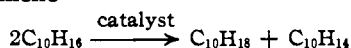


resulting in the formation of cyclic monoölefins and *p*-cymene



Preliminary experiments made using limonene and halogen-containing catalysts showed that the degree of hydrogen disproportionation depended upon the type of catalysts used. Not all of the tested catalysts were equally suited for the hydrogen transfer reaction; some caused pronounced polymerization. The experimental results are given in Table I. All experiments were conducted at 174–178° and were of four hours duration. The reactions were carried out in a flask connected to a reflux condenser; in the case of monochloroacetic acid catalyst, a sealed tube was used. Iodine and hydrogen bromide, in the form of 1,8-dibromo-*p*-menthane, were the most effective catalysts; the latter, however, is preferred since it is a weaker polymerizing catalyst causing the formation of only six per cent. of higher boiling hydrocarbons. The chloro derivatives of acetic acid caused both hydrogen transfer and polymerization to occur.

TABLE I

Catalyst used Kind	Moles/100 moles of limonene	Mole % of limonene converted to	
		Aro- matics	Higher boiling compounds
Dibromolimonene ^a	3	45	6
Iodine	2	48	12
Monochloroacetic acid	6	3	5
Dichloroacetic acid	4	9	6
Trichloroacetic acid	4	25	24

^a 1,8-Dibromo-*p*-menthane prepared by the action of hydrogen bromide on limonene in acetic acid solution.

In view of the ease with which hydrogen transfer occurs, we intend to reinvestigate the dehydration of alcohols and glycols to hydrocarbons in the presence of acidic type of dehydrating catalysts.

THE IPATIEFF HIGH PRESSURE AND
CATALYTIC LABORATORY
DEPARTMENT OF CHEMISTRY
NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS, AND
UNIVERSAL OIL PRODUCTS COMPANY
RIVERSIDE, ILLINOIS

V. N. IPATIEFF
HERMAN PINES
R. C. OLBERG

RECEIVED FEBRUARY 26, 1945

NEW BOOKS

Lead Poisoning. By ABRAHAM CANTAROW, M.D., Associate Professor of Medicine, Jefferson Medical College, Assistant Physician, Jefferson Hospital, Biochemist, Jefferson Hospital, Philadelphia, Pa., and MAX TRUMPER, Ph.D., Lt. Commander, H-V(S), U.S.N.R., Naval Medical Research Institute, Bethesda, Md., formerly Lecturer in Toxicology, Jefferson Medical College, Consultant in Industrial Toxicology, Cynwyd, Pa. The Williams and Wilkins Company, Baltimore 2, Md., 1944. xiii + 264 pp. 15.5 × 23.5 cm. Price, \$3.00.

This publication presents an extensive review of lead poisoning, particularly of material published within recent years. The authors discuss the absorption, transportation, deposition and excretion of lead, the pathology and pathological physiology and clinical manifestations of lead poisoning, treatment, chronic lead poisoning, lead in blood, body fluids and excretions, normal intake of lead, lead products in industry and the biochemical analysis of lead.

The literature has been ably summarized, although the review is largely non-critical. In spite of the great number of papers that have been published on the subject of plumbism, one is amazed that so little real progress has been made in our knowledge of the fundamental physiology and pathology of lead poisoning. It is quite possible that this is due to inherent difficulties of tracing the effects of exceedingly minute amounts of lead and it reflects the need for exacting physico-chemical study in this field. The tendency to place more emphasis on the interpretation rather than the critical evaluation of data probably accounts for much of the voluminous literature of lead poisoning.

The authors have made a signal contribution in bringing the literature of lead poisoning up to date. The work has been well planned and successfully carried through. A few typographical errors were noted. Among these were

(p. 51) prophyrinuria, (p. 89) Stanzi, (p. 90) hemorrhage, (p. 140) Leivy, (p. 141) Luthje, (p. 141) p. 000, (p. 160) Bradham and (p. 206) nickle. The maximum permissible concentration of lead in potable water used by interstate carriers (p. 170) was set by the U. S. Public Health Service, not the American Public Health Association. The reference to Sawyer, Wagoner, and Erickson (p. 253) is incorrect.

Although the quality of the paper reflects the difficulties of the times, the printing conforms to the usual high standard of the publishers. The book may well be recommended to all who are interested in lead.

L. T. FAIRHALL

The Washington Scientist. A Magazine for the Scientists of Washington. WARE CATTELL, Editor. Published by the Science Press of Washington. Volume I, No. 1, February, 1945. 23 pp. Subscription, \$3.00; single copies, \$0.30.

In announcing the first issue of *The Washington Scientist*, its Editor, Ware Cattell, writes in part as follows:

"The scientific men and women of Washington belong to many groups and occupations. They are the backbone of our Government research agencies; they serve on the faculties of our local schools, colleges, and universities; they administer great foundations for the advancement of human knowledge; they represent scientific societies whose headquarters are in Washington. Some of them are professional engineers, physicians, chemists; others are searching for truth for its own sake, believing only in that ancient fundament that to know the truth will make me free. Still others may be the indispensable handmaidens of science—the technicians, the computers, the apprentices. All, however, belong to the same fraternity, whose objective is to discover and to understand.

"It is a fraternity of hard workers, who are often too busy to know what their neighbor-scientists are doing and how it may affect their own work. And that is where *The Washington Scientist* comes in. It will be the aim of this journal to keep the scientists of Washington well informed about themselves, to promote wider knowledge and understanding of the other man's work and problems, and thereby help to unite them in spirit as well as in space. It will be lively, terse, newsy, accurate and dignified."

This issue contains brief, general articles by past and present leaders of various scientific organizations in Washington, namely: Henry A. Wallace and Dr. E. C. Auchter for the Department of Agriculture, Dr. Frank B. Jewett for the National Academy, Dr. Thomas Parran for the U. S. Public Health Service, Dr. Lyman J. Briggs for the Bureau of Standards, Dr. Alexander Wetmore for the Smithsonian Institution and Major-General Norman T. Kirk for the U. S. Army Medical Department. There are also several pages devoted to personal items about Washington scientists.

Washington has become one of the great scientific centers of this country and indeed of the world. This new magazine will provide additional means of communication and cross-fertilization among Washington scientists and should therefore promote the progress of science in that area.

It is, however, to be hoped that this essentially local publication, useful as it doubtless will be, may not in the least weaken the *Scientific Monthly* and *Science* for which we are deeply indebted to Editor Cattell's parents.

ARTHUR B. LAMB

The Chemistry and Technology of Food and Food Products. Prepared by a Group of Specialists under the Editorship of MORRIS B. JACOBS, Ph.D., Senior Chemist, Department of Health, City of New York. Volume II. Interscience Publishers, Inc., 215 Fourth Avenue, New York 3, N. Y., 1944. xx + 890 pp. 17.5 × 25.5 cm. Price. \$10.50 (set of two volumes, \$19.00).

Volume I of this ambitious work, which has been already reviewed (*THIS JOURNAL*, 66, 1804 (1944)), dealt with the fundamental aspects of chemistry in relation to foods in general and with the composition, standards and particular chemical relations of separate food groups. The present volume, not so chemical in treatment, comprises discussions of unit operations of food processing, sanitary and quality control, preservatives and production methods for common foods.

A striking fact brought by reading the book is the domination of machine operations in food processing, due very largely to machines of the automatic type as compared to the days, not so very long ago, when a large part of the work was done by skilled workmen. Mass, machine production, as is evident from the discussion in the book, still, however, requires expert supervision to turn out products equal to the older ones. Years of experience of the workmen apparently count for less than they used to, but the quality is more uniform than before.

The various chapters take up such general matters as food machinery and unit operations, the supervisory work of various government agencies, the sanitary regulation of food factories even to insect and rat control, dehydration and the preservation of food by temperature control, packaging, and a mass of detail regarding production methods for all the important foods. The material is very much up to date and provides a storehouse of information which would ordinarily be available only to the actual practitioners in each limited field. There is unavoidably some repetition, but the impression remaining is that the specialists who provided the various sections wrote from first-hand knowledge of their material.

Singled out for special mention from the standpoint of the chemistry involved might be the discussions of detergency and washing in food manufacture and the chapter on preservatives. Similarly, from what might be called the practical point of view, the best chapters are the ones on cereal grains, cocoa and chocolate, meat products and alcoholic beverages.

As in the previous volume, copious references are made to the late literature and each chapter is followed by a list of selected references.

A. G. WOODMAN

Determination of Particle Size in Sub-sieve Range. Report of Discussions. Published jointly by the British Colliery Owners Research Association, General Buildings, Aldwych, London, W. C. 2, and the British Coal Utilisation Research Association, Rickett Street, West Brompton, London, S. W. 6, England, 1944. 69 pp.

This little booklet presents in compact form a study of particle size measurement in the sub-sieve range. Emphasis is laid upon the Andreasen pipette, the Heywood photosedimentometer and microscopic measurement. The factors of agglomeration and dispersion and of theory of measurement are very clearly presented. Comparisons are made which show an "S" curve for the cumulative plot against diameter of the Andreasen values, and this is not in accord with the curves obtained by the other methods. There is also some discrepancy between the other methods and the several values which may indicate an inadequate basis for matching Stokes' law diameters with sieve diameters but is more likely to indicate some operational difficulties. The magnitude of the differences between these methods is larger than that which has been encountered by some other workers in the field, but it is exceedingly difficult to state the reasons without a detailed knowledge as to how the methods were carried out. Considerable discussion was offered on the permeability method which does not seem to have met with general approval but which has been used effectively in the case of cement. During the discussion, it was indicated that good agreement has been found and has been reported between it and pipette and turbidimetric methods. The pamphlet is particularly interesting for the detail in which the material is presented and for the full and frank character of the discussion of the material. In these respects, it should be more helpful to a worker in the field than some of the more formal papers which have been presented. However, it does not resolve all of the reasons for discrepancies between methods but does leave an impression of an improved condition over what existed some years ago.

LINCOLN T. WORK

BOOKS RECEIVED

February 10, 1945-March 10, 1945

H. RONALD FLECK. "Plastics." Chemical Publishing Company, Inc., 234 King Street, Brooklyn, New York. 325 pp. \$6.50.

ERICH HERWIG KADMER. "Schmierstoffe und Maschinenschmierung." Verlag von Gebrüder Borntraeger, Berlin-Zehlendorf-West, Germany. 479 pp. RM, 20.80, geh.; RM, 22.40, gebd.

"1944 Year Book of the American Association of Textile Chemists and Colorists." Volume XXI. Howes Publishing Company, Inc., 1 Madison Avenue, New York 10, N. Y. 692 pp. \$3.50.