

the Alembic



Chair's Corner



The February meeting of the Section was one to remember. Thirteen of us were treated to a fantastic tour of the Donaldson Company in Stevens Point. Scott Jackson, a production supervisor at the plant, did an excellent job of showing us the in's and out's of making industrial filters. Rarely in today's environment does a manufacturing plant let the touring group get as close to the equipment as we were allowed. We saw production lines anywhere from one that was quite old that was used to make specialty filters at a rate of one hundred an hour to a state of the art machine that produced two thousand filters per hour.

The upcoming meeting on St Patrick's Day looks very interesting also. Tim Scott, a research scientist at the Forest Products Lab in Madison, has been working on a simulation program for making paper. Steve Nieland has seen some of Tim's work and says that the slides are something to see. Come join us for dinner at Spiedini's Italian Restaurant and then it's a short drive to the UWSP campus for a presentation on a subject that is near and dear to the hearts of Wisconsinites, paper-making.

In preparation for the Award's Banquet in May, we all should be thinking of whom to nominate for our Section Awards. Let me refresh your memory on the awards we give.

Outstanding Service to the Section Award – the recipient receives a plaque.

This award recognizes a member for all the time and effort spent serving the Section and its members. The last two awardees are Tom Zamis (2003) and Tom Marty (2002).

Outstanding Contribution to Chemistry Award – the recipient receives a plaque.

This award normally has been given to a member of the Section. The description of the award only requires the recipient to reside within the boundaries of the Central Wisconsin Section. A nominee's vita should contain outstanding contributions to chemistry or a chemistry related field through publications, presentations, or other ways of communicating chemistry to the profession and the public at large. The last recipient was past Chancellor Tom George of UWSP in 2002.

College Chemistry Senior Award - the recipient receives a plaque and a monetary award.

These nominations usually come from the Chairs of the Chemistry Departments of the Universities within our Section.

Outstanding High School Teacher Award – the recipient receives a plaque and a monetary award.

We all know how important it is to have an inspiring teacher for our first exposure to the study of chemistry. Dave Lewis does an outstanding job of finding an awardee for this very important honor.

Outstanding High School Student Award – the recipient receives a plaque and a monetary award.

Laura Cole does an excellent job each year of presenting the opportunity for high school students in our Section to compete in the Chemistry Olympiad. Students take an exam on the local level that could possibly qualify them for participation in a national competition. The senior student with the highest score on the local exam is chosen as the

recipient of our Outstanding High School Student Award.

As you can see, awards are a big part of the activities of the Central Wisconsin Section. Please give this matter some serious thought and come up with some very worthy nominees. Send your selections to me.

See you at the meeting on Wednesday, March 17, in Stevens Point.

Don

ACS - CWS Mini-Directory

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American Chemical Society

Central Wisconsin Section



"Simulation of the Papermaking Process"

by

C. Tim Scott,

General Engineer

USDA Forest Service - Forest Products Laboratory

Fiber Processing and Paper Performance

Wednesday, March 17, 2004

7:30 PM Science Building, *Trytten Lecture Hall*. Room A121
UW – Stevens Point

6:00 Dinner, Spiedini's Italiano Ristorante



Our Mission

To conserve fiber resources by developing the knowledge and technology needed to better utilize a fiber supply from a wide range of biomass resources, increase the use of recycled fiber, improve paper performance and address environmental concerns.



About the Speaker

Education

B.S. 1981, Engineering Mechanics, University of Wisconsin

Research Experience

C. Tim Scott has extensive experience in paper recycling technologies, extrusion processing, and paper mechanics. His research experience at the Forest Products Laboratory spans 14 years and has resulted in several publications in the area of paper physics and recycling. His research efforts have contributed significantly to pulp molding and extrusion process innovations.

Prior to the meeting, a 6:00 PM dinner will be held at Spiedini's Italiano Ristorante, 1010 Post Road, Plover (Just south of HH on Business 51 (Post Road)). *After dinner, drive north on Business 51 (Post Road becomes Division St) to Fourth Ave. near campus, turn right, and park in the metered (free after 7) lot X.*

Reservations may be made by calling Barb Klein (Chem. Dept. office) at 715-346-2888 (or email bklein@uwsp.edu) by 4 PM on Tuesday March 16.

ACS-CWS Web Page

www.uwsp.edu/chemistry/acscws/

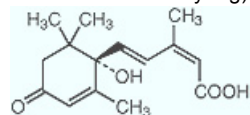
Contains up-to-date information about section activities including all issues of the Alembic and meeting notices.

ACS - Central Wisconsin Section 2004 Meeting Schedule

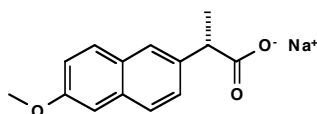
DATE	LOCATION	SPEAKER	TOPIC	HOST
March 17	Stevens Point	C. Tim Scott	Simulation of Papermaking Process	Steve Nieland
April 14	Stevens Point	Dr. Michael C. Cann	Pollution Prevention: A Paradigm Addressed Through Green Chemistry	Marv Lang
May 4	Eau Claire	Dr. R. Paul Philp	Development of Analytical Techniques Used in Organic Geochemistry, Awards Banquet, Spouses Night	Dave Lewis
Sept. 16	Marshfield	Dr. Carolyn Fisher	Science Careers in the Food Industry	
October 6	Wisconsin Rapids	Dr. John D. Petersen	Molecular Wires: Building Molecules to Move Energy and Electrons	
November	Stevens Point	James Showalter	The Future of the Transportation Industry	
December	Marshfield		Meeting-in-Miniature	

Molecules of the Month

(see the entire collection by visiting www.chemistry.org)



Abscisic acid is a plant hormone that regulates seed germination among other functions. If unseasonably warm weather occurs before the end of winter, abscisic acid can enforce plant dormancy until spring.



Naproxen sodium, a nonsteroidal anti-inflammatory drug (NSAID), inhibits the action of cyclooxygenase enzymes. This blocks a key step in the formation of prostaglandins, chemicals associated with inflammation. The commercial product consists of the active enantiomer only, unlike ibuprofen, an NSAID that is sold as a racemic mixture.

One cannot lead without putting others first.

Take your work seriously, but never yourself.
--Margot Fonteyn, Dancer

Character consists of what you do on the third and fourth tries.
--James A. Michener

Everybody is ignorant, only on different subjects.
--Will Rogers

THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, Cal. State Univ., L A

My last two columns were devoted to an analysis of the contents of an early twentieth century inorganic chemistry textbook that I recently acquired at a local flea market. At the same time I also purchased a physics text of the same period, and it is instructive to look at its contents in our pursuit of the science curriculum of the period. The book is "A First Course in Physics" by Robert Andrews Millikan, Ph.D., Assistant Professor of Physics in the University of Chicago, and Henry Gordon Gale Ph.D., Instructor in Physics in the University of Chicago. It was published by Ginn and Company in 1906 and is generously illustrated.

The senior author, Robert Millikan, is, of course, one of the giants of twentieth century science. His definitive work on the charge on the electron earned him the Nobel Prize in physics in 1923. By that time he had moved from Chicago to Pasadena and had become the President of the California Institute of Technology. Henry Gordon Gale also had a distinguished career in physics. He remained at Chicago becoming a Full Professor in 1916. He served as Department Chair and Division Dean. His work was principally in astrophysics and he published many articles and books in that subject.

It is fitting for a column on science history to note that the frontispiece in the Millikan and Gale text is a portrait of Galileo. Indeed the whole text is imbued with a sense of the history of physics. It was published along with a companion laboratory manual (I haven't been fortunate enough to find a copy of that yet) and was intended for use in "the elementary work in physics in the University of Chicago, particularly in the University High School of the School of Education and the affiliated secondary schools." The contents of the approximately 500 pages are wide ranging covering virtually all fields of beginning physics. There are some wonderful trivia along the way. For example in an opening section on measurement we learn that "the mean length of the male foot in the United States, according to measurements made upon 16,000 men in the United States army, is 10.05 inches."

An interesting feature of this text is the very large number of descriptions of the application of principles of physics to everyday phenomena and useful appliances. For example the chapter on gas pressure discusses ballooning, mentioning the

exploits of the daring English astronauts Glasier and Coxwell who, in 1862, ascended to a height of some 7 miles where the barometric pressure is about 0.25 atm. and the air temperature about -60oF. It also describes the siphon, the air pump, the force pump, the lift pump, the Cartesian Diver, the diving bell, and the gas meter. The section on heat engines discusses in some detail the steam engine, the steam turbine, and the large, stationary gas engine. The automobile engine (still something of a novelty) gets only a brief mention. But we do learn that the largest steam ship so far, the 30,000 ton Cunard liner Carmania, is driven by three steam turbines with a total of 1,250,000 blades. Refrigeration at this period seems to be limited to the manufacture of ice and the cooling of cold-storage rooms and factories. The only refrigerant gas mentioned is ammonia; beware of leaks.

In contrast to the chemistry text I discussed recently, where complete ionization is only one possible explanation of electrolyte behavior, Millikan and Gale state forthrightly, in a chapter including the chemical effects of the electric current, their acceptance of this view: "In accordance with the theory now in vogue among physicists and chemists, when hydrochloric acid is mixed with water to form a dilute solution, the HCl molecules split up into two electrically charged parts, called ions, the hydrogen ion carrying a positive charge and the chlorine ion an equal negative charge. The phenomenon is known as dissociation."

Gale's interest in astrophysics is apparent in the section on Doppler's principle applied to light waves: "...some stars are moving through space toward the solar system with a velocity of 150 mi. per second while others are moving away with almost equal velocities." And perhaps Millikan's enthusiasms are indicated in sections on cathode ray particles, new theories of the constitution of matter, and radioactivity. I will close with a quotation from the final paragraph of this text. "The most vitally interesting question which the physics of the future has to face is, Is it possible for man to gain control of this tremendous store of subatomic energy and to use it for his own ends?" Thirty-nine years later one answer was given to this question at Hiroshima.