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North Carolina Section
AMERICAN CHEMICAL SOCIETY

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November 1973

"FORMATION AND CHEMICAL REACTIONS
OF ATMOSPHERIC PARTICLES"

Speaker: RICHARD D. CADLE
National Center for Atmospheric Research
Boulder, Colorado

Date: Tuesday, November 13, 1973

Place: Chapel Hill, North Carolina

Time: 5:30 Happy Hour
Ranch House
Airport Road, Chapel Hill.

6:30 Dinner (Steak, \$8.79 max.)
Ranch House

8:00 Lecture
Room 207 Venable, UNC-CH

Dr. Richard D. Cadle received his B.A. from Western Reserve in 1936 and his Ph.D. in physical chemistry from the University of Washington in 1941. After working with Procter and Gamble and the Naval Ordnance Test Station he joined the Stanford Research Institute in 1948. In 1963 Dr. Cadle was appointed Program Scientist at the National Center for Atmospheric Research at Boulder, Colorado where in 1966 he was promoted to his present position as Head of the Atmospheric Chemistry Department.

His research on the chemistry and physics of the atmosphere has included analyses of atmospheric contaminants, studies of aerosols, and investigations of the kinetics and photochemistry reactions in the atmosphere. He is the author of approximately ninety articles and of three books dealing with fine particles.

"Formation and Chemical Reactions
of Atmospheric Particles"

by Richard D. Cadle

Particles may enter the atmosphere preformed, for example, as a result of dust storms or industrial operations. They may also be formed by chemical reactions in the atmosphere and may be changed physically and chemically as a result of such reactions. The particles of photochemical smog are formed when nitrogen dioxide is photolyzed and the resulting atomic oxygen reacts with certain of the organic vapors present in such smog to trigger a series of complex reactions. There is considerable evidence that such reactions also occur in the ambient atmosphere involving essential oils emitted by vegetation. Hydrogen sulfide and sulfur dioxide are oxidized both in smog and in the ambient atmosphere by several different processes, the end products being sulfuric acid droplets and various sulfates. Sea salt particles are prevalent over the oceans and they undergo a number of chemical reactions including reactions with oxides of nitrogen and sulfuric acid droplets to liberate hydrogen chloride and produce nitrates and sulfates. Sulfuric acid droplets produced by the oxidation of H_2S and SO_2 react with atmospheric ammonia to form ammonium sulfate.

IT'S ELECTION TIME!

November is election time and our local ACS section has two offices to fill. The Elections Committee, consisting of Marcus Hobbs, Bill Little and Ed Tyczkowski, has nominated Maurice Bursey for Chairman-Elect and Suzanne Purrington for Secretary-Treasurer. Balloting will be by mail. (See next page for ballot and instructions.)

MAURICE M. BURSEY

Maurice Bursey, associate professor of chemistry at the University of North Carolina in Chapel Hill, received his B.A., M.A., and Ph.D. from Johns Hopkins. Before going to Chapel Hill in 1966, he taught at Hopkins and Purdue. He has been a member of the North Carolina Section for seven years, and presently is Secretary-Treasurer and chairman of the Membership Committee. His wife and former post-doctoral student is Dr. Joan T. Bursey of the Research Triangle Institute.

The Burseys have published extensively in mass spectrometry. Maurice has also co-authored an undergraduate text with Alsoph H. Corwin and a forthcoming monograph on ion cyclotron resonance with Thomas A. Lehman. He also is director of UNC's on-going short course program in chemistry and is a member of the board of the Research Triangle Center for Mass Spectrometry.

SUZANNE TOWNSEND PURRINGTON

Suzanne Purrington presently teaches chemistry at Peace College in Raleigh and is a consultant for Lory Industries and Becton, Dickinson. She was a post-doctoral student and instructor at Duke from 1963 to 1965, and has also taught at Shaw University in Raleigh and the New York Institute of Technology in Old Westbury, New York. Suzy received her A.B. from Wheaton College in Massachusetts, A.M. from Radcliffe and Ph.D. from Harvard. Her husband, Alfred L. Purrington III, is a Raleigh attorney, and they have three children.

In the North Carolina Section Suzy has been a member of the Professional Relations Committee since 1971, serving as Chairwoman in 1971-72. Her research has been in organic and physical chemistry with emphasis on free radicals and propellant compositions.

BALLOT

Vote for one candidate for each office. Space is provided for write-in candidates.

FOR CHAIRMAN-ELECT

Maurice M. Bursey

FOR SECRETARY-TREASURER

Suzanne T. Purrington

Place your ballot in an envelope, with your written signature as part of the return address. Do not sign the ballot itself.

In order for your ballot to be counted, it must reach Halbert Carmichael by no later than meeting time, November 13, 1973. Preferably it should be mailed to:

Dr. Halbert Carmichael
 Department of Chemistry
 Box 5247
 North Carolina State University
 Raleigh, North Carolina 27607

However, because of the vagaries of the Postal Service, you can deliver it to Halbert personally at the meeting, or have it sent by messenger.

LOCAL SEMINARS

- Nov. 14 J. A. Pople of Carnegie-Mellon U.,
207 Venable (UNC-CH), 8:00 p.m.
- Nov. 16 Jerome Berson of Yale U., 103
Gross (Duke), 3:30 p.m.
- Nov. 19 "Carbon-13 Spin-Lattice Relaxation
Applications in Chemical Research",
George C. Levy of Florida State U.,
124 Dabney (NCSU), 4:10 p.m.
- Nov. 29 J. H. Freed of Cornell U., 207 Venable
(UNC-CH), 4:00 p.m.
- Nov. 30 Andrew Wojcicki of Ohio State U.,
103 Gross (Duke), 3:30 p.m.
- Dec. 3 "Infrared, Raman and Microwave
Spectra, Structure and Bonding of
some X_2Y_4 Molecules of Group III
and V Elements", James R. Durig of
U. of South Carolina, 124 Dabney
(NCSU), 4:10 p.m.
- Dec. 6 T. C. Bruice, of U. of California,
Santa Barbara, 207 Venable
(UNC-CH), 4 p.m.
- Dec. 7 Anton Schreiner of North Carolina
State U., 103 Gross (Duke), 3:30 p.m.
- Dec. 18 NEXT ACS SECTION MEETING

To be held in Raleigh

George K. Schweitzer of the University
of Tennessee will be the speaker.

THE NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

EXECUTIVE COMMITTEE

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COMMITTEE CHAIRMEN

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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. Monica Nees, Editor, c/o N. C. Science and Technology Research Center, P. O. Box 12235, Research Triangle Park, N. C. 27709

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