

# THE

# EDITORS'

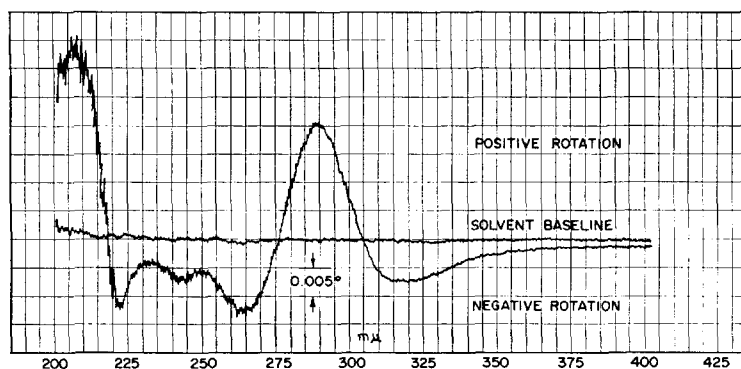
# COLUMN

THE ANALYTICAL CHEMIST, more than any other scientist, is concerned with precise measurements and careful calibrations. Because of this he should constantly question, examine, and re-evaluate the preciseness of his measurements and the purity of materials with which he works. In addition, because of the ever-increasing sophistication of analytical methods, standard reference materials should be placed under special scrutiny, and it should be realized that the reagent which was considered "pure" a few years ago might even be considered impure by today's standards. It is important, therefore, to bring the needs and problems of the analytical chemist to the attention of the scientific community as a whole.

The Committee on Analytical Chemistry of the Division of Chemistry and Chemical Technology, National Academy of Sciences-National Research Council, has seen the need for a general program for the evaluation of reference materials that are used by analytical chemists, and it has established a new subcommittee which will deal with all aspects of the program.

The subcommittee is chaired by J. C. White of Oak Ridge National Laboratory, and is composed of the following members: M. D. Cooper, General Motors Corp.; Henry Fischback, U.S. Food and Drug Administration; Charles Merritt, Jr., U.S. Army Natick Laboratories; G. H. Morrison, Cornell University; Arba Thomas, Armco Steel Corp.; S. M. Tuthill, Malinkrodt Chemical Works, and Samuel Vigo, U.S. Army Materials Research Agency.

The work of the subcommittee will be primarily concerned with the following materials: (1) pri-



Ultraviolet rotatory dispersion curve obtained from 10  $\mu$ g of iso-chlorotetracycline.

## ON GETTING TO KNOW YOUR OPTICALLY ACTIVE SAMPLE

*Optical rotatory dispersion (ORD)* and *circular dichroism (CD)*, when used as complementary tools for exploring the structure of optically active molecules, have become indispensable techniques in the laboratory. The recent availability of reliable, well-performing ORD and CD instruments, transforming a once difficult measurement into a laboratory routine, has encouraged widespread use of these techniques.

This new class of ORD and CD instruments has been used in studies of such optically active substances as steroids, alkaloids, proteins, polypeptides, nucleic acids, triterpenes, synthetic polymers, and many others. A partial list of the types of information that may be derived from the use of ORD-CD would include:

- conformation and configuration of molecules
- stereochemical characteristics
- kinetic properties
- concentrations of optically active components in mixtures
- secondary structure of high molecular weight substances

Maximum capability for conducting these studies is available in the Durrum-Jasco<sup>(1)</sup> Recording Spectropolarimeter, which combines in a single instrument the complementary techniques of ORD and CD. This dual capability, offered at a price lower than some instruments having ORD or CD only, puts the acquisition of both valuable techniques well within the budgetary reach of many laboratories. Among the instrument's basic features are numbered:

- modes for measuring ORD, CD, absorbance, and per cent transmittance in one instrument
- wavelength range from 185 to 700 m $\mu$
- circular dichroism sensitivity of  $2 \times 10^{-5}$  O.D.
- angular rotation sensitivity of 0.001°
- simultaneous recording of slit width and photomultiplier voltage along with spectra
- \$32,000 for ORD and CD; \$22,950 for ORD only (price includes installation, training of operators, two preventive maintenance calls, and one year's warranty)

A 16-page reprint entitled "Applications of Optical Rotatory Dispersion and Circular Dichroism in Stereochemistry" is now available. For a free copy, plus the new brochure describing the Durrum-Jasco instrument, write to:

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## EDITORS' COLUMN

many standard substances used in chemical analyses, (2) pure substances as reference standards for instrumental methods of analysis, and (3) samples of certified known composition for calibration and standardization of analytical methods.

One of the first actions of the new subcommittee will be to obtain specific and generalized comments from selected analytical chemists by means of a questionnaire. Those questioned will, among other things, be asked to rate (for applications in a variety of analytical techniques) the reference materials they are now using, without regard to the sources from which they were obtained, for availability, accuracy, and cost. The information will be used to compile a status report that should be beneficial to research investigators, analytical laboratory supervisors, and manufacturers and suppliers of reference materials.

### NEW ISOTOPES INFORMATION CENTER

The U.S. Atomic Energy Commission has announced the establishment of an Isotopes Information Center at the Oak Ridge National Laboratory; it will be part of the Isotopes Development Center, which was established in 1962.

More than 5000 documents have been acquired, and the center exchanges information with such groups as the International Atomic Energy Agency, Eurisotop, and the Japan Radioisotope Association. In addition to continued publication of *Isotopes and Radiation Technology Quarterly*, state-of-the-art reviews, reports, and translations will be published, and general and technical requests for information will be answered. Requests for information should be addressed to:

Dr. P. S. Baker, Director  
Isotopes Information Center  
Oak Ridge National Laboratory  
Post Office Box X  
Oak Ridge, Tennessee 37830

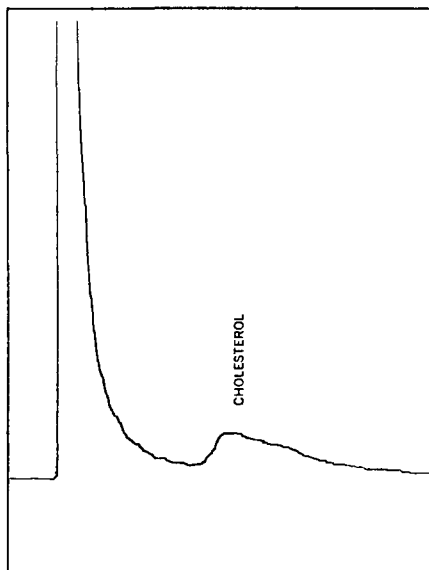


Figure 1—Company A. Support acid and base washed, vacuum siliconized, 80/90 mesh.

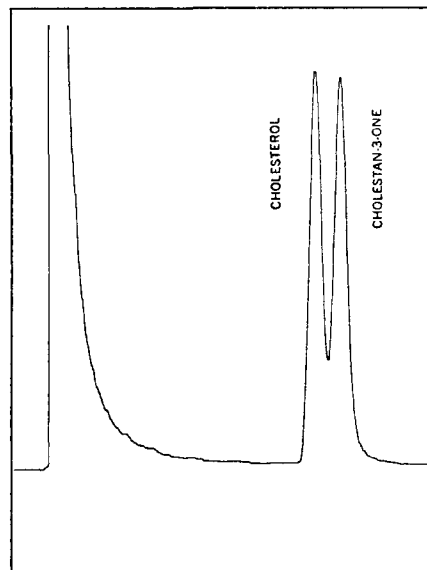


Figure 2—Johns-Manville. High-performance Chromosorb W, AW-DMCS, 80/100 mesh.

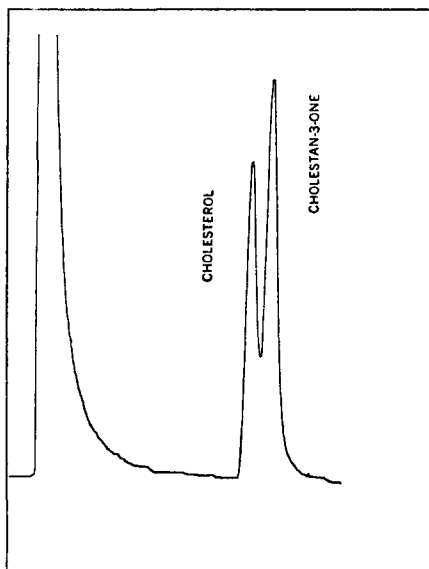


Figure 3—Company B. Support acid washed, DMCS treated, 80/100 mesh. This is Company B's latest improved version for steroid, alkaloids, bile acids, pesticides, etc.

**CONDITIONS:** All columns 4 ft. x 3 mm ID glass "U" tube. All coated with 3% SE-30 and conditioned at 230°C for 60 minutes, flow 60 ml/min. Same operating conditions. Sample: 1 microliter toluene containing 1 microgram each of cholesterol and cholestan-3-one.

**COMMENTS:** Figure 1—The highly sensitive cholesterol is dehydrated and seen as a tailing peak. The cholestan-3-one seen much later as a severely tailing peak. Figure 2—Chromosorb W gives two distinct peaks with no tailing, no loss. Figure 3—Part of the cholesterol is lost, as indicated by the smaller peak.

High-performance J-M Chromosorb G, AW-DMCS gives results comparable to Chromosorb W. These high-performance grades have been developed to provide a support with the highest inertness. They

## New High-Performance J-M Chromosorb W and G (AW-DMCS)

After only 60 minutes conditioning at 230°C, compare inertness of support at peak response

have the advantage of not requiring long periods of conditioning. These grades supplement present acid washed, dimethyldichlorosilane (AW-DMCS) Chromosorb grades.

**AVAILABILITY:** High-performance J-M Chromosorb W and G, AW-DMCS grades are available in 80/100 and 100/120 mesh fractions. Chromosorb W packaged in 100 gram glass bottles and Chromosorb G in 250 gram glass bottles.

**EVALUATION KIT:** 60 ml samples of new high-performance J-M Chromosorb W and G (AW-DMCS) in both 80/100 and 100/120 mesh ranges are available. Send \$2.00 to Johns-Manville, Box 1960, Trenton, New Jersey.



## Johns-Manville

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