

the Alembic



Chair's Corner



The crowd was small at the October meeting but the dinner and the presentation were excellent. Ned Heindel described the current research on Alzheimer's disease. The bottom line is that researchers feel that they understand the cause of this dysfunction but they have yet to find an intervention procedure that does not do more harm than good to the body.

If anyone was able to do anything for National Chemistry Week, please send me a note describing the activities. I will include the information in our annual report. My son was married on Mole Day, October 23. Do you think I could do that as a NCW activity?

The November meeting will feature our current national ACS President, Chuck Casey. Here's your chance to find out where your dues money is going, what direction our science is going, and what can the ACS do to further your professional development. Come to the meeting loaded with questions.

I hope to announce at the November meeting the candidates for Chair-elect and Secretary-Treasurer of our Section for 2005. It is always difficult to find people who are willing to commit their time and energy to these jobs. If you are interested in getting involved in the Section or know someone who you believe would be interested in serving, please let me or Steve Nieland know.

The plans for the December "Meeting In Miniature" are in progress. I'm hoping for three or four twenty-minute presentations and three or four posters. This is a great opportunity to learn more about what our colleagues are doing on a daily basis. Please consider taking part in the program.

Don

ACS - CWS Mini-Directory

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**HAPPY
THANKSGIVING**





American Chemical Society

Central Wisconsin Section



"Challenges for Chemists"

by

Dr. Charles P. Casey

Homer B. Adkins Professor

Department of Chemistry

University of Wisconsin - Madison

and

President, American Chemical Society



7:30 PM Wednesday, November 17, 2004

UW - Stevens Point Room A121 *Trytten Lecture Hall*

6:00 Dinner, Michele's Restaurant

Abstract

As the 2004 President of the American Chemical Society, I am trying to focus attention on the challenges that chemists and chemistry face. Some of these challenges were outlined in the National Research Council report "Beyond the Molecular Frontier: Challenges for Chemistry and Chemical Engineering". I hope to catalyze discussion of the key problems that chemistry faces. I urge all chemists to make a list of five major societal problems that will require advances in basic chemistry and of five advances in basic chemistry that will enable new opportunities for chemists. This is kind of information that chemists need when presenting the case for support of chemistry to the public, to Congress, and to non-chemist leaders of government science agencies.

Another challenge faced by chemistry is to rethink graduate education in chemistry. The Carnegie Initiative on the Doctorate has helped to bring together 12 universities to share their ideas on retooling the PhD in chemistry. At Wisconsin, we are reexamining the PhD program because we recognize the growing interdisciplinary nature of research and the increased emphasis on teamwork. We are also questioning whether the traditional research divisions still make sense. We have begun the process by considering the characteristics our successful graduates should possess and whether current requirements are the best way to achieve these outcomes.

Biographical Sketch

Dr. Charles P. Casey is Homer B. Adkins Professor of Chemistry at the University of Wisconsin-Madison. His research focuses on mechanistic organometallic chemistry. Current studies include synthesis of zirconium-alkyl-alkene complexes as models for intermediates in metallocene catalyzed alkene polymerization; mechanistic studies of hydrogenation catalysts involving simultaneous transfer of an acidic hydrogen and a metal hydride; and synthesis and reactions of η^3 -propargyl metal complexes. He is author of more than 250 papers in organometallic chemistry. He has served as Chairman of the Organometallic Subdivision of the ACS and as Chairman of the Inorganic Chemistry Division of the ACS, and is a member of the editorial advisory board of the *Journal of the American Chemical Society*. He is currently President-Elect of the ACS. In 1993, he was elected to the National Academy of Sciences and to the American Academy of Arts and Sciences. He received the A.C. Cope Scholar Award of the ACS in 1988, and ACS Award in Organometallic Chemistry in 1991.

Prior to the meeting, a 6:00 PM dinner will be held at Michele's Restaurant, 513 Division Street, Stevens Point. Reservations may be made by calling Cristina Altobelli (Chem. Dept. office) at 715-346-2888 (or email caltobel@uwsp.edu) by noon on Tuesday November 16.

ACS - Central Wisconsin Section 2004 Meeting Schedule

DATE	LOCATION	SPEAKER	TOPIC	HOST
October 5	Stevens Point	Dr. Ned Heindel	An Approach to Anti-Alzheimer's Therapeutics	Dr. Braun
November 17	Stevens Point	Chuck Casey	Challenges to Chemists	Don Showalter
December	Marshfield	Section Members	Meeting-in-Miniature	

THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles.

Editorial pages and letters columns in many journals of our chemical community bemoan the fact that chemistry has become a discipline that is attracting fewer students than used to be the case. The American Chemical Society has invested money and time in the production of textbooks designed to increase the attractiveness of chemistry to students at various levels. In these discussions and actions I see little reference to an obvious change in "environment" which has had, I believe, a substantial impact on student interest in chemistry. To use a hackneyed but appropriate phrase, when I was a boy chemistry was a lot of fun. If you have read Oliver Sacks' splendid piece of autobiography "Uncle Tungsten" you'll know just what I mean; (and if you haven't read it, rush out and get hold of a copy.) I don't mean to downgrade all the safety rules and regulations that put justified barriers in the way of young people who want to buy and experiment on, let us say, concentrated nitric acid; or magnesium powder; or potassium perchlorate. Clearly those safeguards are necessary. But they may inadvertently cut off the young experimenter from some of the more entertaining aspects of our subject.

These musings are prompted by my recent acquisition of a copy of a book: *The Young Chemist: A Book of Laboratory Work for Beginners* written by John H. Appleton, A.M., Professor of Chemistry in Brown University. My copy is the second edition published by Cowperthwaite and Co. in Philadelphia in 1878. It belonged to Mary S. Anthony who attended Providence High School. Let me quote from the Preface: "Every experienced teacher has remarked the wonderful ease and pleasure with which beginners in chemistry - when they are allowed to perform experiments- grasp the facts and principles of the science." So what course of experiments does Professor Appleton recommend to beginners, under, it must be conceded, the watchful eye of a teacher, for this is a laboratory text for high schools?

The first experiment described is simple. Potassium liberates hydrogen from water. Both take fire. Such a demonstration of a fundamental chemical reaction will surely make a strong impression on a student, and I would guess that no DVD showing this result would have the same impression as the actual experiment. This is followed by a similar experiment with sodium and hot water, to ensure that the hydrogen produced takes fire. Professor Appleton next recommends etching glass with hydrogen fluoride prepared in situ by reaction of fluorspar with concentrated sulfuric acid. And so it goes on. The student removes color from calico cloth with bleaching powder; prepares bromine from potassium bromide; prepares and sublimates iodine; burns sulfur, charcoal, and iron in oxygen;

and so forth. The experiments are all qualitative; usually attractive and often spectacular; and would, I believe, interest beginners in the wonderful world of chemistry. Perhaps interest them enough to inspire them to take a further, and quantitative, course in the subject?

This small volume (110 pp.) is not without interest for the student of the history of chemistry. The Introduction is on the nomenclature and notation of chemistry. It contains a Table of the sixty-four elements with their atomic weights. Gallium is there but not germanium; beryllium is still known as glucinum; "didymium" (later shown to be a mixture of other lanthanides) is included with an atomic weight of 147. But the most interesting section is on notation. The author recommends the graphic symbols (sometimes called "sausage" symbols) of M. Kekule to represent monad, dyad, triad, and tetrad atoms or radicles (Appleton's spelling). We would call these monovalent, divalent, trivalent, and tetravalent species respectively. He also comments on glyptic symbols which we might call models. A distinction is drawn between empirical and rational formulas. Thus for nitric acid, of empirical formula HNO₃, the rational formula is given as HONO₂.

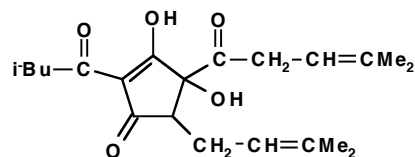
We can learn something from this nineteenth century text, not only about contemporary views of chemistry; but perhaps, also, ways in which we can help make chemistry more attractive to students?

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.

Molecule of the Month



Beer flavor is a complex balance of sweetness from sugars and bitterness from the humulones in hops (*Humulus lupulus*) flowers. When wort (unfermented beer) is boiled, humulone molecules rearrange to form the more soluble **isohumulones** (one example shown here). Isohumulones retard bacterial growth and contribute to beer's bitter flavor.

