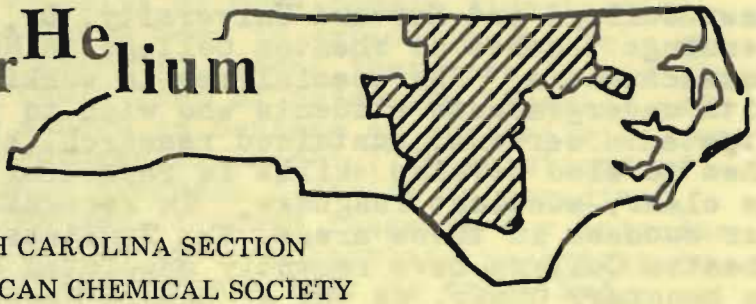
# TarHelium



NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

Vol. 7, No. 5 Raleigh, N.C. January, 1977


## "ADVENTURES IN THE SYNTHESIS OF FLUORINATED STEROIDS"

Speaker: Dr. Bojan H. Jennings
Wheaton College

Date: Thursday, January 20, 1977

Place: Meredith College
Raleigh, North Carolina

Time:
- 5:30 Happy Hour
  NCSU Faculty Club
- 6:30 Dinner ($5.00)
  Belk Dining Hall
  Meredith College
- 8:00 Lecture
  Hunter Hall, Room 107
  Meredith College

In this issue-- Information on the Spring Short Course sponsored by The North Carolina Section, ACS and the Centennial Scholarship Award, sponsored by the Section.

A native of Illinois, educated at Bryn Mawr College and Harvard University, Dr. Jennings teaches at Wheaton College in Norton, Massachusetts. She specializes in working with undergraduate students who wish to participate in serious, sustained research, helping them to also develop skills in reporting results in clear, succinct language. In recognition of her success in these areas, the Trustees of Wheaton College have recently appointed her to an honorary Chair, as the A. Howard Meneely Professor of Chemistry.

Her choices of research projects reflect persistent interest in biology; her publications, with students as co-authors, include studies of reactions initiated by ultrasound, reactions of selected terpenes, and photosensitized reactions of pyrimidines. She is currently synthesizing fluorosteriods designed to inhibit the biosynthesis of estrogens.

## "ADVENTURES IN THE SYNTHESIS OF FLUORINATED STEROIDS"

Our interest in fluorosteroids derives from their potential value as competitive enzyme inhibitors in the biosynthesis of estrogens. Reasons for trying to prevent estrogen synthesis will be discussed in relation to breast cancer therapy. The rationale for our particular approach to the problem depends on both the special characteristics of the carbon-fluorine bond and the biosynthetic pathway from $\Delta^4$-androstene-3,17-dione to estradiol and estrone. Essential aspects of the latter have been delineated by several workers and can serve as a guide for predicting the kinds of molecular structures which should make effective inhibitors.

The course of our investigations has been strongly influenced by our concern about the

high toxicity of many common fluorinating agents and a need to exploit relatively non-toxic reagents. Among these are "naked fluoride" (solutions of potassium fluoride and crown ethers in benzene or acetonitrile) and "polyhydrogen fluoride" (70% solutions of anhydrous hydrogen fluoride in pyridine).

The use of these reagents for introducing fluorine into appropriate positions in the steroid nucleus will be described.

## CENTENNIAL SCHOLARSHIP AWARD

The North Carolina Section of the ACS announces its CENTENNIAL SCHOLARSHIP AWARD for the Summer of 1977. It carries a stipend of $1000 (tax free).

Eligibility Requirements:

(1) Membership or Associate Membership in the American Chemical Society.
(2) Attendance at a Graduate or Professional School within the geographic boundaries of the North Carolina Section of the ACS and successful completion of at least one year of graduate or professional study toward an advanced degree at such an institution by the end of the academic year
(3) Must have no other obligations for which income is earned during the tenure of the scholarship.

DEADLINE FOR RECEIPT OF APPLICATION IS MARCH 1, 1977. Send application to:

Dr. David A. Yeowell, Chairman
Scholarship Committee
Burroughs Wellcome Co.
3030 Cornwallis Road
Research Triangle Park, N.C. 27709

Application must be accompanied with:

(con't on page 6)

# INTRODUCTION TO C-13 NMR SPECTROSCOPY

The North Carolina Section of the American Chemical Society is pleased to sponsor a non-credit short course in Introduction to C-13 NMR Spectroscopy for all interested scientists in the Research Triangle area.

**DATES:** Mondays and Thursdays, Feb. 3, 7, 10, 14, 17, 21, 24, 28

**TIME:** 5:15 to 6:30 p.m.

**LOCATION:** Burroughs Wellcome Auditorium, 3030 Cornwallis Road, Research Triangle Park, N.C. 27709.

**PREREQUISITE:** A bachelor's degree in a science, or equivalent, and some familiarity with nmr.

**DEADLINE:** Deadline for registration is January 28, 1977.

**INSTRUCTORS:** Dr. Charles G. Moreland, Professor of Chemistry, North Carolina State University, Raleigh, N.C.

Dr. Louis D. Quin, Professor of Chemistry, Duke University, Durham, N.C.

Charles G. Moreland received his Ph.D. in Chemical Physics from the University of Florida in 1964. He joined the faculty of the Department of Chemistry at NCSU in 1964 as an Assistant Professor and is presently Professor of Chemistry. His research interests are in the applications of NMR to chemical problems with special emphasis in C-13 NMR.

Louis D. Quin received his Ph.D. from the University of North Carolina in 1952. He joined the Duke faculty in 1956 and has been Professor of Chemistry since 1967. He was Chairman of the Department 1970-76. His research interests are in heterocyclic chemistry with emphasis on phosphorus compounds (synthesis, stereochemistry, spectral problems).

**COURSE DESCRIPTION:** This course is designed for persons who have not had previous experience with C-13 NMR but who wish to learn the essentials of the technique and develop appreciation for its utility in structural and conformational analysis. In the first two lectures, theory and instrumentation will be discussed. The interpretation of spectral data and the use of these data in typical structural analysis problems will be covered in the next four lectures. The course will conclude with two lectures on relaxation phenomena and dynamic NMR.

**TEXT:** "Carbon-13 Nuclear Magnetic Resonance for Organic Chemists" by G.C. Levy and G.L. Nelson, Wiley-Interscience is strongly recommended. Order books directly from the publisher at 605 Third Ave., New York, New York 10016.

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Enclosed is a check (payable to the North Carolina Section, American Chemical Society(, as registration fee for Introduction to C-13 NMR Spectroscopy. A check must accompany registration. Billing cannot be arranged, but receipts will be given to aid registrants in obtaining reimbursement.

_____$25.00 I am ACS member _____$30.00 I am not ACS member

NAME_____HIGHEST DEGREE_____TELEPHONE_____

BUSINESS ADDRESS_____

SEND TO: Dr. Forrest Getzen, Treasurer
North Carolina Section, ACS
Department of Chemistry
North Carolina State University
Raleigh, N. C. 27607

(a) One copy each of undergraduate and graduate (or professional school) transcripts (these need not be official--listing of courses and grades will be acceptable)
(b) Two letters of recommendation: One from research director (thesis advisor) and one from another graduate professor.
(c) No more than a 1000 word writtem summary, in the applicants own words, of their overall research project, which must be in a chemically related area, and an outline of the portion of the work planned for the period of the award (Summer 1977)

Note: The Scholarship will be awarded on the basis of excellence of academic record, superior performance as a teaching assistant (where applicable), and promise in research. It will be given primarily on the basis of past performance, rather than the quality of the research proposed. The award is not subject to renewal. All applications will be acknowledged.

## FUTURE LOCAL SECTION MEETINGS

The February meeting of the North Carolina Section of the ACS will take place om February 9 at NCCU. The scheduled speaker is Dr. Robert A. Benkeser, Department of Chemistry, Purdue University, West Lafayette, Indiana.

The March meeting of the Section is scheduled for Tuesday, March 22. Dr. Maurice Bursey at University of North Carolina will speak. This meeting will be at NCSU.

## CONSULTANT WANTED

Dale Denny at EPA is seeking a Chemist or Chemical Engineer who has had industrial exper-

ience in an environmental area, in agriculture or in petrochemicals and/or refining of petrochemicals to act as a consultant. If you desire to inquire into this oportunity contact: Dale Denny; Industrial Environmetal Research Lab; EPA; Research Triangle Park, N.C. 27709. Phone: 549-8411 Ext. 2547.

## SPECIAL TOPICS COURSE AT NCSU

The Department of Chemistry at NCSU is offerring a course in "The Chemistry of Controlled Drugs II" The instructor is Dr. L.A. Jones and the class is scheduled for two 50-minute lectures MW 1900-2000 and one 3-hour lab TBA. The course will cover the chemistry, synthesis, analysis and the metabolites of those drugs abused by today's society will be discussed. Prerequisite is CH 223 (Organic) and consent of instructor. It carries 3 credits and is listed as Ch 695B Questions regarding the course should be directed to Dr. Jones, 525 Dabney Hall; 737-2940.

## ACS DUAL JOURNAL EVALUATION PROJECT TO BE DISCUSSED

On Monday, January 24, 1977 Lorrin Garson and Seldon Terrant from the R&D Department, ACS Books and Journals Division, Washington, D.C. will hold a seminar at Burroughs Wellcome in the Park from 6-7 p.m. to discuss the study that was conducted by the ACS to evaluate the concept of a dual journal system. This system would mean that an archival journal containing all the text of papers would be published and in addition a summary journal would be published for use by individuals. Refreshments will preceed the seminar at 5:15.

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