



Double Bond

The newsletter of the Western New York Section of the American Chemical Society

Volume 78

August 2006

WNY ACS 100th YEAR CELEBRATION **Wednesday, September 6, 2006**

The Western New York section of the American Chemical Society was founded in 1905. To celebrate the first complete 100 years of our section, we have chartered the Miss Buffalo II for the following special event on Wednesday, September 6.

Boat Tour of Buffalo's Unique Industrial Heritage

Narrated by members of the Industrial Heritage Committee, aboard the Miss Buffalo II

followed by

Dinner Buffet aboard the Miss Buffalo II

Featuring: carved choice top round of beef; broiled boneless breast of chicken;
rice florentine or pasta du jour; chef's potatoes; vegetable du jour;
fresh garden salad; dinner rolls; dessert; coffee and tea

followed by

"Buffalo's Industrial Chemical History"

Presented by Joseph Bieron, Ph.D., Emeritus Professor of Chemistry, Canisius College

Cost of tickets is \$20/person, which includes an open bar during the entire event.

Please turn to page 18 for cruise details. Don't miss this gala, once-in-a-century celebration!

100TH YEAR CELEBRATION DETAILS

Join members of the Western New York chemistry community as we celebrate our first 100 years. You are welcome to board the Miss Buffalo II starting at 6:00 pm. The boat will leave the Erie Basin Marina dock at **precisely 6:30 pm** (we cannot wait for late-comers).

Location: The Miss Buffalo II is located at the Erie Basin Marina.

Directions: *From the south:* take I-190 heading north and take exit 7 to Church Street, then follow signs to the Marina. *From Niagara Falls and the north:* take I-190 south and take exit 8 to Niagara Street, then follow signs to the Marina. Parking is available at the Marina. (For more directions and a description of the Miss Buffalo go to the website: www.missbuffalo.com)

Dress: Tie is required.

Make checks payable to WNY ACS (\$20 per person) and send before August 29 to:

Alice Steltermann
Department of Chemistry and Biochemistry
Canisius College
2001 Main Street
Buffalo, NY 14208

Include with your payment the names of the people attending, your phone number and e-mail address.

To avoid disappointment, please send your payments early, as there are a limited number of spaces available for this special celebration.

For more information contact Alice Steltermann at (716) 888-2340 or e-mail: stelterm@canisius.edu.



CALL FOR OFFICER NOMINATIONS

The WNY local section of the ACS is actively seeking nominations for the following executive officer positions for terms starting January 2007:

Chair
Vice Chair
Chair-elect
Secretary
Councilor (2 positions)
Member-at-large (3 positions)

If you are interested in becoming more active in our section we urge you to consider nominating yourself or someone else for one of these officer positions.

Nominations should be sent to Timothy Gregg by email at greggt@canisius.edu or (716) 888-2259 before August 31. Please remember to include your contact information.

Elected officers must be members of the ACS.

Details concerning the WNY ACS 2007 elections and voting information will be posted in the September issue of the Double Bond.

FROM THE EDITOR

Welcome back to another autumn season on the Niagara frontier. If you are not yet done with summer partying, then make your reservations fast for our ACS section's century celebration on Sept. 6. We've been saving up for 100 years, and now it's time to have some fun.

After you've signed up for the cruise, take a moment to reflect on your contribution to the WNY ACS section. If you can get involved, contact someone on the executive board for information on how, and nominate yourself or someone you know for a position. The slate of candidates will be announced in September.

Thanks.

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*SOME EVENTS AT ACS SAN FRANCISCO 2006***SPECIAL EVENT FOR RETIRED AND EMERITUS MEMBERS IN SAN FRANCISCO**

A dynamic program is planned for the Silver Circle & Retiree Breakfast at the ACS National Meeting in San Francisco on Tuesday, September 12, 7:30 a.m.-9:00 a.m., at the Hilton San Francisco Hotel, Yosemite B.

The guest speaker, Dr. Mike Burns, Chief Technology Officer, YourEncore, Inc., will talk on "The Role of Retired Scientists and Engineers in Open Innovation". Chemical Abstract Services (CAS) will provide an update on the past 100 years at the world's largest collection of chemical and related scientific information for the research community. Following will be an opportunity to share program ideas for the retired chemist and highlight what some local sections are doing to utilize this growing number of ACS members. Ticketed event: \$10.00

**CHEMISTS IN THE COMMUNITY:
SAN FRANCISCO SERVICE PROJECTS**

You are invited to serve as a volunteer along with members of the ACS Board of Directors as they work to spruce-up several Bay area sites. We are looking for at least 300 volunteers to serve in this capacity on Saturday, September 9, 2006. Locations and times will vary. To sign-up for this volunteer opportunity and for additional details, read the C&EN ACS Comment by ACS District VI Director, Dr. Bonnie A. Charpentier, at pubs.acs.org/cen/acsnews/84/8426comment.html. This event is co-sponsored by the ACS Board of Directors, the Santa Clara Valley and California Local Sections, and the ACS Committee on Community Activities.

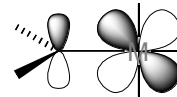
THE 2ND ANNUAL FALL ACS NATIONAL MEETING CONCERT

Chemists Making Music
Sponsored by HIST and the Chemical Heritage Foundation

5:30 – 7:00 pm September 12, 2006
Location to be announced.

Jeff Seeman and Vicki Bragin once again team up in their celebration of fine music and special chemistry. As they did at the Washington, DC National meeting in 2005, HIST and the CHF are sponsoring a concert which will take place during the San Francisco ACS National meeting. Bragin, the winner of the prestigious Van Cliburn International Piano Competition for Outstanding Amateurs in 2002, will once again perform her piano magic. Also featured will be members of the chamber

music program at Caltech. The musicians are June Wicks, violin; John Keith, cello; Victor Kam, piano; Christina Vizcarra, viola; and Shelley Chang, violin (all of whom are either chemistry undergraduate or graduate students at Caltech). This concert is free.



HIGH SCHOOL CHEMISTRY CLUB FOR YOUR LOCAL SCHOOL?

The High School office at ACS is interested in hearing from high school chemistry departments and any local section members interested in sponsoring an ACS High School Chemistry Club. To learn more, contact the ACS High School office at education@acs.org.

**NATIONAL CHEMISTRY WEEK:
"YOUR HOME—IT'S ALL BUILT ON CHEMISTRY"**

National Chemistry Week (NCW) will be here before we know it. Each year the American Chemical Society's NCW campaign reaches millions of people with positive messages about the



contributions of chemistry to their daily lives. It is the one time during the year that chemists unite with the common goal of spreading the word that chemistry is good for our economy, our health, and our well-being. The celebration dates for 2006 are **October 22 – 28**. Theme: **Your Home—It's All Built on Chemistry**.

Planning starts long before NCW arrives, and anyone interested in the activities going on in the Western New York local section should contact NCW coordinator David Nalewajek at (716) 827-6303 or david.nalewajek@honeywell.com.

Please join the celebration!

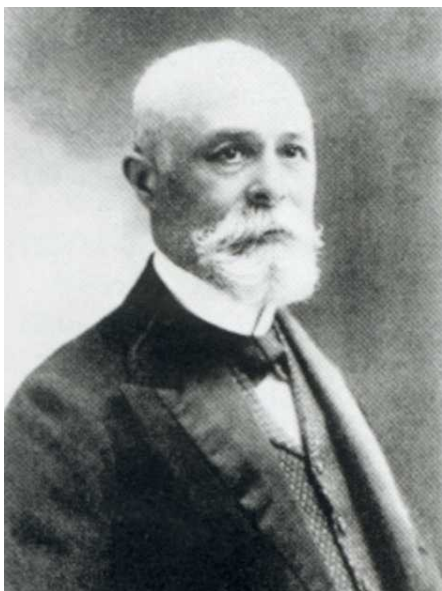


THIS MONTH IN CHEMICAL HISTORY - #1

Harold Goldwhite, California State U., Los Angeles; Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Gorgonio Sections of ACS.

In early March 1896 Henri Becquerel made one of those seminal discoveries that change the whole face of science--and of society. It was, to some degree, a serendipitous discovery, but Becquerel had the background, training, and genius to appreciate its significance, and he became the first investigator in a completely new area of science.

Henri Becquerel was born on December 15, 1852, into a distinguished family of scientists. His grandfather, Antoine Cesar Becquerel, was a pioneer student of electrical phenomena early in the nineteenth century, making important contributions to piezoelectricity, thermo-electricity, conductivity, and primary cells. Henri's father, Edmond Becquerel, became, at the age of 18, assistant to Antoine, and devoted his career to studies of both electricity and light. He was among the first to record, by photography, ultraviolet spectra--in 1842!--and devised a color photography system. He was a major investigator of phosphorescence phenomena, and this undoubtedly had its influence on his son's major discovery. In 1852, when Henri was born, his father Edmond had succeeded his father, Antoine, as Professor at the National Museum of Natural History in Paris.



So Henri grew up in the environs of a laboratory, and with his heritage he was predestined for a career in science. He studied at the Polytechnic School in Paris,

and then studied engineering for three years, while serving in the Army Corps of Bridges and Roads. He became a Demonstrator at the Polytechnic School in 1875, and later, in 1895, became Professor at that School. In 1878, after his grandfather Antoine died, Henri took the position of Assistant at the museum where his father was Professor. Henri succeeded him in 1892. Henri was elected to the Academy of Sciences in 1889.

Henri Becquerel's first researches were on the Faraday effect, the interaction between light and magnetic fields. He established the effect in gases, and worked on empirical and theoretical relationships between field strength and the magnitude of the effect. He then started a more general study of magnetic phenomena in metals and gases. He also was an early student of infrared spectra, examining such spectra of the sun, metal vapors, water, and compounds of the lanthanide elements (the "rare earths"). In the early 1890's he returned to one of his father's themes, studying in more detail the phosphorescence of uranium salts, including some striking new observations of phosphorescence produced when certain minerals are heated.



In late 1895 Wilhelm Roentgen, Professor at Wurzburg, startled the scientific community with his announcement of the discovery of X-rays. The remarkable properties of this new form of radiation, including its ability to penetrate materials quite opaque to visible light, set off a flood of new investigative work. Henri Poincare showed some of Roentgen's radiographs at a meeting of the Academy of Sciences in Paris in January 1896, and Becquerel was most interested in a reply to one of his questions, that the source of the X-rays might be the luminous spot on the wall of the cathode ray tube. Perhaps there was a connection between phosphorescence and X-rays? Becquerel told Poincare that he would begin some experiments to test this idea.

On February 24, 1896, Becquerel described some initial experiments at a meeting of the Academy of Sciences, but the results were inconclusive. He then began new experiments using, as his phosphorescent

(Chemical History continued)

material, potassium uranium sulphate, a salt which has a very strong phosphorescence. He placed the crystalline material on photographic plates wrapped in black paper, and put the assemblage in sunlight to excite the phosphorescence of the salt. After a few hours exposure he developed the plates and saw a faint impression of the crystals which had somehow penetrated the black paper. He seemed to be on the right track. More experiments were planned in late February, and the plates with attached crystals were made up—but the weather did not cooperate. The sun refused to shine, which is really not surprising for late February in Paris. Becquerel put the prepared plates away in a drawer for a few days and then, as a good scientist should, decided to treat these plates as controls. On March 1, 1896 he developed the plates expecting to find only very weak impressions. To his surprise the impressions were extremely strong; whatever was producing them was continuing to act in the dark of a laboratory drawer. Phosphorescence clearly had nothing to do with the phenomena Becquerel had observed. He had discovered a new kind of radiation which had no obvious excitational cause. He soon established that the new radiation was to be found in every uranium compound he examined, and he discovered a new detector for it. A charged gold-leaf electroscope was discharged by the action of this novel radiation—but we might as well give it its recognized name. Becquerel had discovered radioactivity. His new electroscope detector was well-suited to quantitative measurements of the phenomenon. A young doctoral candidate at the School of Physics and Chemistry, Marie Sklodovska Curie, decided to follow up Becquerel's discoveries and use the electroscope to establish the fundamentals of radioactivity, with results that are surely well-known to all my readers.

Becquerel continued his studies on radioactivity in parallel with those of Marie Curie, who was later joined in her investigations by her husband, Pierre Curie. Becquerel and the Curies were jointly awarded the Nobel Prize in Physics in 1903 for their work on radioactivity, work which led to a complete revolution in our understanding of the nature of matter, and to a range of new products and industries, both beneficial and deadly.

60 YEARS AGO THIS MONTH IN WESTERN NEW YORK

The following appeared in *The Double Bond*,
September 1946

“Chemists are real people”

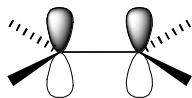
A high school student writes to thank the members of this section for the recent meeting of the A.C.S., and expresses his surprise in finding “chemists are not dried-up old crabapples”. This caused us considerable amusement until we soberly weighed the intended compliment, and decided that it is probably true that the layman is justified in thinking chemists “out of this world”.

One of the best magicians of all times wrote that children were more difficult to fool than adults. We have permitted chemists to be portrayed in the movies as dreadful monsters hiding behind a maze of test tubes, beakers and distillation apparatus. We know that few motion pictures depict the chemist as anything but a mysterious, dangerous, or evil person. If by any chance the chemist is to be shown as a humane sort of being, then it is the vogue to portray him as a medical man ...

The answer is clearly evident. The chemist *must* – if he intends to derive the benefits of society that he deserves – come out of his laboratory and meet the public as the other professions do. He probably will be embarrassed if someone hands him some coal and water and asks him to combine these to produce a pair of nylon hose. He may be asked to demonstrate the procedure for making rubber out of coal, limestone and salt. It will be left up to him to correct the false impressions that have been created in the mind of the public by some unscrupulous advertising.

By joining fraternal and civic groups, the chemist can obtain excellent opportunities for proving that he is no different from other individuals. When the chemist is secure professionally, he will not need unionization or state licensing to protect his interests. To do this, all that is necessary is to prove that “chemists are real people”.

(This editorial was reprinted through the courtesy of the MEMPHION.)



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