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Fifty Years Ago in The Southwest Retort

The tour speaker for March is **Dr. Richard Fuchs** of the University of Texas (now UT-Austin). His topics will be either "Factors Affecting the Rates of Nucleophilic Displacement Reactions" or "Ring Opening Reactions of Epoxides."

Dr. Sean McGlynn of LSU will give an invited talk in April at the ACS meeting in Cleveland. He is the holder of \$36,000 in grants from NSF and PRF.

At Rice Institute **Dr. Richard B. Turner** was appointed Director of Chemistry Graduate Studies. Welch grants were received by **Drs. Edward S. Lewis, Robert F. Curl,** and **Ronald L. Sass.** At Humble Oil in Baytown, courses were presented by **Dr. W. R. Shaw** of the University of Texas and **Dr. Cheves Walling** of Columbia, respectively, on "Advanced Chemistry for Engineers" and "Free Radicals in Solution."

Dr. Peggy Dunlap (now Dr. Peggy Wilson) gave a talk on Feb. 11 to the chemistry majors at Woman's University Texas (TWU), discussing opportunities for women trained in the sciences Dr. Wallace R. Brode is present a Welch Lecture at TWU on Mar. 7. Dr. Cal Vanderwerf of the University of Kansas will visit the TWU chemistry department Mar. 21-23. TWU has received a \$16,410 grant from NSF to conduct a summer institute for study in chemistry for forty girls who have completed the junior year in high

school. **Dr. Robert W. Higgins** will be Director of the program.

The Welch Foundation has given grants to Texas A&M faculty members **Drs. Russell Couch, Raymond Reiser, Donald Hood, C. K. Hancock** and **A. W. Jache. Dr. Melvin Newman** of Ohio State was the Welch Lecturer at A&M on Jan. 26. The Welch Lecturer at Baylor on Feb. 3 was **Dr. Paul H. Emmett** of Johns Hopkins.

At the University of Arkansas ten advanced degrees, seven M.S. and three Ph.D. degrees, were granted during January graduation exercises. Their mentors were E. S. Amis, S. Siegel, P. Kuroda, Jacob Sacks, K. Stern, L. C. Howick, and R. W. Fink.

In San Antonio the Southwest Research Center will host a symposium on "Psychophysiological Aspects of Space Flight" May 26-27 under the sponsorship of the School of Aviation Medicine, USAF Aerospace Medical Center. A short course in "Strain Gage Techniques" will be held April4-8.

Minor T. Jackson, Jr. has joined the research department of Lion Oil Company in El Dorado, AR. However, the company's owner, Monsanto Chemical Co., has announced plans to move the administrative forces of Lion Oil to St. Louis in the summer of 1961.

New members of the ACS South Texas Section are **Drs. W.** L. Reilly and P. L. Parker.

****Continued on Page 12****



Southwest Retort

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Southwest

Retort

SIXTY-SECOND YEAR

March 2010

COPENHAGEN

Reviewed by E. Thomas Strom

"Wonderful, wonderful Copenhagen/Friendly old girl of a town/ 'Neath her tavern light

On this merry night/ Let us clink and drink one down." Words by Frank Loesser.

Readers of a certain age will hear in their mind's ear those lyrics above sung by Danny Kaye, playing the title role in the movie "Hans Christian Anderson." Travelers to Copenhagen will have memories of a beautiful town with canals abounding and beautiful palaces. Copenhagen was also the location of last year's global warming conference. However, readers knowing will remember physics Copenhagen was the site of the Institute for Theoretical **Physics** established in 1921 for Copenhagen native Niels Bohr. For many years Copenhagen was the place to go to study physics at the hands of masters. Those knowing Broadway plays will recognize "Copenhagen" as the title of a demanding play by Michael Frayn, which won a Tony award.

Kudos go to D-FW Section Chair Denise Merkle for arranging such an unusual section meeting. The February meeting was held at Stage West in Fort Worth and featured attendance at the play "Copenhagen." The social hour preceding was sponsored by Dr. Nelson Claytor of Fresnel Technologies. Dr. Claytor gave a 15 minute introduction prior to the play to explain some of the difficult scientific concepts to the audience---concepts such as complementarity, uncertainty, and wave-particle duality.

Germany invaded Norway and Denmark in April, 1940. Tiny Denmark was overrun in a day, while Norway took longer to be conquered. Niels Bohr was the child of a Jewish mother. so he was always in danger of falling victim to Nazi anti-Semitism. For a time the German occupation forces left the Jews alone. In 1943 under prodding from Berlin, the Germans finally planned a move to round up all the Danish Jews. The Danes learned of the plan and were able to move the overwhelming majority of their Jews, Bohr among them, to Sweden before the German occupation forces acted. Bohr was evacuated to England and

eventually wound up in Los Alamos, working on the atomic bomb project.

The play deals with events of September, 1941, when great German physicist Werner Heisenberg paid a visit to his old mentor Niels Bohr in Copenhagen. The two went outside for a ten minute walk and something happened between them, something that has never been satisfactorily explained. This nonlinear play deals with that meeting, offering several interpretations of what happened. Writer Frayn has the task of having his protagonists explain esoteric concepts of physics such as wave/particle duality, complementarity, and uncertainty in such a way that an audience not composed of physical scientists could get some understanding of what was going on. I spouses in the surveyed several audience who were not scientists, and they felt that they could follow the arguments easily enough.

The nonlinear structure allows some personal glimpses of events in both Bohr's and Heisenberg's life---the death of one of Bohr's sons in a tragic boating accident and Heisenberg's near execution by a soldier. Heisenberg went on to head an important part of the German atomic bomb project. He somehow mistakenly thought that enough uranium-235 could NOT be isolated for use in a bomb, so he focused on using a nuclear reactor to make plutonium. The German atomic bomb project came to nothing. People have since asked the question, "Did Heisenberg really make a goof as to the suitability of uranium-235, or did he deliberately sabotage the German atomic bomb project?"

What went on during that ten minute walk? Did Heisenberg ask Bohr

about whether it was right for a German citizen to work on the German war effort; *i.e.*, work on the atomic bomb? Was Heisenberg seeking to carry Bohr's accelerator off to Germany? Several options are given, but there is no definitive answer. I left wanting to read biographies of Bohr and Heisenberg to see if I could make any intelligent guesses.

At the end of the play I was left with great admiration for both the author and the actors. Up to this point. Fravn had been known for comedies, especially for his farce "Noises Off." This was a complete about face, and he handled it magnificently. However, the actors were every bit as good as the writing. Jerry Russell played Bohr; Amber Devlin his wife Margrethe; and Chamblee Ferguson was Heisenberg. All three fit their roles wonderfully, but Ferguson has the showiest part as the volatile Heisenberg, who has the bulk of the dialog. Dallas Morning News critic Lawson Taite gave Ferguson two and a half cheers as opposed to three cheers for the other two actors. Dallas Observer critic Elaine Liner thought Ferguson reached a higher level of his craft in his portrayal of Heisenberg. I have to go along with Liner; Ferguson was just magnificent.

Just what are we prepared to do for our country if the need arises. Do patriotism and morals ever collide? I reflect on my two years in the US Army Chemical Corps. Our officers assured us that any chemical warfare would only be defensive, and they pointed out that one in every four Russian artillery shells was filled with nerve gas. I had qualified as a sharp-shooter, and they asked me, "What was

the difference between my killing a Russian soldier with my M-14 rifle or with a nerve gas grenade?" I never had a good answer for that one.

By the time you read these lines, the run of the play will have ended; and certainly no reader in the other five ACS sections taking *The Retort* is likely to have attended. The point is that this play is now available for

performance by local theatre companies. Consequently, all of our readers may sometime in the future have a chance to see this play. To have your mind stretched, to vicariously live the life of these genius physicists, to think about what you are prepared to do for your country---all these are good reasons to see a performance of "Copenhagen" if you get a chance.

CHEM GEMS & JOULES

BCCE 2010: The Year of CaNe is Upon Us. Hosted by the UNT Department of Chemistry, Aug. 1-5, this summer is the 21st Biennial Conference on Chemical Education (BCCE). Sixteen concurrent sessions of symposia have been scheduled in eight time blocks. There are 66 symposia and almost 800 papers giving 112 sessions running from Sunday afternoon through Thursday at noon. If listening to papers is not enough, then check out the list of over 70 workshops, some with multiple sessions. Around lunch time Monday through Wednesday are three packed poster sessions featuring the latest and greatest in chemical education research plus other events. What makes a BCCE exciting is the opportunity to gather in an informal setting to socialize and to share ideas, expertise, and experiences with colleagues who are committed to excellence in chemical education. You may sit down at lunch with someone you just heard give a presentation of interest or chat with the author or publisher of the textbook or lab manual you are using or plan to use or would like to make a pitch for a new product.

The opening ceremonies will begin at 6:02 p.m. in The Auditorium on Sunday night to be followed by the

opening of the Exhibit Hall in the Union packed with over 50 exciting vendors. For a taste of Texas, the gala on Sunday night will include great drink and grub plus the recently Grammy-nominated UNT One O'Clock Lab Band. On Tuesday morning at 6:02 a.m. we'll have the Mole Fun Run Challenge. Tuesday evening will have a BBO bash with live Texas music by Grammy-nominated Crawfish Band plus other rodeo events. The Mole Day breakfast (Gateway Center) will begin at 6:02 a.m. on Wednesday morning, and on Wednesday night comes the long awaited Al D. Hyde and the Key Tones' pachanga accompanied by the JCE and 2YC3 Ice Cream Social. Planned field trips are to the nuclear facility at Comanche Peak, Billy Bob's Texas Dance Hall, Brushy Creek Vineyards, and the Denton Horse Country Tour.

Registration fees are \$250 for regular registrants, \$200 for secondary educators (with valid school ID or letter from your principal), and \$125 for graduate/undergraduate students (with valid school student ID). After June 2, 2010, you may still register for the conference, but with a \$50 late fee for each of the registration classifications. Guest registrations are available

at \$20 for the conference. Registration for children (under the age of 17) is available at \$10 for the conference, and there are also Li'l Wrangler events at \$15/day. All attendees must be registered as a participant or guest to take part in any of the BCCE events or tours. For information about all facets of the 21st BCCE check out our website, http://bcce2010.org. See y'all real soon, now, ya hear!

General Chair: Diana Mason, UNT, dmason@unt.edu. Program

Chairs: Amina El-Ashmaway, Collin College, ael-ashmaway@collin.edu; Maria Oliver-Hoyo, North Carolina State University, maria_oliver@ncsu.edu.

Thanks to Diana Mason for the above information.

Send material for this column to Mary Teasdale at owlcritic75@yahoo.com or to Tom Strom at tomstrom@juno.com.

Around-the-Area

University of Arkansas

Pulay Named to Academy. Distinguished Professor Peter Pulay has been named to the European Academy of Arts and Humanities. Known all over the world for his work in molecular quantum mechanics, Pulay is also a Fellow of the AAAS and has received numerous awards including the Schrödinger Medal of WATOC and the Alexander von Humboldt Senior Scientist Award.

Bob Gawley gave a lecture in November at the University of Miami, while Matt McIntosh gave a November lecture to the University of Arkansas at Fort Smith. Charles Wilkins appeared on the 20 year cumulative index of the Journal of the American Society for Mass Spectrometry as one of the 54 top contributors to the journal. In January faculty members Bob Gawley and Roger Koeppe and graduate student Melissa Weston presented posters at the 2nd Conference on Nanotechnology and Health Care held at the University of Arkansas Winthrop Rockefeller Institute. Also attending the conference were faculty members **Ryan Tian** and **Ingrid Fritsch.**

Heart o' Texas

Baylor University. Graduate students Jason Bell and Vanessa Castleberry successfully defended their research on their way to the Ph.D. respectively, mentors are. Their Charles Garner and Darrin Bellert The denartment welcomes **Dr.** Weigang Lu, who is a postdoc in the Farmer group.

Colloquium Speakers: Jan. 29, John W. Kenney, Concordia College; Feb. 5, Carey K. Johnson, University of Kansas; Feb. 12, Rebecca J. Sheesley, Baylor; Feb. 19, Michael J. Van Stipdonk, Wichita State, Feb. 26, Kevin Klausmeyer, Baylor; Mar. 5, Touradj Solouki, University of Maine.

South Plains

Eastern New Mexico University Faculty Position Open. Dr. Newton Hilliard is leaving to assume the departmental chair position at Texas Wesleyan University this fall. Eastern

New Mexico is currently searching for a biochemist. For information, see http://www.enmu.edu/services/hr/

Texas Tech University Dimitri Pappas presented a talk on "Integrated Cell Culture, Separations, and Analysis in Microfluidic Devices" at the 2010 Pittsburgh Conference in Orlando, FL. The symposium on "Recent Progress Toward the Total Analysis System" included ten speakers from around the world and was featured as a webcast symposium for the conference. Two of Pappas' students, Randall Reif and Michelle Martinez, also presented at the conference.

At the graduation commencement in December, Horn Professor **Richard A. Bartsch** hooded **Xiaodan Cao**. Xiaodan was the 50th graduate student from chemistry to complete a doctoral program under Bartsch's supervision.

Alumnus **Dr. Michael J. Pugia** based at the DX Point of Care site in Elkhard, IN was one of thirteen scientists from across Siemens AG to receive the 2009 Siemen's Inventor of the Year Award. Pugia received his Ph.D. in 1986 under Richard Bartsch.

East Texas

The speaker for the Mar. 4 section meeting at East Texas Baptist University in Marshall was **Dr. Jeffrey I.**Seeman. His topic was "Responsible Conduct of Science. The Development of the Woodward-Hoffman Rules." Part of the lecture dealt with the controversy surrounding E. J. Corey's contention that he had suggested to R. B. Woodward the concept at the base of the Woodward-Hoffman Rules. The speaker at the April 8 section meeting will be **Steven Dutch** of Ana-Lab.

Three student chapters from the East Texas Section have received awards for the 2008-2009 academic year. The Texarkana Chemistry Club received an *Outstanding* rating, while the North Texas Community College and UT-Tyler affiliates received *Commendable* ratings. The Texarkana College Chemistry Club also was recognized as a *Green Chemistry* chapter for the second year in a row.

Wichita Falls-Duncan

The 55th Annual Pentasectional Meeting of the Oklahoma Sections of the American Chemical Society will be held April 10 at the Embassy Suites Hotel and Conference Center Norman, OK. The conference chairs are Professors Charles Rice and Llovd Bumm. Besides the usual disciplinebased symposia, there will be other symposia dealing with POGIL, NMR, X-Ray Crystallography, Biofuels, Pharmacology, Natural Products. Nanotechnology, Oklahoma and Structural Biography Nexus.

Dallas-Fort Worth

Southern Methodist University Summerlin Named Sloan Fellow. SMU faculty member Brent Sumerlin has been named a 2010-2012 Alfred P. Sloan Research Fellow. This will provide Sumerlin a grant of \$50,000 over two years to support his research. Summerlin was also awarded an NSF Early Career Development Award in Dec. 2008. Brent received his Ph.D. from the University of Southern Mississippi in 2003. He then served as a visiting assistant professor at Carnegie Mellon University for two years before joining the SMU faculty in 2005.

Ed Biehl and his research group have started work on preparation of neuroprotecting agents supported by a \$450,000 2-year P-2 NIH grant. Ed has also received notice that the University of Pittsburgh Chemistry Department has given him the Distinguished Chemistry Alumni award. He will formally receive the award in Nov.

<u>UT-Arlington</u> Heather Lima has received an Eli Lilly travel award from the Womens' Chemistry Committee of the ACS to attend the San Francisco ACS meeting. She will present a poster on her work titled "Total Synthesis of 2-Aminokealiiquinone: An Application of Diels-Alder chemistry."

APRIL METROPLEX SEMINAR SCHEDULE

Seminars are occasionally postponed or cancelled. Check departmental websites or call the department before attending.

UT-Arlington. April 9, Ronald Breslow, Columbia, "The Origin of Homochirality in Amino Acids and Sugars on Prebiotic Earth." April 16, Nicholas Snow, Seton Hall, "Multidimensional Gas Chromatography of Drugs." April 23, Balaraman Kalyanaraman, Medical College of Wisconsin, "Mitochondria-Targeted Antioxidants in Breast Cancer Treatment." April 30, Baylor, Patrick Farmer, "HNO, Deceptively Simple But Decidedly Not! Biochemical Studies of the Reactions of Nitroxyl with Heme Proteins." May 7, E. Thomas Strom, UT-Arlington, "Probing Aromatic Inductive, Resonance, and Steric Effects via Electron Spin Resonance Using the Semidione Spin Label." Seminars are normally at 2:30 p.m. in Room 214, Baker Chemical Research Bldg.

<u>UT-Dallas.</u> April 2, Seth Rasmussen, North Dakota State, "Nitrogen Functionalized Fused-Ring Polythiophenes: Adventures in Synthesis and Approaches to Advanced Materials." April 8 (Note change of day), Charles Liotta, Georgia Tech, TBA. April 30, Rongchao Jin, Carnegie Mellon, "Controlling Nanoparticles with Atomic Precision." Seminars are normally at 2 p.m. in Room CN1.102 Conference Center.

<u>UNT</u>. April 9, Elki Kraka, SMU, "How Can We Control Chemical Reactions?" April 16, Aurora Clark, Washington State, TBA. April 23, Omar Yaghi, UCLA, "Metal-Organic Frameworks and CO2 Capture." April 30, Paul Marshall, UNT, "Forbidden Chemistry of Sulfur in the Gas Phase." May 7, Barbara Garrison, Penn State, "Cluster Bombardment of Solids: Atomistic, Mesoscale and Analytic Views." Seminars are normally at 3:30 p.m. in Room 106, Chemistry Bldg.

SMU. April 9, Janet Bluemel, Texas A&M, "Homogeneous Catalysts Immobilized on Silica by Optimized Linker Systems for Superior Lifetimes and Activities." April 16, John Lavigne, University of South Carolina, TBA. April 23, Kathryn L. Beers, National Institute for Standards and Technology, TBA. April 29 (Note change of day), Mohamed E. H. El-Sayed, University of Michigan, TBA. Seminars are normally at 3 p.m. in Room 152, Fondren Science Bldg.

<u>TCU</u>. April 6, Wes Borden, UNT, TBA. April 13, Tadhg Begley, Texas A&M, TBA. April 22, Kathryn Beers, National Institute of Standards and Technology, TBA. Seminars are normally at 11 a.m, Lecture Hall 4, Sid Richardson Science Bldg.

****Continued on Page 12****

Dallas - Fort Worth Section of the American Chemical Society

43rd Annual "Meeting-in-Miniature"

The University of Texas at Dallas Saturday, April 17, 2010 Conference Center (CN)

Format: 10-15 min. talks
Categories: Undergraduate Students
and
Graduate Students

Abstract Deadline: Thursday, April 1
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PERIODICAL

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<u>UT-Southwestern Biochemistry.</u> April 1, Jon Ellman, UC-California, "New Strategies for Synthesis and Applications to Biology. April 8, Scott D. Emr, Cornell, "Cell Signaling: ESCRTs for Receptor Down-Regulation." April 15, Iqbal Hamza, University of Maryland, "Dissecting Heme Homeostasis in Eukaryotes." April 22, Dinshaw J. Patel, Memorial Sloan-Kettering Cancer Institute, "Small RNAs: Mediators of Gene Regulation and Silencing." April 29, Michael Summers, University of Maryland, "How Retroviruses Package Their Genomes." May 6, Elfi Kraka, SMU, "How Chemistry Can Learn from Nature. A CADD Approach to Non-Toxic Enediyne Anti-Tumor Drugs." Seminars are normally at 12 noon in Biochemistry Lecture Hall L4.176.

****Continued from Page 2****

Dr. Reilly joins the staff of Columbia Southern Research Department, Organic Group. Dr. Parker is now associated with the University of Texas Institute Marine Science in Port Aransas. Dr. Parker hails from the University of Arkansas. American Smelting and Refining Co. has announced the retirement of **Herman Jones**. He has been Chief Chemist at their Corpus Christi plant for many years and plans to continue to live there.