

the Alembic

Chair's Corner

The students and teachers have returned to the honored halls of education like the swallows to Capistrano, the smell of burning leaves will soon be in the air, and the fall program of your local ACS chapter is beginning.

For October, the speaker will be Dr. Elmer Gaden, Jr. Today there are so many drugs accessible to the physician it is difficult to realize that when many of us were born, penicillin either had not been discovered or there was precious little available. Dr. Gaden will bring us up to date on how we got from the discovery to large scale production of this pioneer antibiotic. Know someone who would be interested in hearing this account? Bring them along.

In November, the monthly meeting will be in Wausau. Coincidentally, or maybe not, the meeting will be just a few days before National Chemistry Week. Have chemicals and chemistry gotten a bad rap? Want to see how you can do your part to show just how the other side of the story? Contact Ilona Lin or Jim Waelchli. They will be more than glad to put you to work. Part of the November meeting will be an assortment of displays that will be shown in public areas around the state during Chemistry Week.

The December meeting is still being developed, but you can

be sure that from within the very broad category of polymers we

will have an interesting and beneficial presentation.

Chair-elect Jim Waelchli is already putting together an aggressive plan of activities for next year. More about that as the year draws to a close, so stay tuned. And don't forget that you may just be the person from whom he needs help.

And speaking of help, I again make an appeal to you to become involved in the activities of your local chapter. And I will mention just one advantage. Networking. Being in contact with others that you may be able to help or who may be able to help you. No one knows when someone sitting next to you may have an insight or solution to the problem that is troubling you. Or they could become your mentor. Or know of a open position for which you would be the perfect candidate. Or could become a lifelong friend with similar interests. Or You get the idea.

See you at the meeting.

Gary

ACS - CWS Mini-Directory

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Don Campbell

Councilor

C. Marvin Lang

Alternate Councilor

Don Showalter

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Tom Marty

Education

Laura Cole

Past Chair

Robert St. Louis

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"THE FIRST "WONDER DRUG": LARGE-SCALE PENICILLIN PRODUCTION"

by

Dr. Elmer L. Gaden, Jr
Department of Chemical Engineering
University of Virginia
Charlottesville, VA 22903-2442

Wednesday, October 6, 1999, 7:30 pm
Robert F. Froehlke Auditorium
Marshfield Clinic Laird Center (2nd Level)
Marshfield, WI

Abstract

Penicillin was discovered in 1928 but its promise for infectious disease control remained unexploited for nearly a decade. Existing procedures for separation and recovery of complex molecules from solution were simply unsuited to its delicate molecular structure. Only in 1939, with the prospect of a major war ahead, was a coordinated effort undertaken (in Britain) to produce, isolate, and test the active principle. The relatively crude material which resulted from this work nevertheless truly justified the popular term "wonder drug" and the advent of war made large-scale production imperative.

Because conditions in wartime Britain were difficult, industrial and government groups in the United States assumed primary responsibility for this next stage. There followed a period in which a fortunate blend of wise strategic decisions, close cooperation, several serendipitous findings, and intense effort was successful. Large-scale production was first achieved by crude but remarkably effective "pot-and-pan" methods. These were quickly followed by the development of "submerged culture" or "deep tank" methods quite novel in the practice of "industrial fermentation".

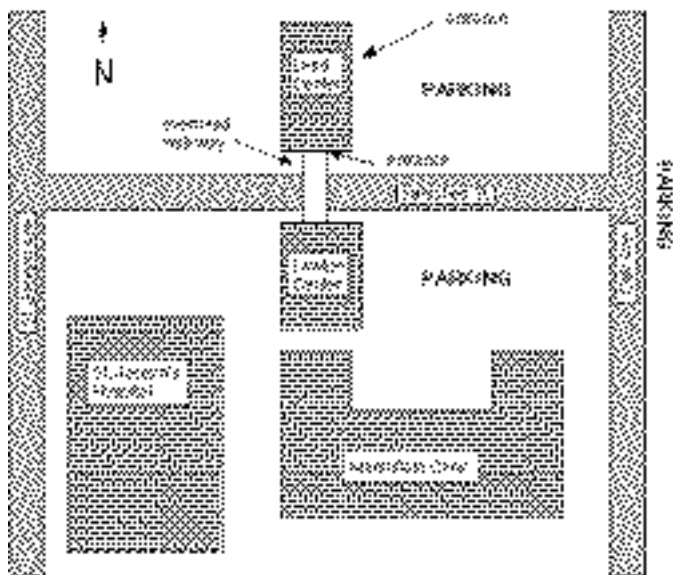
The successful accomplishment in so short a time of large-scale penicillin production opened a whole new chapter in the history of chemotherapy - the "antibiotic age". Moreover, and scarcely noticeable to the public, it gave rise to the intimate involvement of chemical engineers in biological process technology. It was, therefore, the beginning of what we now call "biotechnology".

About the Speaker

Dr. Gaden has been Wills Johnson Professor of Chemical Engineering at the University of Virginia since 1979. He was Chair of his department from 1985-88 and, upon retirement (1994), was elected Professor Emeritus. Dr. Gaden received the BS (1944), MS (1947), and PhD (1949) degrees in chemical engineering from Columbia. Dr. Gaden's primary technical interest has been in "biotechnology", especially bioprocesses. He was the founding editor of the international research journal Biotechnology and Bioprocesses and served as its editor for 25 years. Dr. Gaden is a member of the National Academy of Engineering and a Fellow of the American Institute of Chemical Engineers (AIChE). He was the first recipient of AIChE's Food, Pharmaceutical, and Bioengineering Award and has also received the Chemical Engineering Lectureship Award (American Society of Engineering Education). On his retirement a Symposium in his honor was presented at the Spring 1994 meeting of the American Chemical Society where he also received the Marvin Johnson Award in recognition of outstanding research contributions in biochemical technology. In 1986 Dr. Gaden received Columbia's Egleston Medal for distinguished engineering achievement and in 1987 was awarded an honorary Doctor of Engineering degree by the Rensselaer Polytechnic Institute. AIChE recognized his accomplishments and service to the profession with its Founders Award in 1988.

Prior to the meeting, a 6 PM dinner will be held at the China Chef, 233 S. Central Ave. in downtown Marshfield (east side of Central between 2nd and 3rd; parking in the rear.). A buffet is available for \$8.25 or off-the-menu ordering. **Reservations may be made by leaving a message with Ron Haas at 715-387-7207 (or email haasr@mfldclin.edu) by noon Wednesday October 6.** See the map in this Alembic for the location of the Laird Center, on the north side of Kalsched St. opposite St. Joseph's Hospital and The Clinic.

Marshfield Clinic Map



ACS-CWS Web Page

<http://chemdept.uwsp.edu/acscws/>
or you can link there from the American Chemical Society home page - Local Sections. Contains the most up-to-date information about section activities.

NEXT MEETING

The next monthly meeting will be November 2, 1999. Jim Waelchli will be setting up a tour of the Wausau Insurance lab.

PROVOCATIVE OPINION

Oral Report to Council

Paul H. L. Walter

New Orleans, LA August 24, 1999

President Wasserman, my fellow councilors. This is the 22nd time that I have had the opportunity to address you at a national meeting. Since I will be leaving the Board at the end of this year, it is also probably the last time I will speak to you. The past three years, as a member of the presidential succession have been particularly busy. By the end of these years I will have been away from home more than 500 days on American Chemical Society business. I have visited local

sections from Northeastern to Santa Clara Valley, from Northern New York to Hawaii. I have participated in most regional meetings, several more than once. I have been hosted by sister societies on five continents and have attended and/or chaired numerous meeting of boards, committees, task forces, and study groups. Since we last met in Anaheim my schedule has not slowed. Rather than regale you with a travelogue let me instead focus on two trips to Africa, both of which made a particularly profound difference to me and which I hope will inspire action by our ACS.

In April, John Malin and I were in Pretoria. There, under the auspices of the MAS, we met with leaders of African chemical societies. Our goal there was NOT to tell Africans how they should run their societies or how to solve the economic and educational problems endemic to their countries. Rather it was to encourage them to know that the rest of the world cares about them and to facilitate their own thinking so that they might find local solutions to local problems, and it was to explore ways we might cooperate to advance the chemical enterprise worldwide.

Among the participants at this conference were two individuals from the Tanzania Chemical Society, which had been formed just last year. These gentlemen, Professor Donnati Mosha and Dr. Stephen Mdachi, both from the University of Dar Es Salaam, had created the organization and were planning the first national meeting of this fledgling group. Starting a new society and planning a meeting is difficult enough anywhere, but consider the fortitude and perseverance required to do it in a land which even by African standards is economically disadvantaged, where the per capita gross domestic product is 35 cents per day; where there are maybe 50 Ph.D. chemists and no nuclear magnetic resonance spectrometer.

I represented the American Chemical Society at that first meeting in Dar Es Salaam. Two other ACS members from the US were also there- Charles Desbordes from CUNY, and Isai Urasa from Hampton University, accompanied by several of his students . There were over 75 chemists registered at the meeting. Two talks were truly world class, only one was scientifically questionable, and the rest were of average ACS quality. The foci were on natural product chemistry and the environment.. I cannot over emphasize the joyful reception we received from the Tanzanians. Why? Because our presence demonstrated that somebody, the ACS itself, cared about Tanzanian chemists.

Now the question. Why should we care about Tanzanian chemists? Aren't we the **American** Chemical Society? Let me give you some reasons.

1. Chemistry is global. What advances chemistry in one country, advances chemistry in all.
2. Chemistry is the answer to environmental problems, and the environment does not recognize national boundaries.
3. The rapid growth of population in developing countries relative to that in Japan, Europe, and North America means that the 21st Century will see a world population increasingly Hispanic and African. Just as the ACS developed our Scholars Program to respond to these demographics within the US, so we must look to the same demographics globally so that there will be a chemistry in the future.
4. History shows us that it is not possible to have social stability in a world where there is abject

poverty surrounded by affluence. Assistance in development is nothing less than an investment in world peace.

Ladies and Gentlemen, colleagues, we are chemists with concerns in our laboratories and classrooms, but more than that we are human beings who must concern ourselves with the fate of our planet. If we, as a society and individually, develop research collaborations with our colleagues in developing countries, if we facilitate student exchanges with their universities, if we participate in their meetings and invite them to ours, if we share our expertise in organization, if we even encourage them by word and deed, we will have done something important for our Society, for our science, and most of all, for the world.

HELP!

The Central Wisconsin Section needs your help in finding people willing to carry on the work of the ACS at our local level.

We need nominations/volunteers to run for offices next year.

We need a person to act as Career Counselor for the section.

We need a person to act as Media Relations Coordinator.

We need nominations for section awards for next year.

Please contact Jim Waelchli or any other member of the Executive Committee.

Councilor's Report
218th National ACS Meeting
New Orleans, Louisiana.

C. M. Lang
UW-Stevens Point

The New Orleans meeting of the ACS was held late in August and I attended the meeting as your Councilor. Papers, poster sessions and a host of meeting rooms were spread out in at least 8 major hotels plus the Convention Center. All told, there were 11,734 registrants, exhibitors and single-day attendees at this meeting as of Wednesday, August 25th. There were 246 exhibitors who paid for 269 booths. Over 5500 papers were presented during the 3-1/2 days of this meeting. As Councilor from the Central Wisconsin Section, I represented the local membership at the Council meeting of August 25, 1999. Further, I continued my service on the Council Committee on Constitution & Bylaws which met all day Sunday before the meeting and had a session immediately following the close of the Wednesday Council meeting. With Professor Theresa Thewes of Edinboro University of Pennsylvania, we conducted a 90 minute demonstration program entitled "*National Chemistry Week: The Elements of Leadership*" as part of an Undergraduate Student Affiliate Symposium.

The actions and decisions of the New Orleans Council meeting have already been highlighted in *Chemical and Engineering News (C&EN)* (September 27, 1999, p.43-45). Let me take a few moments to share some "random thoughts and miscellaneous items" which I recorded during that meeting; you might find them interesting:

Chemical Abstracts Service (CAS) will construct a new building in Columbus, Ohio for somewhere around \$45 million. The burgeoning number of pages in technical journals and the way CAS must do business in the highly competitive publishing world requires new facilities. Regarding publishing, all ACS journals are available *on-line* and feature links to the abstracts of papers referenced within the article currently being perused!

As mentioned in my previous Report from the Anaheim Meeting, the topic of "redistricting" was anticipated to be a hot topic at New Orleans. While Central Wisconsin Section is unaffected by any

proposed change, several sections were assigned to different regions so as to be in compliance with the ACS's Constitution and Bylaws. Specifically, there shall be six geographic regions within the USA. One sixth of the ACS members shall reside with a given region. Over the past several years, movement of members and an increased membership role has required that sections adjacent to the borders of their region be moved. Redistricting appeared to have been more of an emotional issue, for in the end, the plan proposed by the Council Committee on Nominations & Elections passed with only minor dissension.

The Committee on Economic and Professional Affairs is preparing an "all member census." Part of the census will collect salary information as well as employment trends, member opinion, and other items.

Chemistry in the 21st Century is a year long celebration being promoted by the ACS Board of Directors, the presidential-succession and most units of the Society at the National level. Twenty six Divisions are sponsoring at least half-day symposia for the spring meeting in San Francisco. Local Sections are being encouraged to sponsor special events during the year 2000. Also, the December 6, 1999 issue of *C&EN* will be a special "millennium issue."

Local section outstanding performance awards for 1998 were given to New York & New Jersey in the "large section" category, Cleveland in medium large, Dayton & Memphis in medium, Northeast Oklahoma in medium small, and Southern Illinois University in the small size category.

Please remember to vote in the forthcoming ACS election for President-Elect. At the time I write this report, the ballots have not yet been received at UWSP. When you find one in your mailbox, please take the time to vote. We are fortunate to have two very worthy candidates vying for that office. Read their statements and exercise your option to vote.

Finally, let me once again thank you for choosing me to represent the Central Wisconsin Section as your Councilor. It is a pleasure and challenge I continue to relish and enjoy.

Marv

1999 Roster ACS-CWS

as supplied by National Office

KENNETH ABATE
ANDREW J ABRAHAMSON
JAMES WILLIAM ADAMS
MARIAN T ANDERSON
ROBERT CHARLES BADGER
ERICH ANTON BERGS
STEPHEN RAY BONDESON
MICHAEL R BROWN
JAMES GLEN BRUMMER
MICHAEL W BUETTNER
DONALD L CAMPBELL
CHRISTOPHER C CAPELLI
PHILIP JOHN CHENIER
MARY C CHRISTIE
LAURA JANE COLE
WILLIAM M COPA
STEVEN ROBERT CRUPI
KEVIN M CZERWINSKI
MARY A DALY
WILLIAM J DETROIT
LUKE THOMAS DRESSEL
JOHN PETER DROSKE
STEPHEN DRUCKER
CLAYTON EDWARDS
ROBERT JOHN EIERMAN
JOHN PAUL ENGEL
W JON FAHRNER
CARL LEON FARNSWORTH
VICTOR C FINKEL
GREG GARD
JERRY DANIEL GARGULAK
THOMAS F GEORGE
WAYNE B GITCHEL
MELVIN EARL GLEITER
LYNN PHILIP GORDON
MARCEL R GRDINIC
ERIC G GUNDERSON

RONALD G HAAS
JOHN D HANE
JOSEPH E HENRY
PAUL WHITEHILL HLADKY
HENRY W HOFTIEZER
DAVID HOGAN
JOHN WILLIAM HOLLIS
JOSEPH E IVANECKY
MARK T JAHNKE
DONALD E JANSSEN
EUGENE C JOHNSON
STEVEN JAY KAISER
FRED KING
CHRISTOPHER M KNAPP
RONALD DAVID KRIPPNER
C MARVIN LANG
DAVID JAMES LANGTON
ELMA LANTERMAN
CAROLYN A LASKOWSKI
STUART EDWARD LEBO
JIING-YUN LEE
STEPHEN C LEITERMAN
MARGARET IVES LEONARD
PETER E LEWANDOWSKI
DAVID E LEWIS
DONGHONG LI
ILONA S LIN
JUDITH E LUND
MICHELLE MAEDER
ANDREW J MARIAS
RALPH H MARKING
VINCENT WISE MARTIN
THOMAS G MARTY
GARY SCOTT MCCAULEY
MARCUS T MCELLISTREM
TIM J MCNALLY
ROBERT J MILLICAN

WILLIAM E MOLINAROLO
SUSAN MOLINAROLO
CHERYL L MULLER
MARK ALEXANDER NEBGEN
MELVIN ANTHONY NEUMAN
JAMES P O'LOUGHLIN
LEO A OCHRYMOWYCZ
JUDY KAY OCHRYMOWYCZ
WILLIAM CARL PENKER
JAMES ALLAN PHILLIPS
JOHN R PLADZIEWICZ
SANDRA C QUINLIVAN
DOUGLAS DEAN RADTKE
TIPTON L RANDALL
JACK KELLOGG REED
GERARD J RING
EDWARD G RIPPIE
RICHARD W ROBERTS
RONALD C ROBERTS
JOSEPH EDWARD SABOL
THOMAS A SANFORD
DONALD LEE SHOWALTER
GARY J SHULFER
RAYMOND A SOMMERS
KAREN SPREDA
ROBERT V ST LOUIS
THOMAS GEORGE STAVROS
ROBIN SUZANNE TANKE
DUANE A TEWKSBURY
DAVID ALLEN THIEL
JOHN E THODE
JAMES H WAELCHLI
DAVID B WOLGEMUTH
STEVEN M WRIGHT
THAO YANG
THOMAS M ZAMIS