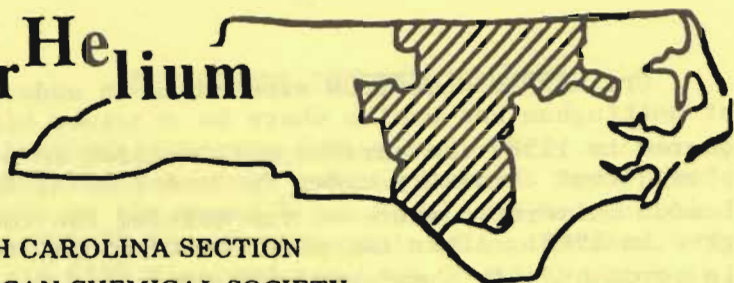


Tar Helium



NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

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October 1980

THE LINEAR CATALYTIC DIMERIZATION OF ACRYLONITRILE

- Speaker: Dr. Warren Hewertson
Imperial Chemical Industries Limited
- Date: Wednesday, October 29, 1980
- Place: Royal Villa Hotel and Convention Center
Raleigh, North Carolina
- Time: 5:30 Happy Hour
Royal Villa
- 6:30 *Dinner (\$8.00 full members;
\$4.00 for students)
Royal Villa
- 8:00 Lecture
Royal Villa

* Please make reservations no later than Monday, October 27, 1980. Call Barbara Hannah at 966-1566 in Chapel Hill, Terry Laing at 684-2414 in Durham and Linda Archer at 737-2548 in Raleigh.

Dr. WARREN HEWERTSON studied as an undergraduate at Nottingham University where he received his B.Sc. degree in 1958. He carried out research in organophosphorous chemistry under Professor R. A. Shaw at London University where he was awarded the Ph.D. degree in 1963. After two years postdoctoral research in boron hydride chemistry with Professor Riley Schaeffer at Indiana University in Bloomington, he rejoined ICI. Following two years in the Petrochemicals & Polymer Laboratory in Runcorn, he was transferred to Mond Division. He was later appointed Business Manager in charge of a team developing fluorochemical surfactants and textile finishes and became Head of the Catalysis Group of ICI's Cooperate Laboratory which carries out long range research into the production of heavy organic chemicals.

* * *

Adiponitrile is a key large tonnage intermediate used in the manufacture of Nylon 66. Current processes in different companies are based on the primary feedstocks benzene, butadiene, or propylene; each has its disadvantages. Following Sohio's development of the efficient ammoxidation of propylene to acrylonitrile in the early Sixties much interest developed in the "head-to-head" coupling of acrylonitrile. Initial efforts to effect this dimerization catalytically were frustrated by the predominant formation of branched material, methylene glutaronitrile, and oligomers. Monsanto successfully developed an elegant electrochemical process which is now in commercial production. The discovery of phosphorus (III) catalysts which give rise to a highly selective conversion of acrylonitrile to 1,4 dicyanobutene-1 will be described. The organophosphorus chemistry involved in the catalytic cycle, and the reaction kinetics, have been investigated. A new synthesis of phosphoranes arising from this work will be outlined.

DIRECTIONS TO ROYAL VILLA

This month's meeting which is jointly sponsored by the ACS local Section and the Polymer Group, is being held at the Royal Villa Hotel and Convention Center on US 70 West between Raleigh and Durham. The address is 6339 Glenwood Ave. (US 70 West) which is about 3 miles on the Durham side of Crabtree Valley.

MEMBERSHIP COMMITTEE RECEIVES AWARD

At the San Fransisco Meeting (in Las Vegas), the membership committee received an award for membership promotion. Congratulations to this committee and the membership at large for encouraging area chemists to join the society.

1984

The dates for the 1984 Southeastern Regional Meeting in Raleigh have been set for October 24, 25, and 26. The Executive Committee has authorized reserving the McKimmon Center on the campus of North Carolina State University for this meeting.

ELECTION OF OFFICERS

The offices to be filled this year are Chairman Elect, Treasurer (2-year term), Councilor (3-year term), and Alternate Councilor (3-year term). Although nominations may be made from the floor at the October meeting, the nominating committee is seeking suggestions for candidates. Contact any of the committee members:

Maurice Bursey (Ch-UNC)	966-5229
M. C. Wani (RTI)	541-6685
Richard Palmer (Duke)	684-2414
Robert Morrison (Burroughs W.)	541-9090
Larry Bowen (NCSU)	737-2995

Symposium

"Chemistry in a Petroleum-less World"

Friday, October 31, 1980

- 12:00 Noon Registration, Lobby, William Rand Kenan, Jr.
Laboratories of Chemistry
- 1:00 PM JAMES P. COLLMAN, Stanford University
The Role of Catalysis
- 2:15 PM WARREN HEWERTSON, Imperial Chemical Industries
Runcorn, UK
A Chemical Industry Based on One-Carbon Raw
Materials.
- 3:30 PM Intermission, coffee
- *****
- 4:00 PM D. STANLEY TARBELL, Vanderbilt University
The Chemical Scene in the United States Around 1880
- 4:20 PM MAURICE M. BURSEY, University of North Carolina
at Chapel Hill
Francis Preston Venable: His Career and His Impact
- *****
- 6:00 PM Social Hour, Carolina Inn, UNC Ballroom
- 7:00 PM Banquet, Carolina Inn, UNC Ballroom
MELVIN CALVIN, University of California, Berkeley
Hydrocarbons from Plants

Saturday, November 1, 1980

- 9:00 AM DAVID M. POND and Donald W. Lane, Tennessee
Eastman Company
Industrial Chemicals from Coal via Coal Gasifi-
cation
- 10:00 AM MARK S. WRIGHTON, Massachusetts Institute of
Technology
- 11:00 AM Intermission, coffee
- 11:15 AM GEORGE S. HAMMOND, Allied Chemical Corporation
Morristown, New Jersey
Chemical Technology without a Petroleum Base

THE VENABLE CENTENNIAL SYMPOSIUM

The program for the Venable Centennial Symposium on "Chemistry in Petroleum-less World" is enclosed. This symposium, which honors the one hundredth anniversary of Francis Preston Venable's arrival on the campus of the University of North Carolina at Chapel Hill, is presented in the spirit of Venable's broad interest in chemistry which resulted in close ties between academia and industry.

- Oct. 16 Dr. HAROLD McNAIR, Virginia Polytechnic Institute, "High Efficiency Packed G.C. Columns", 3:30 pm, Room 206 *Cox Hall, NCSU.
- 16 Dr. HAROLD McNAIR, Virginia Polytechnic Institute, "Combined Chromatographic Systems", Chromatography Discussion Group, 8:00 pm, Burroughs Wellcome Auditorium.
- 17 Dr. COLIN F. CHIGNELL, National Institutes of Environmental Health Sciences, "Spin-Trapping Studies of Photolysis Products from Cutaneous Photosensitizing Agents", 3:30 pm, Room 103 Gross Chemical Lab, Duke.
- 20 Dr. LEO PAQUETTE, Ohio State University, "Quest for the Pentagonal Dodecahedrane", 3:30 pm, Room 124 Dabney Hall, NCSU.
- 23 Dr. JACK M. WILLIAMS, Argonne National Laboratory, "Synthesis, Structure, and Electrical Conductivity Studies of One-Dimensional Metals: An Emerging Underlying Unity", 11:00 am, Room 308, Venable Hall, UNC-CH.
- 24 Dr. DONALD J. DARENSBOURG, Tulane University, "Reactions of Bases with Transition-Metal Carbonyls: Metal-Carbon *versus* Carbon-Oxygen Lability", 3:30 pm, Room 103 Gross Chemical Lab, Duke.
- 27 Dr. MARCETTA DARENSBOURG, Tulane University, "Ion-Pair Interactions of Alkali Salts of Transition Metal Carbonylates", 3:30 pm, Room 124 Dabney Hall, NCSU.
- 29 Dr. WARREN HEWERTSON, Imperial Chemical Industries, "The Linear Catalytic Dimerization of Acrylonitrile", ACS/Polymer Group, Royal Villa Hotel and Convention Center.
- 31 Dr. ARMIN WALSER, Hoffmann-LaRoche, Inc., "New Developments in the Chemistry of Benzodiazepines", 3:30 pm, Room 130 Gross Chemical Lab, Duke.
- Oct 31-
Nov 1 Symposium, "Chemistry in a Petroleum-less World", University of North Carolina; For reservation information contact: Professor Tomas Baer, Department of Chemistry, University of North Carolina, Chapel Hill, N. C. 27514. Phone 966-5433.
- Nov 6 Dr. DAVID CHANDLER, University of Illinois, "The Hydrophobic Effect: Facts, Fantasy, and a Microscopic Theory", 3:30 pm, Room 206 *Cox Hall, NCSU.
- 7 Dr. ALBERT PADWA, Emory University, "Some Cyclo-Addition Reactions of Small-Ring Compounds", 3:30 pm, Room 103 Gross Chemical Lab, Duke.

*Cox Hall adjoins Dabney Hall.

TARHELIUM IS PUBLISHED BY THE NORTH CAROLINA SECTION OF THE AMERICAN CHEMICAL SOCIETY. THE VIEWS EXPRESSED HEREIN ARE NOT NECESSARILY THOSE OF THE SECTION, DIRECT ALL CORRESPONDENCE TO DR. WILLIAM L. SWITZER, EDITOR, C/O CHEMISTRY DEPARTMENT, NORTH CAROLINA STATE UNIVERSITY, RALEIGH, N. C. 27650.

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