

TABLE I
SPECIFIC ACTIVITY OF THE DIACETATE

Sample	Mg. counted	DPM tritium/mg.	DPM C ¹⁴ /mg.
A	5.01	75	20.4
B	3.28	125	23.1
C	2.88	131	19.4

Sample B: the filtrates of the recrystallizations of A were combined, vacuum sublimed, and recrystallized once from methanol, m.p. 232–233°. Sample C: the toluene of B was distilled off under high vacuum, and the 2,5-diphenyl-oxazole was removed by vacuum sublimation. The THE diacetate remaining was vacuum sublimed and recrystallized once from methanol, m.p. 232°.

The radiocarbon and tritium were then counted

in a liquid scintillation counter¹⁵ capable of counting the pulses due to the carbon-14 and tritium at the same time. Then the pulses due to tritium were screened out and only those coming from the carbon-14 were counted. The tritium counts were obtained by difference.¹⁶ The specific activities were calculated and are shown in the table.

(15) The instrument was developed for us by the Packard Instrument Co., La Grange, Illinois.

(16) Details regarding the method of counting both carbon-14 and tritium in the same sample will be published later.

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BOOK REVIEWS

Energy Transfer in Hot Gases. Sixth Conference, U. S. Bureau of Standards. By the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1954. iii + 126 pp. 15 × 23.5 cm. \$1.50.

The 50th anniversary of the Bureau of Standards was celebrated in part by a series of 12 conferences devoted to different aspects of the Bureau's program of fundamental and applied research. The present volume consists of a rather noteworthy set of 16 papers presented at the sixth of these conferences devoted to consideration of radiation and energy transfer processes occurring in hot gases. As may be anticipated the subject is of current interest to scientists working in what are normally considered quite separate fields and this diversity is represented by contributions from many well-known authorities in such fields as photochemistry, spectroscopy, combustion, fuels, kinetics, astrophysics and aeronautics. What is most impressive, however, is not the diversity represented by these authors, but rather the way in which a common interest has so effectively integrated their different disciplines into an impressive attack on some very difficult and important problems of molecular dynamics.

The first paper by A. G. Gaydon on "Processes of Electronic Excitation in Relation to Flame Spectra" provides an excellent introduction to the remainder of the volume. It summarizes very nicely the excitation processes occurring in flames and their relevance to the problems of flame temperature measurement. In a later paper, S. S. Penner has reviewed the theoretical background involved in the infrared emissivity of diatomic gases. B. Lewis adds a very interesting paper on the theory of flames with particular emphasis on empirical models which have been successful in accounting for combustion waves. A brief paper by B. Karlovitz presents an interesting treatment of turbulence in flames and an important application to heat transfer from such flames.

One of the important problems in flames is, of course, the measurement and interpretation of temperatures and there are a number of very stimulating experimental papers on this subject by R. H. Tourrin, G. A. Hornbeck and R. C. Herman, H. P. Broida, S. S. Penner and M. Gilbert and D. Weber, G. H. Dieke and H. M. Crosswhite, S. Silverman and W. S. Benedict and E. K. Plyler. Among these, the first one and the last two are of particular interest because of the use of the rather new techniques made available from infrared work.

P. J. Dyne discusses some of the problems of identification of radical and molecular species responsible for emission in fluorescence and discharges. Closer to the chemical viewpoint is a very interesting discussion of flame induced chemi-

luminescence at interfaces by J. R. Arthur and D. T. A. Townend. Quite spectacular H₂-F₂ flame experiments are described by R. H. Wilson, Jr., J. B. Conway, A. Engelbrecht and A. V. Grosse. This reaction appears to give the hottest flame yet recorded (4300°K.).

The last paper by H. K. Sen represents an attempt at a new explanation of the anomalous temperature observed in the photosphere and chromosphere of stars, based on the existence of shock waves in these regions.

This brief volume represents an important contribution to a rapidly growing and important field. Many of the interesting phenomena are still only partially understood and there is still disagreement about some of the basic data. Nevertheless, to workers in the field this will be for some time a stimulating and useful presentation and the Bureau is to be commended for making these papers conveniently available at reasonable cost.

In conclusion the reviewer wishes to make clear to the lay reader that despite its origin and title, the present volume is not a discussion of the political atmosphere in our nation's capitol.

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The Biochemistry of the Nucleic Acids. 2nd Edition. By J. N. DAVIDSON, D.Sc., M.D. (Edin.), F.R.I.C. Gardiner Professor of Physiological Chemistry in the University of Glasgow. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1954. viii + 200 pp. 11 × 17 cm. Price, \$2.25.

This pocket-sized Methuen Monograph offers the only modern summary of the status of the rapidly expanding body of information about nucleic acids, and fulfills the author's promise of a book for "chemists who wish to know something about the biological aspects of the subject, and of biologists who wish to learn a little about the chemical aspects." It emphasizes the biological and metabolic aspects of the subject, particularly on a cellular level. The important changes in concepts of the composition and structure of the polynucleotides, the many developments relating deoxyribonucleic acids to chromosomal material and the multitude of views on the possible functions of ribonucleic acids are all clearly presented. It is as up to date as is practical and the usefulness has been increased in this edition by placing the bibliographies after each chapter. The next edition could be improved by the inclusion of an author index, and by some distinguishing mark on its spine to differentiate it from previous editions. The concise, but re-