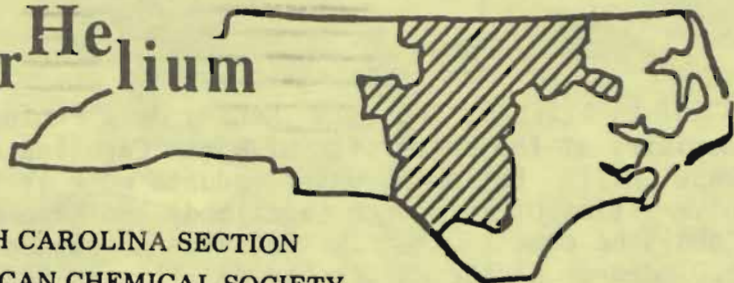


Tar Helium



NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

Vol. 13, No. 2 Raleigh, N.C. October, 1982
The North Carolina Distinguished Chemist Lecture Series
Presents

STEREOSELECTIVE SYNTHESIS

by

Professor Ernest L. Eliel
University of North Carolina
Chapel Hill

Date: Tuesday, October 12, 1982

Place: Burroughs Wellcome

Time: 5:30 Social Hour


6:30 Dinner (\$10.00 full members;
\$5.00 for students)*

8:00 Lecture

*Price includes cost of social hour and dinner.
For reservations, please call one of the following
by October 8: In Durham, call Ms. Nancy Kearns at
684-3010; in Chapel Hill, call Ms. Barbara Haddock
at 966-1566; and in Raleigh, call Ms. Tana Taylor
at 737-2548.

ERNEST L. ELIEL is the W. R. Kenan, Jr., Professor of Chemistry at the University of North Carolina at Chapel Hill. Following undergraduate work at the Universities of Edinburgh (Scotland) and Havana (Cuba), he came to the U.S. in 1946 and earned the Ph.D. degree at the University of Illinois under Harold R. Snyder in 1948. He taught at the University of Notre Dame from 1948 to 1972 and was head of the Chemistry Department there from 1964-66. He is the author of "Stereochemistry of Carbon Compounds" (1962), and "Elements of Stereochemistry" (1969), co-author of "Conformational Analysis" (1965) and co-editor of "Topics in Stereochemistry" (1967-date) in addition to having authored or co-authored over 200 scientific papers. He is a member of the National Academy of Sciences and the American Academy of Arts and Sciences and has been the recipient of the Morley Medal (Cleveland Section, ACS), and College Chemistry Teachers' Award (Chemical Manufacturers' Association) and the Laurent Lavoisier Medal (French Chemical Society). He is active in ACS affairs and presently serves as one of the Councilors of the North Carolina Section.

Dr. Eliel's talk will deal with a highly stereoselective (90% or more enantiomeric excess) asymmetric synthesis of tertiary α -hydroxyaldehydes, α -hydroxyacids and compounds derived therefrom, such as chiral tertiary carbinols. The synthesis proceeds in two stages: the first stage involves electrophilic substitution at C-2 in a chiral 1,3-oxathiane which proceeds so as to give exclusively the equatorial substitution product. The second stage involves addition of a Grignard reagent to the 2-acyl-1,3-oxathiane synthesized in the first step and again proceeds highly stereoselectively according to Cram's rule. The chiral oxathiane is conveniently synthesized from the naturally occurring (+)-pulegone and is recovered in the final stage of the synthesis (oxathiane cleavage). Several applications will be presented.



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CENTENNIAL SCHOLARSHIP
AWARDEE TO SPEAK

Mr. Robert J. Verbiar, winner of the 1982 Centennial Scholarship Award, will present the work performed during the term of this award at the October 12 meeting. Mr. Verbiar will speak prior to the presentation by Professor Eliel. The title of Mr. Verbiar's presentation is "Stereodifferentiation in Chiral Monolayers at the Air/Water Interface".

SPRING SHORT COURSE
FINANCIAL SUCCESS

Dr. Eric Bigham, Treasurer, announced to the Executive Committee on August 18 that the net income from the spring short course, "Elementary Digital Electronics", amounted to \$625.35.

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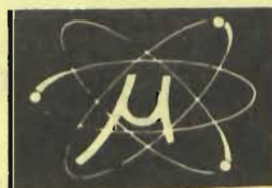
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LOCAL SECTION MEETINGS

<u>Date</u>	<u>Location</u>	<u>Speaker/Affiliation</u>	<u>Topic</u>
Nov. 15	Elon College	Dr. John Eisch SUNY, Binghamton	Novel Plastics
Dec. 15	Meredith College	Dr. Edward M. Arnett Duke	-----

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LIQUID CHROMATOGRAPHY SYMPOSIUM

The Burroughs Wellcome Company and Waters Associates have announced their third annual Research Triangle Park Liquid Chromatography Symposium; the symposium program is given below. The symposium is to be held in the Burroughs Wellcome auditorium on October 13, 1982 and seating is limited. The registration fee is \$5.00, which covers the cost of lunch and refreshments. Interested persons should write to Waters Associates, Box 1070, Pittsboro, North Carolina 27312, to register.

- | | |
|---------------|---|
| 8:30 - 9:00 | Registration |
| 9:00 - 9:10 | Introductory Remarks
Dr. David Brent, Burroughs Wellcome Co. |
| 9:10 - 9:35 | Analysis of Amino Acids and Other Compounds Using Automated Precolumn Derivatization
Dr. Bob Pfeifer, Waters Associates, Milford MA |
| 9:35 - 10:00 | An Update on the HPLC Amino Acid Analyzer - Physiological Fluid Analysis
Dr. Dave Klapper, UNC - Chapel Hill, NC |
| 10:00 - 10:25 | Purification and Characterization of Membrane Bound Receptors Using HPLC
Dr. Robert Shorr, SK&F and Dr. Marc Carone, Duke Univ. Med. Ctr. |
| 10:25 - 10:50 | Critical Review of HPLC Techniques for Measurement of Tricyclic Antidepressants
Dr. Jeff Kiel and Dr. Steve Morgan, USC - Columbia, SC |
| 10:50 - 11:20 | BREAK |
| 11:20 - 11:45 | Characterization of Routine Microbore LC in the Tobacco Industry
Dr. Mike Borgeiding, Mr. Burt Gordon, Dr. Dave Colby, and Dr. Mike Dube, R. J. Reynolds Tobacco Co. |
| 11:45 - 12:10 | Analysis of Carbamate Insecticides in Aerosol Samples
Dr. Ross Leidy, NC State Univ. |
| 12:10 - 12:50 | HPLC Column Evaluation Employing Standardized Test Conditions Followed by Interpretation Using Pattern Recognition Techniques
Dr. Mike Dube and Dr. Dave Colby, R. J. Reynolds Tobacco Co. |
| 1:00 - 2:30 | LUNCH |
| 2:30 - 2:55 | Protein and Peptide Separation by Reverse Phase HPLC
Dr. Pat Strickler, Waters Associates, Washington, DC |
| 2:55 - 3:20 | Analysis of Calmodulin Peptides and Derivatives by HPLC
Dr. R. E. Klevit, Dr. H. Scharbonneau, Dr. T. C. Vanaman, Duke Univ. Med. Ctr. |
| 3:20 - 3:45 | Altering Selectivity by pH in the Analysis of Bombesin and Related Polypeptides
Dr. Oscar Hernandez and Ms. Karen Dermott USNIEHS |
| 3:45 - 4:10 | The Role of HPLC in Assessing Vitamin D Metabolism
Dr. Marc Drezner, Duke Univ. Med. Ctr. |

FALL SHORT COURSE ANNOUNCED

"Introduction to the Interpretation of Mass Spectra" is the title of the fall short course to be sponsored by the North Carolina Section, according to the Education Committee. This course, which will be taught by Drs. Maurice and Joan Bursey, will take place November 18 and 19. A full program schedule and registration forms will be available in the next issue of the TarHelium. As in the past, the net income from the course is to be used for the Centennial Scholarship Award.

MAN AND MOLECULES

"Man and Molecules", a radio program which features interviews with scientists on a wide range of subjects, is produced by the ACS News Service. Locally, the program airs on WDNC (Durham) at 9:30 a.m. on Sundays and on WKNC (Raleigh) between 6:30 and 7:00 a.m. on Sundays. It has been on the air for twenty-one years, making it the longest running science radio program around.

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AREA SEMINARS

- Oct. 1 PROF. H. C. ALLEN, Clark University, Topic to be announced, 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 1 PROF. MARCETTA Y. DARENSBOURG, Texas A&M, "The Chemistry of Some Electron-Rich Metal Hydride Complexes", 3:30 p.m., 103 Gross Chemical Laboratory, Duke.
- Oct. 4 DONALD DARENSBOURG, Texas A&M, "The Activation of Carbon Dioxide by Metal Complexes", 3:30 p.m., 124 Dabney, NCSU.
- Oct. 4 MARK WIGHTMAN, Indiana Univ., "Neurochemical and Electro-analytical Applications of Microvoltammetric Electrodes," 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 5 LESTER J. REED, Univ. of Texas, "Structure, Function and Regulation of Mammalian Pyruvate Dehydrogenase Complex", 8:00 a.m., 207 Venable, UNC-CH.
- Oct. 5 MARK WIGHTMAN, Indiana Univ., "In Vivo Measurements of Endogenous Chemical Substances in the Mammalian Brain", 3:30 p.m., 222 Dabney, NCSU.
- Oct. 6 PROF. LESTER REED, Univ. of Texas, "Active Site Coupling Mechanism in Pyruvate and α -Ketoglutarate Dehydrogenase Complexes", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 8 PROF. FRED W. MCLAFFERTY, Cornell Univ., "Tandem Mass Spectrometry", 3:30 p.m., 103 Gross Chemical Laboratory, Duke.
- Oct. 11 ROBERT KOBOS, Virginia Commonwealth Univ., "Electrochemical Sensing Systems Based on Biocatalysis", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 11 GOPAL SHENOY, Argonne National Lab, "To be announced," 124 Dabney, NCSU.
- Oct. 12 PROF. K. BACHMANN, NCSU, "What's New Under the Sun," 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 12 PROF. PETER VON HIPPEL, Univ. of Oregon, "Molecular Aspects of the Function of the Phase T4 DNA Replication System", 12:10 p.m., 103 Gross Chemical Laboratory, Duke.
- Oct. 14 DALE W. MARGERUM, Purdue Univ., "Electron Transfer Reactions of Metal-Peptide Complexes", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 18 RICHARD F. BROWNER, Georgia Tech., "The Role of Sample Introduction in Atomic Spectrometry", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 18 ROBERT HORTON, NCSU, "Conformational Aspects of Enzyme Activity," 11:00 a.m., 528 Kenan, UNC-CH.
- Oct. 19 PROF. WESLEY BENTRUDE, Univ. of Utah, "Derivatized Cyclic Nucleotides. A Twisted View of the Phosphate Rings Conformation", 3:30 p.m., 103 Gross Chemical Laboratory, Duke.

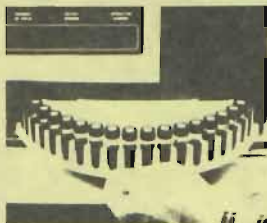
AREA SEMINARS

- Oct. 20 PROF. SAUL WOLFE, Queens Univ., London, Ontario, "Sulfur-Containing Carbanions", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 21 JOHN M. HAYES, Indiana Univ., "Fossils of Ancient Biochemical Processes: Natural Variations of Stable Isotopic Abundances", 11:00 a.m., 308 Venable Hall, UNC-CH.
- Oct. 22 DR. Y. SASAKI, Tohoku Univ., Topic to be announced, 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 22 PROF. SAUL WOLFE, Queen's Univ., London, Ontario, "Marcus Theory and the Geometries and Energies of S_N2 Transition States", 3:30 p.m., 103 Gross Chemical Laboratory, Duke.
- Oct. 25 JAMES Q. CHAMBERS, Univ. of Tennessee, "Polymer Electrochemistry", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 25 SAUL WOLFE, Queen's Univ., "Synthetic and Biosynthetic Studies Related to β -Lactam Compounds", 3:30 p.m., 124 Dabney, NCSU.
- Oct. 27 PROF. GEORGE MAJETICH, Univ. of Georgia, "Recent Developments in Natural Products Syntheses", 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 28 PROF. I. BERNAL, Univ. of Houston, Topic to be announced, 11:00 a.m., 308 Venable, UNC-CH.
- Oct. 29 PROF. IVAN BERNAL, Univ. of Houston, "Absolute Configurations of Organo-Metallics Having Metals as Chiral Centers--Aromatic-Aromatic Intramolecular Interactions and Their Use in Stereospecific Homogeneous Catalysis", 3:30 p.m., 103 Gross Chemical Laboratory, Duke.
- Nov. 1 DAVID SIMONS, Bureau of Standards, "Microanalysis of Particulates by Mass Spectrometry", 11:00 a.m., 308 Venable, UNC-CH.
- Nov. 2 DR. R. J. FELDMANN, N.I.H., Bethesda, "Using Surface Graphics to Study Macromolecular Assemblies", 11:00 a.m., 308 Venable, UNC-CH.

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