundamental and applied research on plant-microbe interactions and genetically modify plants for improved disease resistance and production potential. In January 1998, the Plant Biology Division celebrated its 10 year anniversary. Under Dr Dixon's direction the Division has become well-recognized throughout the world, as a center of Excellence in Plant Biology, with remarkable strengths in Plant Microbe Interactions, Arbuscular Mycorrhizal Symbiosis, Host-Virus Interactions, Phenylpropanoid Metabolism, Viral Disease and Plant Antibiotics.

In addition to these considerable duties, Dr Dixon has been on numerous grant committees (USDA and NSF among others) and editorial boards of scientific journals (J. Gen. Microbiol., Plant J., ABB, Transgenic Research, PMB). He has organized a number of international Symposia and he has given over 130 invited research talks since 1988. His expertize on phenylpropanoid metabolism, biochemistry and molecular biology is extremely well recognized by his peers. He has published over 160 papers on this subject and over 250 invited review articles, book chapters and proceedings articles. In addition, he holds adjunct professorships at the Oklahoma State University, University of Oklahoma, University of Texas at Austin and Washigton State University.

PLEASE VOTE BY JUNE 20 (Yes/No) TO: Dr. Jonathan E. Poulton at: Department of Biological Sciences, 534 Chemistry, University of Iowa, Iowa City, IA 52242 or at: jepoultn@vaxa.weeg.uiowa.edu.

2000 PSNA Meeting, Preliminary Announcement

MARK YOUR CALENDARS!

June 19-23, 2000
Agricultural Research Center
Beltsville, MD

"Regulation of Plant Natural Products by Molecular Biotechniques"

Joint Meeting with the Atlantic Plant Molecular Biology Society
Contact: James A. Saunders, Tel. (301) 504-7477, email saund10449@aol.com

---

Other Meetings of Interest

1999 - July 26-31 - **American Society of Pharmacognosy**. International meeting with the Phytochemical Society of Europe, the Gesellschaft fur Arzneipflanzenforschung, and the Association Francaise pour l'Enseignement et la Recherche en Pharmacognosie - Amsterdam, The Netherlands. More info at: http://www.phcog.org/Amsterdam/amsterdam.html

1999 - August 1-7 - **XVI International Botanical Congress**. St. Louis, MO. More info at: http://www.ibc99.org/

1999 - September 6 - 8 - **Saponins in Food, Feedstuffs and Medicinal Plants**. Pulawy, Poland. More info at: www.iung.Pulawy.pl/ptfc/

1999 - November 13-17 - **International Society of Chemical Ecology** in Marseille, France. The meeting will take place at the Hôtel Concorde Palm-Beach located right on the beach, with a wonderful view over the Baie du Prado, les îles du Frioul, le chateâu d' If and le Massif des Calanqu. More info at: http://www.isce.ucr.edu/meetings/99/

2000 - January 13-16 - **Flavour and Fragrance Chemistry**. Campobasso (Molise, Italy). Contact Professor Virginia Lanzotti (lanzotti@unina.it)

2000 - April 2-15 - **Natural Products from the Plants and Marine Organisms of the Mediterranean and Atlantic Seaboard** . Calouste Gulbenkian Foundation, Lisbon (Portugal). Contact Professor A. P. Rauter (aprauter@mail.telepac.pt)

2000 - May 7-10 - **Progress in Phytochemistry. A Young Scientist's Symposium**. Rolduc, The Netherlands. Contact Professor Dr A. W. Alfermann (alferman@uni-duesseldorf.de)

RECENT ADVANCES IN PHYTOCHEMISTRY SERIES

PSNA members receive a 40% discount on the following titles

_____ Volume 32 (1997)	**Phytochemical Signals and Plant-Microbe Interactions** (List $95.00, PSNA $57.00)
_____ Volume 31 (1996)	**Functionality of Food Phytochemicals** (List $114.00, PSNA $68.40)
_____ Volume 30 (1995)	**Phytochemical Diversity and Redundancy in Ecological Interactions** (List $89.50, PSNA $53.70)
_____ Volume 29 (1994)	**Phytochemistry of Medicinal Plants** (List $71.00, PSNA $42.60)
_____ Volume 28 (1993)	**Genetic Engineering of Plant Secondary Metabolism** (List $89.50, PSNA $53.70)
_____ Volume 27 (1992)	**Phytochemical Potential of Tropical Plants** (List $79.50, PSNA $47.70)
_____ Volume 26 (1991)	**Phenolic Metabolism in Plants** (List $89.50, PSNA $53.70)
_____ Volume 25 (1990)	**Modern Phytochemical Methods** (List $85.00, PSNA $51.00)
_____ Volume 24 (1989)	**Biochemistry of the Mevalonic Acid Pathway to Terpenoids** (List $85.00, PSNA $51.00)
_____ Volume 23 (1988)	**Plant Nitrogen Metabolism** (List $89.50, PSNA $53.70)
_____ Volume 22 (1987)	**Opportunities for Phytochemistry in Plant Biotechnology** (List $59.50, PSNA $35.70)
_____ Volume 21 (1986)	**Phytochemical Effects of Environmental Compounds** (List $75.00, PSNA $45.00)
_____ Volume 20 (1985)	**The Shikimic Acid Pathway** (List $55.00, PSNA $33.00)
_____ Volume 19 (1984)	**Chemically Mediated Interactions Between Plants and Other Organisms** (List $45.00, PSNA $27.00)
_____ Volume 18 (1983)	**Phytochemical Adaptations to Stress** (List $49.50, PSNA $29.70)
_____ Volume 16 (1981)	**Cellular & Subcellular Localization in Plant Metabolism** (List $39.50, PSNA $23.70)

Please send the copy/copies marked above.

NEW YORK AND NEW JERSEY RESIDENTS MUST INCLUDE APPLICABLE SALES TAX.
All offers must be prepaid. Major credit cards accepted. Make checks payable to Plenum Publishing Corporation.
PLEASE SUBMIT CHECK OR CREDIT CARD PAYMENT FOR THE TOTAL OF THIS FLYER ONLY.
DO NOT COMBINE WITH PAYMENT FOR ANY OTHER PLENUM PURCHASE.

Type of Card: _____ Expiration date: _____ Account No.: _____

Signature: _____ Name: _____

Address: _____

City: _____ State/Country: _____ Zip/Postal Code: _____

FAX Number: _____ Return To: Plenum Publishing Corporation **ATTN: K. McDonough**
233 Spring Street
New York, NY 10003

Société Phytochimique de L'Amérique du Nord

Sociedad Fitoquímica de América del Norte

Newsletter

● Volume 39, Number 2 ● September 1999 ●

PSNA Executive Committee 1999-2000

Dr. Vincenzo De Luca
Past-President, PSNA
Université de Montréal
Institut Botanique
Montréal, QC, CANADA, H1X 2B2
(514) 872-8492 (phone)
(514) 872-3765 (fax)
delucavi@ere.umontreal.ca

Dr. W. Dennis Clark
Secretary, PSNA
Department of Plant Biology
Arizona State University
Tempe, AZ 85287-1601, USA
(480) 965-4482 (phone)
(480) 965-6899 (fax)
dennis.clark@asu.edu

Dr. Susan McCormick
President, PSNA
USDA-ARS-NCAUR
1815 N. University Street
Peoria, IL 61604, USA
(303) 681-6381 (phone)
(303) 681-6665 (fax)
mccormsp@mail.ncaur.usda.gov

Dr. Cecilia A. McIntosh
Treasurer, PSNA
Department of Biology
East Tennessee State University
Johnson City, TN 37614-0703, USA
(423) 439-5838 (phone)
(423) 439-5958 (fax)
mcintosc@etsu.edu

Dr. Richard A. Dixon
President-Elect, PSNA
Plant Biology Division
The Noble Foundation
2510 Sam Noble Parkway
Ardmore, OK 73401
(580) 221-7301 (phone)
(580) 221-7380 (fax)
radixon@noble.org

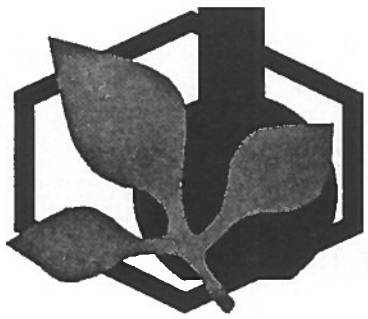
Dr. John T. Romeo
Editor-in-Chief, PSNA
Department of Biology
University of South Florida
Tampa, FL 33620, USA
(813) 974-3250 (phone)
(813) 974-3263 (fax)
romeo@chuma.cas.usf.edu

PSNA Advisory Committee

Dr. James Saunders (1999)
Dr. Kelsey Downum (2000)
Dr. John T. Arnason (2001)
Dr. Nikolaus H. Fischer (2002)

PSNA Newsletter

Editor: **Dr. W. Dennis Clark**



The Phytochemical Society of North America is a nonprofit scientific organization whose membership (currently over 400) is open to anyone with an interest in phytochemistry and the role of plant substances in related fields. Annual membership dues are U.S. $20 for regular members and $10 for student members. Annual meetings featuring symposium topics of current interest and contributed papers by conference participants are held throughout the United States, Canada, and Mexico. Still a specialist organization despite its broadened interests, PSNA meetings are small enough to offer informality and intimacy that are conducive to the exchange of ideas. A newsletter is circulated to members several times a year to keep them informed of upcoming meetings and developments within the society. If you would like additional information about the PSNA or if you have material to be included in the newsletter, please contact the PSNA Secretary. Annual dues and changes in addresses should be sent to the PSNA Treasurer. Also see the PSNA homepage, currently at: http://ls.la.asu.edu/psna.

Table of Contents

From the Editor

Phytochemical research continues to lead the way in providing the basic direction for significant developments in the molecular biology and molecular genetics of plants. The 1999 PSNA conference is a perfect example of how our field is evolving along these lines. The core symposia began with overviews of the roles of secondary metabolites in evolution, which is one of the earliest interests among phytochemists. Subsequent symposia carried the exploration of this topic to new levels based on insights gained by molecular genetics. The momentum of this line of research has accelerated quickly since the first phylogenies were proposed in the 1980s based on the sequences of genes involved in secondary metabolism.

The abundance and complexity of molecular data for evolutionary interpretations form a sensory overload of information. Plants have many 'multigene' families, like that of the methyltransferase genes, which sometimes offer clearer evolutionary explanations and other times offer new challenges that we do not yet understand.

As I listened to the symposium presentations, I became increasingly impressed with the potential power of the molecular biology of secondary metabolism for explaining the 'black box' between genotypes and phenotypes. This is what geneticists have alluded to as the gap between what we see at the genetic level versus what we see as the complete organism. Even the simple genetic control of the classic phenotypic features of Mendel's peas have remained mostly unknown at the molecular level. The long-time exception, of course, has been our knowledge of the biosynthesis and molecular genetics of anthocyanins as floral pigments. (The 1990s also saw the discovery of how the smooth vs. wrinkled pea phenotypes are controlled at the molecular genetic level, but that is another story.)

Equally impressive, in a less fortunate way, were the acknowledgments at the end of so many presentations of vast teams of researchers that are now required for making significant progress in 'molecular phytochemistry' within reasonable periods of time. Nevertheless, we have come a long way from the days, about 10 years ago, when I attended a research seminar about the role of plant phenolics in the formation of root nodules in alfalfa. The presenter spent about 10 minutes describing how a his team took 6 months or so to track down the identity of a key component from the root exudate of this plant. It turned out to be a very common flavonoid, which many phytochemists at that time could have identified in about 15 minutes.

The Editor

Minutes of the Executive Committee, 1999

The PSNA Executive Committee met on Saturday morning, July 10, 1999, at Concordia University. President Vincenzo De Luca conducted the meeting, which was also attended by John Romeo, James Saunders, Susan McCormick, Cecilia McIntosh, Carlos Cespedes, and Dennis Clark.

On the secretarial front, plans were suggested and made for increasing the frequency of the Newsletter to 4 times per year, as it had been in the past, and to allocate some of the Society's resources for maintaining our website. The Newsletter will come out twice before and twice after each annual conference. In addition, the committee decided to encourage membership in Mexico, where the number of members has been dwindling, by sending extra copies of the Newsletter to Dr. Cespedes for distribution to potential new student members.

The Treasurer, Cecilia McIntosh presented the 1998 Financial Report, which was also published in the most recent Newsletter (Volume 39 (No. 1), May, 1999), with updates on the society's finances and membership for the first half of 1999. While the society is financially healthy in most aspects, McIntosh expressed concern for the decreasing numbers of continuous, long-term members.

John Romeo also called to the committee's attention that his term as Editor of the Recent Advances in Phytochemistry Series was ending. After he excused himself from the meeting for the committee to discuss the issue, the committee unanimously agreed to ask him back for another term. Romeo accepted the reappointment after he returned to the meeting.

Romeo also pointed out that the society's book contract with Plenum Press was up for renegotiation. The terms being offered by Plenum were not as favorable as in previous contracts, so the committee decided to explore the possibility of contracting with another publishing company. Romeo will obtain the information the committee needs for deciding upon Plenum versus another publisher before the end of 1999. James Saunders, the meeting organizer for PSNA 2000, began a discussion about the potential dates for next year's conference. The originally announced dates in June, 2000, conflicted with times of other conferences that molecular biologists might attend. Since PSNA 2000 will be held jointly with the Mid-Atlantic Plant Molecular Biology Society, the committee decided to move our conference to later in the summer. (The final dates and other information on PSNA 2000 are available elsewhere in this Newsletter.)

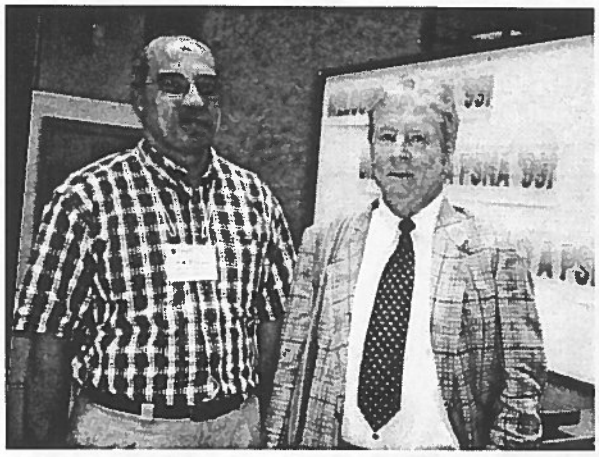
Vince De Luca announced that the results of the election for President-Elect were not yet available but would be announced at the general business meeting.

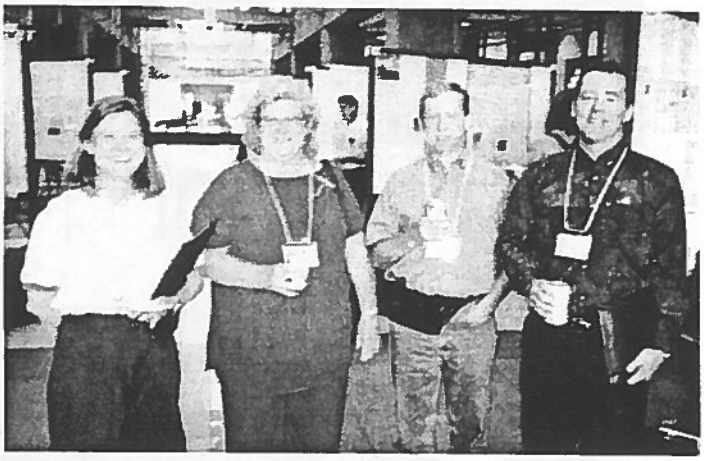
Minutes of the General Business Meeting, 1999

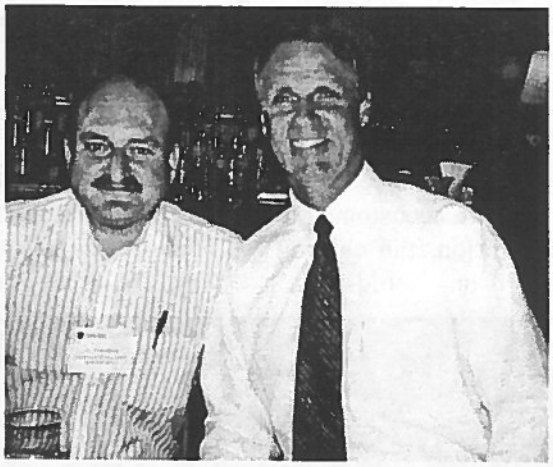
President Vincenzo De Luca opened the general business meeting at 4:30 PM, Tuesday, July 13. Dr. De Luca acknowledged the the tireless efforts of Prof. Ragai Ibrahim in making the local arrangmenents for the 1999 conference at Concordia University. All agreed that the conference was a tremendous success, based on the number of high quality speakers that the organizing committee had invited. Dr. De Luca also announced the election of Dr. Richard A. Dixon to the position of President-Elect of PSNA. Several items were reviewed from the meeting of the Executive Committee, including the book contract issues (J. Romeo), the PSNA 2000 conference (J. Saunders), and the Treasurer's report (C. McIntosh). Dr. McIntosh provided copies of the Treasurer's report to the membership in attendance. The Editor of the Newsletter (W.D. Clark) beseeched the membership to provide news for the Newsletter. Finally, Dr. De Luca turned over the reins of the presidency to our new President, Dr. Susan McCormick.

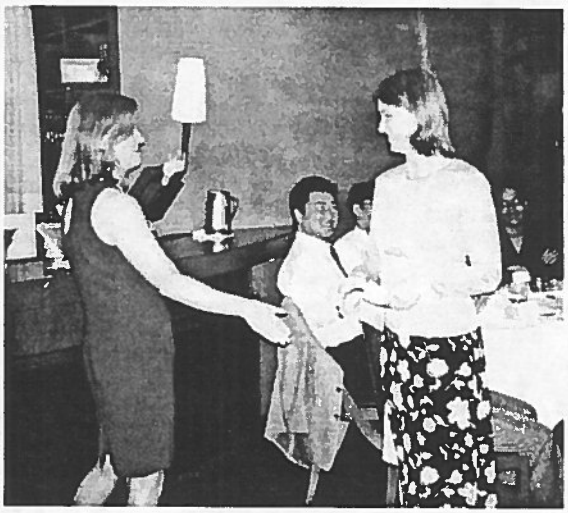
Conference Highlights 1999

The 1999 PSNA Conference at Concordia University provided an excellent scientific experience for the participants, as we are accustomed to in PSNA. In addition, the cultural experience of an 'old-town' atmosphere near the university brought Montreal alive for visiting scientists from other countries and from other parts of Canada. The high point of this experience was the Jazz Festival, which attracted large crowds of listeners to the many roped-off areas of the downtown district. And who can forget the end-of-conference banquet? This was certainly one of the finest we have ever had!









Student Award Winners 1999

BEST POSTERS

Cinta Hernandez-Sebastio — "Time-course of carbon uptake and metabolism by asymbiotic germinated spores and extraradical hyphae of *Glomus interadicus*"

Pierre Laflamme — "Molecular and biochemical analysis of *Catharanthus roseus* root-specific O-acetyltransferase responsible for acetylating minovincinine"

BEST ORAL PRESENTATIONS

Emily G. Cantonwine — "Variation of polyacetylene concentrations in *Bidens alba*"

Amrita Singh — "Analysis of an array of ripening-related polyketide synthase genes in raspberry"

ART NEISH AND THE ROLE OF SCIENTISTS IN THE KNOWLEDGE ECONOMY

Condensed from remarks presented by Dr. Peter Hackett to the 1999 conference of the PSNA

This is an occasion for you to look forward to what the future research into phytochemistry might hold. It also gives us an opportunity to look back on the life of Art Neish, who pioneered phytochemical research in Canada. I also want to use this occasion to reflect on the role of science and the scientist in Canadian life – and just how much we owe as a nation to the kind of research that is being conducted in Canadian labs and commercialized into products and processes.

Many of us were gratified to see plant scientists getting their due when the historians Graham Rawlinson and jack Granatstein published their list of the 100 most influential Canadians of this century. They gave the top honor to Charles Saunders, who developed Marquis wheat at the beginning of the century. To quote their book, "Saunders made possible the prosperity of the Prairies, and he is entitled to stand first among the most influential Canadians of the century." I'm also pleased that Ned Steacie, who led the National Research Council in the 1950s, takes 51st place.

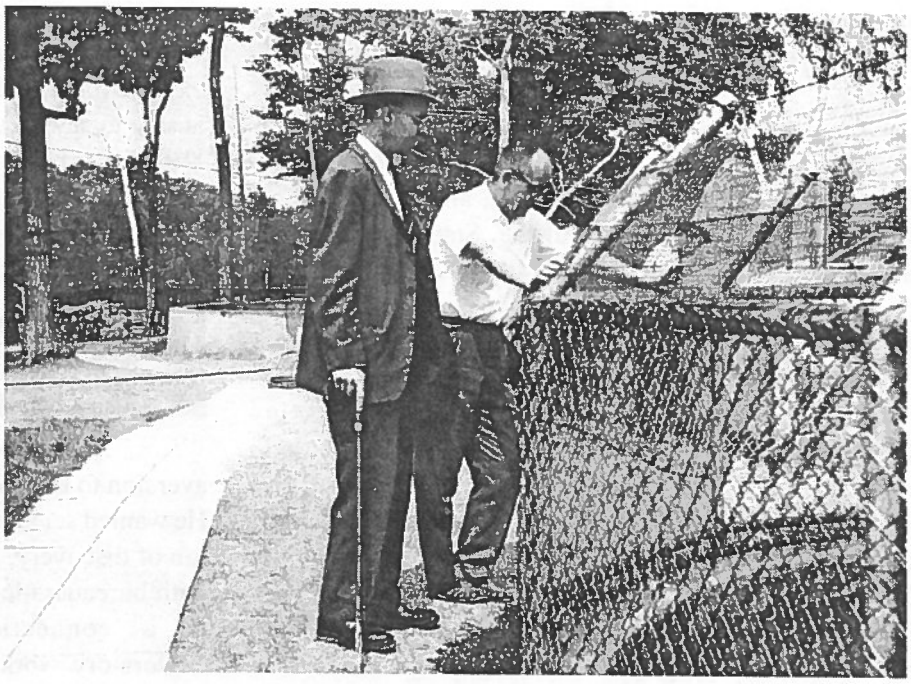
My point is the high value of scientific research in its application to Canada and to the prosperity and standard of living of Canadians. We now speak of a knowledge-based economy and the importance of innovation in building our quality of life. We are reminded that science is critical to our economic development and out growth as a nation by examples like Charles Saunders and Ned Steacie.

When we come to Art Neish, we find a Canadian scientist whose work in the 1950s and 1960s help create the foundation for the knowledge economy in Canada. Dr. Neish was born in Granville Ferry, Nova Scotia, in 1916. He spent his early years moving around among the farming and fishing villages of the Maritimes. He always wanted to farm, and after graduating from Nova Scotia Agricultural College and Macdonald College, he went on to McGill University, where he earned his doctorate in 1939. His work, first in Saskatoon, and later in Halifax, pushed ahead our knowledge of biosynthetic pathways. He helped put those cities on the world map of research and development centres, and both Saskatoon and Halifax continue to build upon his legacy.

Dr. Neish earned many honours in his lifetime: an Officer of the Order of Canada; a Fellow of the Chemical Institute of Canada and of the Royal Society of Canada; honourary degrees from Mount Allison and McGill Universities; a member of the editorial boards of *Phytochemistry*, *Science Forum*, and *Le Naturaliste canadien*; president of the Canadian Society of Plant Physiologists; and, the first recipient of the CSPP's Gold Medal. In 1972, NRC appointed him as a Distinguished Research Scientist. This was only the second time in our history that we had accorded such an honour. The first was to the Nobel Laureate, Dr. Gerhard Herzberg. Clearly, Art Neish enjoyed a very distinguished career, and it is very fitting that we honour his memory with this symposium.

In 1943 Dr. Neish joined the Division of Applied Biology at NRC, where he developed several quantitative methods to identify fermentation products. In 1948 he came to Saskatoon to become head of the Fermentation Section at NRC's newly established Prairie Regional Laboratory, the precursor of today's Plant Biotechnology Institute. He later became the Head of the Plant Biochemistry Section, until 1961.

To appreciate Dr. Neish's impact on plant biotechnology in the Saskatoon phase of his career, remember that, at the time, no one had though to use radioactive compounds to trace the biosynthetic pathway of carbohydrates to end products. He set up a lab in 1952 for the synthesis of ^{14}C-labeled compounds for biosynthetic tracer studies. At the time there were very few labeled compounds available, so he and his technicians synthesized their own radioactive metabolites. He turned his attention from metabolism of glucose in plants to the biosynthesis of cellulose and lignin, where he and his group at the Prairie Regional Laboratory formed one of the world centres for this research.



Dr. Arthur Neish (right) at the Quebec Zoo in 1970, just after being awarded the Gold Medal by the Canadian Society of Plant Physiologists. Dr. Neish is accompanied by Don Mortimer.

Today the Plant Biotechnology Institute plays a key role in NRC's strategy to use its strength in the various regions of Canada to build the knowledge-based economy of the nation as a whole. The strength of Canada's innovative system is built on what has been happening in technology clusters that can be found in large cities like Montreal, or smaller cities like Saskatoon. Large or small, these centres build their capacity around state-of-the-art research facilities, such as those of the NRC.

These facilities draw highly qualified scientists and researchers from across the country and around the world. Both large businesses and small companies tap into their expertise. The demand for skilled employees increases, and educational institutions in the private sector and the provincial educational system begin to develop programs to address the need. This, in turn, draws more knowledge workers into the community as teachers. Venture capitalists come to the community as well, attracted by its reputation as a location for innovative companies. This has a snowball effect. The more the knowledge-based economy grows, the more it feeds the demand for further knowledge jobs and enterprises.

A few months ago, page B1 of the *Wall Street Journal* carried an article that described how the above developments had been taking place Saskatoon. "Here's a recruiting challenge," it read. "You need to attract talented professionals to North America's second-coldest major city, and it is 650 miles north of Casper, Wyoming." The article goes on to describe how Saskatoon had managed to attract highly qualified professionals from around the world – from everywhere from New York to the south of France. Researchers in Britain turn down better-paying offers in their own country to come because of the facilities are better in Saskatoon.

When a knowledge-based, high-technology cluster begins to grow in a community like Saskatoon, it builds its own momentum. The players in the knowledge economy – in industry, the universities and the government research facilities – collaborate with one another. They share ideas and provide both suppliers and customers for one another. They learn about innovations from other players, and work with them to obtain the tools they need to adapt to innovation.

I think Art Neish would be very proud of how the city os Saskatoon and the province of Saskatchewan built upon the achievement of the early Prairie Regional laboratory. Its successor, the Plant Biotechnology Institute, has built partnerships with some of the world's largest agricultural companies. Some of them, including Monsanto, Hoescht, Mycogen, DowElanco and AgrEvo, have moved operations to Canada largely as a result of the competitive advantages of working in partnership in the community. As an example, last April, NRC signed a $10 million Strategic Alliance Agreement with Dow AgroSciences Canada Inc.

Saskatchewan has become a centre of excellence in plant biotechnology. It is known across the country and around the world. As a result, it draws even more strength from businesses and research facilities elsewhere that want to tap into the expertise of an institution that Art Neish did so much to help establish in the 1950s.

In 1961 Dr. Neish left the Prairie Research Laboratory and returned home to Nova Scotia, where he was made Director of the Atlantic Regional Laboratory. It was during this period that he collaborated with Kurt Feudenberg to write *Constitution and Biosynthesis of Lignin*. He also build an addition to the laboratory, increased the staff, and established a Seaweed Culture Station at Sandy Cove. There he studied the growth and nutrition of *Chondrus crispus* – Irish moss – and developed methods of propagating the plant in tanks.

"Neish's pioneering work in growing Irish moss in land-based aquaculture was a source of great satisfaction to him, and I think he was happiest at the "Cove," striding around in his Wellingtons and watching the seaweed plants grow to gargantuan proportions in the greenhouse tanks," recalls Senior Research Officer Carolyn Bird, who was hired by Art Neish in 1969. Thus, we find the impact of Art Neish's contributions today in Halifax, just as we do in Saskatoon. Halifax, too, has emerged as a cluster of excellence in the knowledge-based economy, largely with the help of the expertise found at NRC's facilities at the Institute for Marine Biosciences, formerly the Atlantic Regional Laboratory.

Art Neish's old field of expertise, phytochemical research, has some interesting applications in Halifax today. IMB uses its expertise in phycology to explore commercial opportunities of marine algae, as seafood and as sources of plant growth regulators and other bioproducts. Acadian Seaplants Ltd. is a Halifax company that employs about 130 full-time staff and over a thousand seasonal workers. Its early collaboration with NRC involved developing ways to cultivate land-based aquaculture of *Chondrus crispus* for the production of an extract called carrageenan. The company now produces sea vegetables and seaweed extracts and exports to more than 50 countries. It is safe to say that, without the help of NRC's Institute of Marine Biosciences, Acadian Seaplants would not be the rapidly growing, dynamic enterprise it is today.

Art Neish had a strong aversion to the "planning" of science. He wanted scientists to get on with the job of discovery, and not be hindered with bureaucratic red tape. But there is a connection between the exploratory work that he preformed and the jobs of many people in his native province. The connection is made by the ability of NRC to bring its resources to bear to help solve the science and technology problems of industry. I am sure that Arthur Neish would be extremely gratified to know that the legacy of his vision is a thriving seaweed culture industry in Nova Scotia.

NRC was indeed very fortunate to have a scientist of the calibre of Art Neish on staff back in the 1950s and 1960s. It was a time when we were laying the foundation of knowledge for what has since become a multimillion dollar industry. I never met Art Neish, but everything I've been told about him leads me to believe he would find the current research immensely stimulating. He was a man of tremendous energy, an inspiration to his fellow NRC researchers, and a mentor to the many students he taught. The PSNA should be congratulated in its wisdom in naming their Young Investigators Mini-Symposium after Dr. Neish.

Phytochemistry in the News

REPORT FROM THE XVI INTERNATIONAL BOTANICAL CONGRESS
ST. LOUIS, MISSOURI

During the week of August 1-7, 1999, approximately 5,000 botanists from all over the world met for the 16th International Botanical Congress. This was the first time since 1969 that the Congress was held in the U.S., which was in Seattle. The primary significance of phytochemistry among botanists at that time centered around the emerging discipline of chemotaxonomy. In contrast, the 1999 Congress had only a small handful of presentations in this area, mostly involving cell wall composition of algae or fungi, which were scattered among different symposia.

The health of phytochemistry at IBC was more apparent among topics that we would also expect to see at our own PSNA conferences. "Plant Antioxidant Systems: Molecular and Genetic Approaches to Function and Regulation" summarized current research in the genetic analysis or manipulation of glutathione, ascorbic acid, and carotenoid biosynthesis. The long-studied, but still less successful, approaches to manipulating secondary metabolism in cell culture were explored in the symposium, "Plant Cell Biotechnology for the Production of Biochemical Products."

Phytochemical research is the foundation for future work in pharmaceutical prospecting, as ethnobotanists have been pointing out for decades. The main theme among several presentations in the symposium, "South American Plants and Their Chemistry and Pharmacology: Interaction with Human Activities" was to point this out again.

The complexity of chemical variation and its importance in the ecology of plants was addressed very nicely in "Multiple Ecological and Evolutionary Roles of Secondary Metabolites in Plants: Significance of Chemical Variation." This is the quality that we have come to expect from the lead organizer of this symposium, Jean H. Langenheim. The Congress also benefitted from another one of our PSNA members, Rodney Croteau, the symposium on "Molecular Insights into the Biosynthesis and Function of Plant Isoprenoids."

All in all, phytochemistry had a strong showing at the Congress, and we can expect the same kind of presence at the next IBC, which will be in Vienna in 2005.

TRENDS IN PLANT SCIENCE

"Plant Secondary Metabolism: Out of the Evolutionary Abyss", by Peter J. Facchini, is a fine summary publicizing the recently held PSNA conference (TIPS, vol 4, no. 10, pp. 382-384). Facchini spends several column inches on each of the main symposium themes of the conference, including the Neish Young Investigator Minisymposium.

This summary of the conference truly gives the PSNA a wide international exposure in a well-written and concise view of what a small but powerful group of scientists has done. It should be most gratifying to the organizing committee and to the conference participants to see the society's efforts gain this kind of recognition.

Coincidentally, phytochemistry (and PSNA, indirectly) gets another boost in the same issue of TIPS, this time by our newly elected President-Elect, Richard A. Dixon. In the research review, "Flavonoids and Isoflavonoids – A Gold Mine for Metabolic Engineering," Dixon and co-author, Christopher L. Steele, describe the flavonoids as products of the best characterized natural products pathway in plants, with perhaps the widest array of applications for metabolic engineering (pp. 394-400). These include floral pigments, signal molecules between plants and microbes, and health-promoting components of the human diet, among others. This is a must-read for everyone seeking ideas about the potential directions of research in phytochemical biotechnology. It is particularly gratifying to see that this review is accompanied by a robust bibliography for further exploration into the literature on this topic.

MEETING ANNOUNCEMENT

PHYTOCHEMICAL SOCIETY OF NORTH AMERICA 2000

"Applications of Molecular Biology to Phytochemistry"

August 6-10

Beltsville Agricultural Research Center Beltsville, Maryland

Joint Meeting with the Mid-Atlantic Plant Molecular Biology Society (NOTE: Date change from previous announcement)

In addition to the Scientific Program, the conference will have an active guest/spouse program for family and friends involving activities in the Washington, DC, area

We already have several speakers lined up and are actively looking for more. Please submit ideas for speakers to:

Dr. James A. Saunders
USDA, Bldg. 50, Rm. 100
Beltsville, MD 20705

Telephone: (301) 504-7477
Email: saund10449@aol.com

Other Meetings of Interest

November 3-5, 1999: The International Conference on Ethnomedicine and Drug Discovery (Spring, Maryland). More information at: http://www.bioresources.org/confe.htm

November 13-17, 1999: International Society of Chemical Ecology in (Marseille, France). More information at: http://www.isce.ucr.edu/meetings/99/

December 14-15, 1999: Are Natural Products Still a Source of Innovation in Crop Protection? (London, England). More information at: http://sci.mond.org/conference/meetings/CROP032.HTM

January 13-16, 2000: Flavour and Fragrance Chemistry (Molise, Italy). Contact Professor Virginia Lanzotti (lanzotti@unina.it)

February 17-22, 2000: American Association for the Advancement of Science, Annual Meeting and Science Innovation Exposition (Washington, D.C.). More information at: http://www.aaas.org/meetings/2000/

February 22-27, 2000: Keystone Symposium: Signals and Signal Perception in Biotic Interactions in Plants (Taos, New Mexico). More information at: http://www.symposia.com/programlist2.cfm?Year=2000&MeetingNumber=C3

March 26-30, 2000: American Chemical Society, 219th Nationa Meeting (San Francisco, California). More information at: http://www.acs.org/meetings/

April 12-15,2000: Natural Products from the Plants and Marine Organisms of the Mediterranean and Atlantic Seaboard (Lisbon, Portugal). Contact Professor A. P. Rauter (aprauter@mail.telepac.pt)

May 7-10, 2000: Progress in Phytochemistry. A Young Scientist's Symposium. (Rolduc, The Netherlands). Contact Professor Dr A. W. Alfermann (alferman@uni-duesseldorf.de)

June 18-24, 2000: International Society for Plant Molecular Biology: 6th International Congress (Québec City, Canada.). More information at: http://www.ISPMB-2000.org/

June 24-27, 2000: Canadian Society of Plant Physiologists (London, Ontario). Joint meeting with the Canadian Botanical Association. Contact Norman Huner (nhuner@julian.uwo.ca)

July 15-19, 2000: American Society of Plant Physiologists (San Diego, California). More information at: http://www.aspp.org/meetings/preliminary2000.htm

July 23-28, 2000: 14th International Symposium on Plant Lipids (Cardiff, Wales). More information at: http://www.cf.ac.uk/uwc/biosi/14thplm/

August 21-25, 2000: 12th Congress of the Federation of European Societies of Plant Physiology (Budapest, Hungary). More information at: http://www.szbk.u-szeged.hu/~hplc/fespp.html

RECENT ADVANCES IN PHYTOCHEMISTRY SERIES

PSNA members receive a 40% discount on the following titles

_____ Volume 32 (1997)	**Phytochemical Signals and Plant-Microbe Interactions** (List $95.00, PSNA $57.00)
_____ Volume 31 (1996)	**Functionality of Food Phytochemicals** (List $114.00, PSNA $68.40)
_____ Volume 30 (1995)	**Phytochemical Diversity and Redundancy in Ecological Interactions** (List $89.50, PSNA $53.70)
_____ Volume 29 (1994)	**Phytochemistry of Medicinal Plants** (List $71.00, PSNA $42.60)
_____ Volume 28 (1993)	**Genetic Engineering of Plant Secondary Metabolism** (List $89.50, PSNA $53.70)
_____ Volume 27 (1992)	**Phytochemical Potential of Tropical Plants** (List $79.50, PSNA $47.70)
_____ Volume 26 (1991)	**Phenolic Metabolism in Plants** (List $89.50, PSNA $53.70)
_____ Volume 25 (1990)	**Modern Phytochemical Methods** (List $85.00, PSNA $51.00)
_____ Volume 24 (1989)	**Biochemistry of the Mevalonic Acid Pathway to Terpenoids** (List $85.00, PSNA $51.00)
_____ Volume 23 (1988)	**Plant Nitrogen Metabolism** (List $89.50, PSNA $53.70)
_____ Volume 22 (1987)	**Opportunities for Phytochemistry in Plant Biotechnology** (List $59.50, PSNA $35.70)
_____ Volume 21 (1986)	**Phytochemical Effects of Environmental Compounds** (List $75.00, PSNA $45.00)
_____ Volume 20 (1985)	**The Shikimic Acid Pathway** (List $55.00, PSNA $33.00)
_____ Volume 19 (1984)	**Chemically Mediated Interactions Between Plants and Other Organisms** (List $45.00, PSNA $27.00)
_____ Volume 18 (1983)	**Phytochemical Adaptations to Stress** (List $49.50, PSNA $29.70)
_____ Volume 16 (1981)	**Cellular & Subcellular Localization in Plant Metabolism** (List $39.50, PSNA $23.70)

Please send the copy/copies marked above.

NEW YORK AND NEW JERSEY RESIDENTS MUST INCLUDE APPLICABLE SALES TAX.
All offers must be prepaid. Major credit cards accepted. Make checks payable to Plenum Publishing Corporation.
PLEASE SUBMIT CHECK OR CREDIT CARD PAYMENT FOR THE TOTAL OF THIS FLYER ONLY.
DO NOT COMBINE WITH PAYMENT FOR ANY OTHER PLENUM PURCHASE.

Type of Card: _____ Expiration date: _____ Account No.: _____

Signature: _____ Name: _____

Address: _____

City: _____ State/Country: _____ Zip/Postal Code: _____

FAX Number: _____ Return To: Plenum Publishing Corporation **ATTN: K. McDonough**
233 Spring Street
New York, NY 10003

Phytochemical Society of North America

1999 Dues Notice and New Membership Application

PSNA membership dues for 1999 are now due. PSNA membership is open to anyone with an interest in phytochemistry and the role of plant substances in related fields. Current members please take a moment to verify your personal information and let us know of any corrections or changes. New applicants and current members may also wish to include information on your personal websites, since we are also in the process of updating the PSNA website and would like to provide links to members' sites. Thank you.

Please make check or money order payable to the PHYTOCHEMICAL SOCIETY OF NORTH AMERICA. Payment must be made in U.S. dollars, drawn on a U.S. bank. Travelers Checks or Canadian Postal Money Orders, payable in U.S. dollars, are also acceptable. We are unable to accept payment via credit card.

Dues schedule

_____ Life (or emeritus) member - no charge
_____ Regular member - $20.00 per year
_____ Student member - $10.00 per year

Return this statement along with your payment to:

Dr. Cecilia A. McIntosh, PSNA Treasurer
Department of Biology, Box 70703
East Tennessee State University
Johnson City, TN 37614-0703 USA

Please take a moment to provide/update the following information:

Name (Dr., Mr., Mrs., Ms.): _____

Mailing Address: _____

City: _____ State/Province: _____ Zip/Postal Code: _____

Phone: _____ Fax: _____ E-Mail: _____

Homepage URL: _____

May we include/link your directory/homepage information on the PSNA website? Yes □ No □

Research Interests (circle up to 4 items):

A. Acetylenes
B. Alkaloids
C. Amino acids/proteins
D. Coumarins
E. Cyanogenics
F. Flavonoids
G. Glucosinolates
H. Lignans
I. Lipids
J. Nitrogen compounds
K. Nucleic acids
L. Organic acids
M. Phenolics
N. Pigments
O. Quinones
P. Stilbenes
Q. Sugars/polysaccharides
R. Sulfur compounds
S. Terpenoids
T. Vitamins
aa. Biochemistry/physiology of herbicides
bb. Enzymology
cc. Cell wall chemistry
dd. Chemotaxonomy
ee. Biotechnology
ff. Plant-insect interactions
gg. Plant-microbe interactions
hh. Plant-plant interactions
ii. Chemical reactions/organic synthesis
jj. Biochemistry of secondary metabolism
kk. Fungal metabolism
ll. Growth regulators
mm. Biochemistry/physiology of stress
nn. Industrial applications
oo. Structure identification
pp. Marine natural compounds
qq. Medicinal chemistry
rr. Membrane structure/function
ss. Molecular/immunological techniques
tt. Nitrogen fixation/metabolism
uu. Pharmacology/pharmacognosy
vv. Plant pathology
ww. Plant genetics
xx. Recognition-cell surface interactions
yy. Tissue/cell culture
zz. Toxicology of natural products
OTHER: _____

Phytochemical Society of North America
Dr. W. Dennis Clark, Secretary
Department of Plant Biology
Arizona State University
Tempe, AZ 85287-1601
U.S.A.

SEND TO:

John T. Romeo
Department of Biology
University of South Florida
Tampa, FL 33620
USA