



# the Alembic



## Chair's Corner

Dear Fellow Chemists,

We should have a fascinating meeting in Eau Claire next Monday. Dr. J. Ernest Simpson of California State Polytechnic Institute will discuss the chemistry of wine. I understand there will be some audience participation in the form of tasting. Please see the meeting announcement for details, then join us in Eau Claire.

Our nominating committee, chaired by Robin Tanke, is making good progress on a slate of candidates for next year's Section officers. They will be reporting their results at the Section meeting next Monday evening. Offices due for election this year are chair-elect, secretary-treasurer, councilor, and alternate councilor. These officers plus the chair and the immediate past chair and several appointed committee chairs will serve as the executive committee. If you are interested in serving or wish to nominate someone, please call Robin. Per our bylaws "nominations from the floor or by petitions are in order, following the report of the Committee. Written petitions must be signed by three members of the Section and received by the Secretary on or before the seventh calendar day following the Committee's report. No nominee's name shall be placed on the ballot unless the nominee

has stated a willingness to serve if elected." Election ballots should be included in the November Alembic.

Arrangements for our November meeting are coming together. Dr. Umesh Agarwal, USDA Forest Service, Forest Products Laboratory in Madison will discuss the analytical applications of Raman spectroscopy. The date will be November 18<sup>th</sup> or 19<sup>th</sup> or 20<sup>th</sup>. The meeting location has to be settled after we know the exact date, but it will be in either the Wisconsin Rapids area or Stevens Point.

National Chemistry Week is October 20-26. Robin Tanke is our NCW chair. She can help with ideas for demonstrations or other activities. Call a local school and volunteer a demonstration during National Chemistry Week. Or volunteer to do demonstrations at a Mall. It will be more fun if you include a friend or two. Contact Robin (rtanke@uwsp.edu) and let her know what you are doing and ask for help or materials. The theme this year is "Chemistry Keeps Us Clean".

*Dave*



### ACS - CWS Mini-Directory

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American Chemical Society

Central Wisconsin Section



## "Chemistry of Wine"

by

Dr. J. Ernest Simpson

California State Polytechnic University

Monday, October 7, 2002  
7:30 PM Phillips Hall 267  
UW – Eau Claire

5:30 - 6:00 Cash Bar, 6:00 - 7:00 Dinner, Sweetwaters Restaurant

### Abstract:

The talk will include an overview of wine and wine making and more detailed descriptions of the chemical composition of grapes and wine, laboratory methods for analysis of grapes and wines, sensory and organoleptic methods used for wine, the role of tannin and other phenolic compounds in wine, and some potential health aspects of wine. This talk is ideally designed for a 50-65 minute presentation but it can be condensed to 30 minutes. It can also be preceded or followed by or combined with a 60-90 minute "component and varietal analysis", which allows audience participation. During a component analysis the audience will be given a reference wine sample with known levels of components such as acid, sugar, alcohol, etc. and then "unknown" samples in which one or more components have been increased by a known increment. During a varietal analysis a representative number of white and red wines will be compared. A local section may elect to have part of all of the varietal analysis combined with the meal portion of their meeting. Local sections or groups wishing to have the component and varietal analysis will need to give the speaker 6-8 weeks advance notice in order to allow the sample to be prepared and shipped to the meeting site as well as to arrange other details involved in putting on such an analysis. The cost of the wine samples, which will be prepared by a California winery, will vary depending on how many samples are presented. The cost should be in the \$4-5 per person range.

### The Speaker:

Dr. Simpson joined the Chemistry Department at California State Polytechnic University, Pomona, in 1968 after completing his B.S., M.S., and Ph.D. (organic chemistry) at the University of New Mexico and spending one year as a visiting chemistry professor at Pomona College. In 1973-74 he was on leave as visiting research associate in the Department of Enology and Viticulture at U.C./Davis. He is an active member of the American Society for Enology and Viticulture and has served on the editorial review board committee for the society's journal. He has published a California wine guide. At Cal Poly he has developed industrial chemistry and cooperative education courses/programs. He is currently the Director of Cooperative Education for Cal Poly. His research interests and publications are in the areas of polycyclic aromatic hydrocarbons, Carbon-13-labeled compounds, and phenolic compounds, especially in grapes and wine. In 1984 and 1986 through 1990 he was selected for Exceptional Merit Service Awards at Cal Poly. In 1996 he was selected as the outstanding advisor in the College of Science, and his co-op program was chosen as the best in California. He is a member of ACS (San Geronio section chairman, 1973), California Association of Chemistry Teachers (program chairman and southern section president, 1985-87), California Cooperative Education Association (president 1996-97), and Sigma Xi.

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The meeting will be at Sweetwaters Restaurant, 1104 W. Clairemont Ave, Eau Claire (near the intersection of Clairemont (US 12) and State Highway 37). Dinner reservations should be made by contacting **Dave Lewis** at 715-836-4744 or email [lewisd@uwec.edu](mailto:lewisd@uwec.edu) **before noon on Monday, October 7.**

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ACS - Central Wisconsin Section 2002 Meeting Schedule				
DATE	LOCATION	SPEAKER	TOPIC	HOST
Sep. 11	Stevens Point	Stanley Manahan	Environmental Chemistry	Tom Zamis
Oct. 7	Eau Claire	J. Ernest Simpson	"Chemistry of Wine"	Dave Lewis
Nov. 18 -20 ?	Point or Rapids	Umesh Agarwal	Raman Spectroscopy	Dave Thiel

### Starting with Safety Now Available Online

The highly popular ACS Video Course, Starting with Safety, has been adapted for delivery via the Internet. The Internet version includes all of the materials from the original Video Course including the video scenes and the Teacher's Guide. As an added bonus, the complete ACS Video Course, Seeing the Light, Eye and Face Protection, is also included in this ACS Internet Course. Now you and your students can access this valuable training program from any computer connected to the Internet at any time, day or night. (We do recommend a relatively high-speed connection, such as a DSL, cable modem or higher. And you will need to install the Flash 6 player to view the videos). This program is designed to be used as part of a standard high school or introductory college chemistry curriculum that is taught by an experienced chemistry teacher. The program is NOT meant to be a stand-alone training course. Students should only use this program under the supervision of a qualified teacher.

For complete details about this program, visit the American Chemical Society website at <http://chemistry.org/elearning>.

#### ACS-CWS Web Page

[www.uwsp.edu/chemistry/acscws/](http://www.uwsp.edu/chemistry/acscws/)

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

### This Month in Chemical History

by Harold Goldwhite, California State University, Los Angeles  
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A comprehensive review of all important developments in chemistry during the year 1904 in only 280 pages that was the ambitious goal of the Editors of the first volume of "Annual Reports of the Progress of Chemistry" issued by the Chemical Society in London in 1905. In my last column I discussed one short portion of these reviews, that concerned with atomic structure. The review of inorganic chemistry begins with obituaries of the luminaries of that branch of chemistry who died during 1904 including Alexander Williamson, as well known for his work on organic ether synthesis as on constitutional questions on the nature of molecules. Others who were memorialized included the Dutch chemist Lobry de Bruyn, isolator of pure hydrazine and hydroxylamine; and Clemens Winkler, whose discovery of germanium with properties as predicted by Mendeleev helped establish the worth of the periodic table.

Talking of Mendeleev the great Russian proposed in 1904 the inclusion of a new Group Zero in front of Group I in the periodic table to accommodate the elements helium, neon, argon, krypton, and xenon recently discovered by Sir William Ramsay and his pupils. But Mendeleev adds a new (and later discredited) idea. Helium belongs to the second row of the table along with the elements from lithium to fluorine, and therefore hydrogen needs a companion "inert" gas with an atomic weight less than that of H. This proposed new element, let us call it y as Mendeleev did, should have an atomic weight of 0.4 or less. It may be identical with "cononium" "whose spectrum was first observed by Young and Harkness in the solar corona during the eclipse of 1869. Nasini, Anderlini, and Salvadori considered that

they had found traces of coronium in their examination of the spectra of volcanic gases(1893)."

It is interesting to note that apparently simple questions, such as the atomic weight and placement of beryllium in the periodic table were still controversial in 1904. While Parsons finds an atomic weight of 9.113 (O = 16) placing Be firmly in Group 2 the Russian chemist Tanatar suggest that beryllium is quadrivalent with an atomic weight of 18.2 which is more in accord with its specific heat and the Law of Dulong and Petit. With respect to coordination chemistry the year 1904 lies at a crossroads. Alfred Werner had been publishing articles on his new views of coordination compounds for several years, but his major summarizing treatise was still a year in the future. The pages of 1904's Annual Reports carry Werner-like coordination diagrams in presenting work of Pfeiffer on compounds of Cr(III) with ethylenediamine and on the very next page Jorgensen chain diagrams of other chromium complexes. In the review of aliphatic chemistry the relatively new Grignard reaction, first described in 1900, receives pride of place. The Report gives proper credit to Barbier, Grignard's professor, for first suggesting the use of magnesium instead of zinc in the preparation of organometallic reagents. One of the great injustices of the Nobel prize process was the omission of Barbier when Grignard was awarded the prize for chemistry, along with Sabatier, in 1912. As the 1904 report says "Although the results are in many cases quite analogous to those obtained by the use of organo-zinc compounds, the preparation of the reagent and simplicity of working details offer very great advantages over the older method..." That method, the use of organo-zinc reagents in organic and organometallic synthesis, was introduced by the English chemist Edward Frankland in 1849 and led him to the idea of valency.

