acids and proteins, water soluble and fat soluble vitamins and nutrition—have been reviewed in all, or nearly all, of the preceding 21 volumes of the series. The remaining subjects—nucleic acids, neoplastic tissue, antibiotics, fungi, photosynthesis, teeth, immunopolysaccharides, vision and ruminant nutrition—have been treated previously from one to ten times. A chapter on Cortisone appears for the first time in volume 22. The reviews have been prepared by eminent biochemists from 13 universities or research institutes in the United States and 9 in foreign countries (Argentina, Denmark, England, France, Israel, Switzerland and Wales).

The work and accomplishments of the editorial committee, the editors, and the reviewers are greatly appreciated generally. During a period of nearly a quarter of a century 75 topics have been discussed in about 550 articles by biochemists in approximately 200 institutions of which nearly half are in 25 foreign countries. About one third of the reviews are contributions from the University of California (40), Cambridge University, England (25), Columbia University (22), the Rockefeller Institute for Medical Research (17) and seven other universities (81).

The policy, stated in the Preface to volume 1, that the reviews should be critical analyses and resumes rather than compendia has been maintained consistently. Although the reviewers have adhered to this policy reasonably well, parts of numerous reviews consist of little more than lists of papers and conclusions. It is probably not possible for any review to be both critical and complete because of the limitations of space if not for other reasons. Since, the approximately 5000 papers cited currently represent only a fraction of those published annually it might be in order for reviewers to limit citations even more drastically thereby releasing space for extension of critical discussion.

All topics of interest are not and cannot (within a reasonable space) be included in each volume of the Review. Approximately 60% of the topics have been discussed in only five or fewer volumes while about 15% of the chapters have been devoted to 10 general subjects, each treated in nearly all of the annual reviews. The Editors have recognized, but only partly solved, this problem by creating new annual review series to which some topics have been transferred.

The underlying difficulty may be that (seemingly) it is virtually impossible to review either critically or completely in one volume the annual publications in a whole field of science such as biochemistry. In this connection one may inquire in vain, I think, concerning a satisfactory definition of biochemistry and thus the boundaries of this discipline. The establishment of annual reviews of *subject* (*e.g.*, proteins, carbohydrates, lipids, vitamins, etc.), rather than *fields* (*e.g.*, biochemistry, physiology, plant physiology, etc.) is suggested as a possible solution of this problem.

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Standard X-Ray Diffraction Powder Patterns. Volume I. National Bureau of Standards Circular 539. By HOWARD E. SWANSON and ELEANOR TATGE. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1953. ii + 95 pp. 20 × 26 cm. Price, $0.45.

Standard X-Ray Diffraction Powder Patterns. Volume II. National Bureau of Standards Circular 539. By HOWARD E. SWANSON and RUTH K. FUYAT. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1953. ii + 65 pp. 20 × 26 cm. Price, $0.45.

Eighty-four standard X-ray diffraction powder patterns are presented in revision of the corresponding patterns in the ASTM card file employed in the phase identification of crystalline materials. This compilation at the National Bureau of Standards constitutes a major step in the direction of obtaining reliable powder data that are carefully indexed and compared with patterns from the literature. The interplanar spacings of these pure compounds are given with an accuracy of four significant figures. The intensity values, determined by Geiger counter spectrometry, are reported as peak heights above background and are expressed as percentages of the strongest line. From a theoretical viewpoint, however, integrated intensities are to be preferred. A serious difficulty with the flat sample mounting is the likely distortion of the relative intensities because of preferred orientation of crystallites. By reducing the grain sizes of the samples to less than twenty-five microns the authors have overcome this inherent limitation and achieved quite reproducible intensity measurements.

These two inexpensive circulars are recommended to all diffractionists.

THE DOW CHEMICAL COMPANY
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Infrared Absorption Spectra of Steroids. An Atlas. By KONRAD DOBRINER, E. R. KATZENELLENBOGEN and R. NORMAN JONES, The Sloan-Kettering Institute for Cancer Research and the National Research Council of Canada. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, New York. 1953. xlv + 308 pp. 16.5 × 23.5 cm. Price, $11.50.

This volume is of general interest as an aid in the identification of organic compounds and in the determination of structures by means of infrared absorption spectra, and of specific usefulness in the facile characterization of steroids by comparison of absorption curves. The collection of curves derives particular value from the fact that all of the spectra have been obtained by the same group of skilled workers, and the accuracy and comparability of the curves cannot be questioned. All of the data—type of prism, cell length, solvent and concentration—have been included which make it feasible to reproduce any curve on a near-quantitative basis.

The spectra are recorded on a linear wave number scale which is identical throughout. The ordinate values, also on an identical scale for all curves, are given in percentage absorption, so that these are true absorption curves. For the form of presentation of the spectra, the authors may have been influenced by the volume on "Ultraviolet Spectra of Aromatic Compounds," by Friedel and Orchin, since the charts in the two books bear close resemblance. The subdivisions of the scales are clearly marked, so that interpolation of the maxima values is easy. The numerical values of the maxima are not given along with the curves, but the alternate blank pages permit the reader to make any notes and jottings he may wish to associate with a particular compound or functional group.

The 3800–2700 cm.$^{-1}$ region is recorded for only twelve compounds (supplementary charts). Most of the absorption curves cover the region 1800–650 cm.$^{-1}$, and the 294 charts for this region are arranged in the order of increasing functionality of the compounds: I, C_{18}-steroids; II, C_{19-29}-steroids; hydrocarbons; mono-, di-, tri-, tetra- and pentahydric alcohols; mono-, di- and triketones; hydroxyketones; III, bile acid esters; IV, steroid sapogenins and derivatives; V, cardiac aglycones and derivatives (4); VI steroid alkaloids (2). In general, the curves for stereoisomeric compounds are placed close together in the atlas, so that direct comparison of related spectra is easily achieved. The selection of steroids is representative and also the most complete available at this date. The collection of adrenocortical steroids is remarkable. Nowhere else will one find infrared absorption curves for all these compounds. By contrast, curves for only one halogenated steroid and two *i*-steroids are included in the collection.

While the arrangement of the spectral curves tends to stress the usefulness of the volume in the identification of steroids, there is much general information on infrared spectra of organic compounds to be obtained by a selective study of the curves presented and by referal to the clear and concise introductory section. Finally, the atlas represents a unique testament to the method which has revolutionized structural organic chemistry and a worthy memorial to Dr. Konrad Dobriner, who was a pioneer in the application of this method.

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