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The Heathkit model EV-3 IMPScope and its associated equipment, including the sourcebook, were developed in conjunction with project IMPS, supported by the National Science Foundation and conducted by Mr. Norman N. Goldstein, Jr. at the University of California, Berkeley. Mr. Goldstein, also is the author of the unique sourcebook containing extensive laboratory experiments.

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<tr>
<th>Sephadex Type</th>
<th>Fractionation range (MW)* determined for polysaccharides</th>
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</thead>
<tbody>
<tr>
<td>G-25 Fine/Coarse</td>
<td>100-5,000</td>
</tr>
<tr>
<td>G-50 Fine/Coarse</td>
<td>500-10,000</td>
</tr>
<tr>
<td>G-75</td>
<td>1,000-50,000</td>
</tr>
<tr>
<td>G-100</td>
<td>5,000-100,000</td>
</tr>
<tr>
<td>G-200</td>
<td>5,000-200,000</td>
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CHEMICAL PROTECTION AGAINST IONIZING RADIATION by Zénon M. Bacq, Univ. of Liège, Liège, Belgium. Following a historical and technical introduction, the author discusses the various chemical protectors and summarizes what is known of their pharmacological and biochemical effects. He also deals with the much discussed questions of metabolism and distribution of sulfur containing radioprotectors. About 320 pp., about 100 ill. (Amer. Lec. Living Chemistry edited by Newton Kugelmass) In Press

INSTRUMENTATION WITH SEMICONDUCTORS: For Medical Researchers by Clinton C. Brown and George N. Webb, both of The Johns Hopkins Univ., Baltimore, Md. Written by a psychophysicist in consultation with an electronics engineer . . . unique in its comprehensive and lucid treatment of a complex subject. Emphasis is on the instrument process rather than engineering details of construction and operation. ’64, 272 pp., 246 ill. (Amer. Lec. Objective Psychiatry edited by William Horsley Gantt), $10.50

CANINE BEHAVIOR: A History of Domestication; Behavioral Development and Adult Behavior Patterns; Neurophysiology; Psychobiology, Training, Inheritance, Early Experience and Psychosocial Relationships; Experimental Neuroses and Spontaneous Behavioral Abnormalities; Congenital Anomalies and Differential Diagnosis of Neurologic Disease by M. W. Fox. Galesburg State Research Hosp., Galesburg, Ill. ’65, 152 pp., 28 ill. $6.75

THE LAWS OF BONE STRUCTURE by H. M. Frost. Henry Ford Hosp., Detroit, Mich. The author presents his material first in language, using diagrams but no mathematics. In the second section free use is made of technical concepts and knowledge from the fields of anatomy, cytology, properties of materials, structural engineering and mathematics. ’64, 184 pp., 83 ill. (Henry Ford Hospital Surgical Monograph edited by Conrad R. Lam), $7.50

THE IMMUNOCHEMISTRY OF CANCER by Eugene D. Day, Duke Univ., Durham, N.C. Medical science has now arrived at a cross-road in the area of cancer immunology where re-assessment of past work is required. This volume is concerned with the serological search for specific antigens of cancer, antigenic transformations as expressions of malignancy, and immunochromical design of therapeutic and diagnostic anticancer agents. ’65, 192 pp., 5 ill., 53 tables (Amer. Lec. Living Chemistry), $6.75

THE TRAIL OF THE INVISIBLE LIGHT by E. R. N. Grigg. Cook County Hosp., Chicago, Ill. A unique volume covering the era of the roentgen pioneers, the golden age of radiology, and the atomic phase. Includes a list of all significant radiologic periodicals, a radio-historic bibliography, a world-wide almanac of x-ray manufacturers, and an abbreviated dictionary of radiologic biography. About 600 pp., (8½ x 11), 1,404 figs. (Amer. Lec. Roentgen Diagnosis edited by Lewis E. Etter) in Press
CHEMICAL CARCINOGENESIS AND CANCERS by W. C. Hueper and W. D. Conway, both of National Cancer Institute, Bethesda, Md. Provides for the first time a sound basis for rational study of environmental chemical cancer hazards and cancers. The various chemicals are classified and analyzed as to composition and structure in relation to carcinogenicity, causative mechanism and metabolism. About 592 pp., 34 il. (Amer. Lec. Living Chemistry) In Press

INDIANS OF SOUTHERN ILLINOIS by Irvin M. Peithmann. Traces over 10,000 years of prehistoric Indian occupations by four cultures and reviews findings concerning their disappearance before the commencement of the historic period. The culture of the historic Indians is then examined in full. Above all, this is a study of human life—the progress of civilization as gleaned through the wisdom and knowledge of a dedicated archaeologist and historian. '64, 172 pp., 43 il., $6.50

RADIATION ACCIDENTS AND EMERGENCIES IN MEDICINE, RESEARCH, AND INDUSTRY edited by Lawrence H. Lanzi, Argonne Cancer Research Hosp., Chicago, Ill.; John H. Pingel, Argonne National Laboratory, Argonne, Ill.; and John H. Rust, Univ. of Chicago, Chicago, Ill. (31 Contributors) Covers every phase of this important subject including types of accidents, handling the situation at the scene, decontamination of personnel and equipment, medical treatment, radiation dosage measurement, etc. About 336 pp., 32 il., 10 tables. In Press

RED MEN OF FIRE: A History of the Cherokee Indians by Irvin M. Peithmann. The events related here are actual facts gleaned from historical accounts of the Cherokee nation from the time of DeSoto—over four hundred years ago—to the present. They will be of tremendous interest to those who have not read of the “death marches” and accounts of how proud, civilized Cherokee were banished from their homeland to Indian Territory during the early nineteenth century. '64, 184 pp., 52 il., $6.50

STEROID ANALYSIS BY GAS LIQUID CHROMATOGRAPHY by A. Anne Patti and Arthur A. Stein, both of Albany Medical College, Albany, N.Y. Presents the authors' experiences with gas liquid chromatography for the separation and detection of several C18, C19, and some C21 steroids in clinically obtained biological specimens. Phases, conditioning, column and instrument parameters, standardization of the unit for comparative studies, and the identification and quantitation of steroids are briefly discussed. '64, 108 pp., 17 il., $5.50

COPPER AND PEROXIDES IN RADIOBIOLOGY AND MEDICINE by Jack Schubert, Nuclear Science and Engineering Corp., Pittsburgh, Pa. Includes chapters critically reviewing selected aspects of current knowledge of copper chemistry, copper in biochemistry and medicine, and peroxides and copper oxidases in radiobiology. Medical aspects include new views on Wilson's disease, cancer and aging, antipyresis, and hypothermia. Special emphasis given to radiobiology. '64, 224 pp., 18 il., $9.00

BROKEN PEACE PIPES: A Four-Hundred-Year History of the American Indian by Irvin M. Peithmann, Southern Illinois Univ., Carbondale, Ill. Irvin M. Peithmann probably knows more about the problems of the American Indian than any living American. BROKEN PEACE PIPES is an exciting story of the power struggle of three great European powers—England, France, and Spain—in which the Indians were used as pawns for the control of America. '64, 320 pp., $7.50
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*Flash point, T.O.C.:* 18°C.

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*Form:* white solid
*Melting point:* approximately 180°C. (sublimes)
*Boiling point:* approximately 180°C. (sublimes)

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*Form:* colorless liquid
*Specific gravity, 20°/20°:* 1.0409
*Refractive index, nD:* 1.4772
*Flash point, C.O.C.:* 175°F.

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*Boiling point, 760 mm:* 87-88°C.
*Assay:* 97.5%

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Holiday Science Lectures

Heredity and the Nature of Man.

This book, based on the Holiday Science Lectures sponsored by the American Association for the Advancement of Science, is an outstanding statement of the genetical view of mankind and the humanistic view of genetics. Its five chapters contain a remarkably succinct, completely authoritative statement of biological and evolutionary problems literally vital to all of us. The first two chapters enliven and unify the discussion by following a historical sequence. Chapter 1, on the nature of heredity, proceeds from the earlier organismic genetics, still so active and fruitful in the hands of this author, among others, to the recent triumphs of molecular genetics. The second chapter relates those facts to human individuality and to the interactions of genotypes and phenotypes. The ever-present and burning problems of race are next treated with calmness and great common sense: races do exist and do differ in genetic qualities; the differences do not warrant any conclusion with respect to overall superiority; race has no sensible connection with human worth and rights.

A chapter on genetic load and radiation hazard reviews evolutionary principles at rather less than the irreducible minimum. The explanation of stated issues involved in induction of harmful mutations also seems insufficient. Yet here, too, what is too briefly said is well said and is worth saying. The final topic, Whither mankind, includes the interaction of biological and cultural evolution, with special note that natural selection does continue to act strongly within civilized populations and with complex effects, neither all good nor all bad. The author views the human future with mild optimism.

The subjects of this book were earlier treated by Dobzhansky with much greater technical detail and fuller documentation in Mankind Evolving [Yale University Press, 1962; reviewed in Science 136, 142 (1962)]. Heredity and the Nature of Man, a briefer and simpler restatement, should reach an even wider audience.

G. G. Simpson

Museum of Comparative Zoology, Harvard University

Research Résumé


In the preface the authors state that their aim in writing this book was to provide a comprehensive guide to past work as an aid to active researchers in the field. They have certainly succeeded in this purpose.

In the first two chapters Rabinowitch and Belford present a large amount of data on the ultraviolet and visible absorption and fluorescence spectra of uranyl complexes in the solid state and in solution. Some infrared absorption and Raman spectral studies are also reported. The results are presented in a fairly complete fashion, and the interpretations by the original workers are presented. Work done from 1833 to 1960 is covered. In the chapter on solutions, work on hydrolytic species, as well as on uranyl ions complexed with anions in aqueous solution and in some organic solvents, is considered.

The third chapter, on intensity and decay of uranyl fluorescence, commences with a concentrated presentation of the theory of intensity and decay of fluorescence as it applies to the uranyl ion. A discussion of such work done on fluorescence in crystals and in solutions is then presented.

Chapter four, on the photochemistry of uranyl compounds, begins with a fairly thorough discussion of the photochemical reaction of UO₂₋ with I⁻ to form U(IV) and I⁻. Brief mention of photochemical reactions with other inorganic reductants precedes a long section on photochemical reactions of uranyl ions with various organic acids, and finally such reactions with alcohols.

A brief discussion of the present status of the theory of electronic structures and spectra of the uranyl ion is given in the final chapter. It is made clear that much remains to be done toward developing a satisfactory theory.

This book is a very important one for research workers in the field of electronic absorption and fluorescence spectroscopy or photochemistry of uranyl compounds. There are a few typographical errors and careless statements, but they should not cause much trouble. Those who are working in the field will find that this book saves them countless hours of literature searching and provides a composite picture of the work that has been done. It also indicates in what direction future research may be profitable.

Llewellyn H. Jones

Los Alamos Scientific Laboratory, University of California, Los Alamos, New Mexico

New Books

Biological and Medical Sciences


Biochemistry of Muscle Contraction. Proceedings of a conference (Dedham, Mass.), May 1962. John Gergely, Ed. Little, Brown, Boston, 1964. 608 pp. Illus. $18. The papers are presented in the following sections: Myosin (11 papers); Actin (7 papers); Interaction of myosin and actin (9 papers); Structure of striated muscle (4 papers); Smooth muscle, paramyosin, and (Continued on page 431)}
other materials, which uses a 14-Mev generator with an output of $2 \times 10^{11}$ neutrons per second, was described by V. P. Guinn (General Atomic). This system is completely automated and employs a dual pneumatic-tube transfer system (for sample and monitor), sample and monitor rotation during activation, and simultaneous counting of sample and monitor; reproducibilities within the limits of the counting statistics are now achieved. Sensitivity of the system is about 10 $\mu$g of oxygen, that is, 1 part per million in a 10-g sample; at higher oxygen levels the precision and absolute accuracy are within 1 to 3 percent. Samples can be analyzed nondestructively at the rate of one per minute or faster. Very low levels of oxygen have been successfully determined in such metals as Li, Na, K, Cs, Be, Al, Fe, Si, Nb, W, Ti, and Mo. Reactive metals are handled and encapsulated (in low-oxygen copper) in a special inert-atmosphere box.

Certain results of activation-analysis studies in the biological-medical field are most intriguing. M. H. Feldman (Walter Reed Army Institute of Research) pointed out that the average concentrations of manganese in different species of ants may differ by as much as 100-fold, and that concentrations in all ants are much higher than those in man; in some species the concentration is as high as 670 ppm. The resistance to radiation of certain species of ants may be related to these high concentrations of Mn. Manganese concentrations in various species of mollusks also vary rather widely. F. Girardi (Euratom laboratories, Ispra) reported studies on Mn in fresh-water mollusks in which an automated, purely instrumental procedure was used. Analysis of various organs and tissues of the mollusks revealed a greater accumulation of Mn in some sites than in others.

G. D. Bird (University of Florida) reported studies on manganese in the urine of patients with kidney stones. Surprisingly, such patients excrete rather large amounts of Zn but small amounts of Mn, even though both elements are thought to inhibit mineralization. It is believed that certain trace elements tend to prevent the formation of kidney stones and that persons living in areas where the drinking water is very low in trace elements are more likely to develop kidney stones. Osteoporosis patients also excrete large amounts of Zn, and one diabetes patient studied was found to
an ultra-micro system for arterialized sample collection and anaerobic measurement

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excrete large amounts of Mn. N. Spronk (Free University of Amsterdam) presented an apparent solution to one of the major problems in the activation analysis of biological samples for trace elements, that of the large interference produced by the great amounts of Na\textsuperscript{+} formed. In a procedure requiring less than a minute, the activated sample is wet-ashed on top of a Dowex-1 anion exchange column with aqua regia at 60°C, and the sodium is eluted with 6N HCl. Polyvalent cations such as Cu\textsuperscript{2+} remain in the column. In a typical case 99.99 percent of the Na was removed, with negligible loss of Cu. Spronk is currently measuring the Cu levels in the foot muscles and brains of fresh-water snails. G. S. Nixon (University of Glasgow) reported studies of possible roles played by such trace elements as V, Mo, and Se in the prevention of dental caries. H. J. Bowman (Wantage Laboratory) announced the preparation of 90 kg of powdered kale leaves as an international laboratory standard for biologists interested in trace-element determinations. Some 30 elements in kale have been identified; samples are available from Bowen.

Two papers on the use of neutron activation-analysis for forensic purposes were presented. R. F. Coleman (Aldermoston Laboratory) reported on characterization of hair trace-element levels; he and co-workers have found as many as ten trace elements in single strands of human hair by purely instrumental analysis; this result is similar to that of R. E. Jervis et al. A least-squares computer program is used to resolve the gamma-ray spectrum data. The amounts of some elements in an individual's hair seem to vary considerably owning to external contamination. Coleman's group is initiating a large-scale study of trace-element levels in human hair in Great Britain. Guinn described forensic activation-analysis studies of several types of material, the detection of traces of Ba and Sb in gunshot residues on the skin, and the first three court cases in the United States in which results of activation analysis were admitted as evidence.

The conference, which was preceded by a 2-week advanced training course, was sponsored by NATO. For study and experiment, participants had the use of the new research reactor at East Kilbride, facilities of the University of Glasgow and the Western Regional Hospital Board, and various

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<th>COMPOUND</th>
<th>SPECIFIC ACTIVITY (mc/M)</th>
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<td>DL-Alanine-1-C14</td>
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<td>2-Amino-isobutyric-1-C14 acid</td>
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Second Edition
By Robert C. King, Northwestern University

To cover the sweeping advances in genetics, many changes have been made in this popular introductory textbook. Additions include extensive new material on human cytogenetics, the mechanism of gene action, DNA, the Lyon hypothesis, and the genetics of mimicry. Thirty illustrations have been added, and the number of study questions has been increased, with all answers included in the text.

April 1965 approx. 480 pp.; 150 illus. and tables. prob. $8.50

Vertebrates:
Their Structure and Life
By W. B. Yapp, University of Birmingham

Vertebrate zoology is clearly and carefully explained in this introductory textbook in comparative anatomy, and much recent experimental work is covered. The first seven chapters are devoted to the vertebrate classes; organ systems are analyzed and compared in the last fourteen chapters.

The book includes 192 line drawings, eight color plates that are large, clear, and well labeled, a glossary, and a classification table.

March 1965 approx. 450 pp.; 200 illus. and tables. prob. $6.50

The Second Law
An Introduction to Classical and Statistical Thermodynamics
By Henry A. Bent, University of Minnesota

This entirely new pedagogical treatment of thermodynamics requires no prior knowledge of calculus, except in a small portion of the text, and quickly gives the beginner an understanding of the Second Law. It includes a rote use of standard equations, provides many specific examples and problems, with solutions given in detail, and describes new scientific findings. The topics include elementary statistical mechanics, quantum mechanics, acid-base theory, and electrochemistry.

April 1965 450 pp.; 70 line drawings. prob. $6.00

Introduction to Modern Chemistry
By Michael J. S. Dewar, University of Texas

This general outline of the principles of modern chemistry is intended for the student who has some basic knowledge of chemistry and physics but is unfamiliar with modern chemical theory. The book will give him an overall view of the subject and instruction in inorganic and organic chemistry right from the start, in terms of modern orbital theory and the transition state approach to reactivity.

March 1965 224 pp. prob. $3.50
activation-analysis equipment, especially neutron generators and multichannel pulse-height analyzers, provided by American and European manufacturers.

Publication of the proceedings is not planned, but abstracts of the 23 papers presented are available from the program supervisor, J. M. A. Lenihan, Regional Physics Department, 9 West Graham Street, Glasgow, C.4.

V. P. GUINN
General Atomic, San Diego, California
R. E. WAINERDI
Agricultural and Mechanical College of Texas, College Station

Dental Caries: A New Look

Dental caries is a multifactorial disease whose gross manifestations are preceded by events on the molecular, atomic, and subatomic levels. It was specifically to explore and delineate these events that the New York Academy of Sciences sponsored a conference on the mechanisms of dental caries 30 November–1 December 1964 in New York City. The conference represented a multidisciplinary attack on the problem, rather than the usual clinical approaches which have been exhaustively explored in previous dental symposiums.

The mineral structures of the tooth and the physico-chemical laws governing the dissolution of the mineral components were dealt with at the first session. W. E. Brown (American Dental Association) and B. M. Wallace (National Bureau of Standards) pointed out that calcium and phosphorus ions may diffuse through enamel at different rates and that, as a result, an increased concentration of calcium, phosphorus, and hydrogen ions might occur within the enamel; this could account for the subsurface dissolution of the structure. The mechanisms of diffusion of these ions through the enamel can be explained by treating the enamel layer as a semipermeable membrane according to L. S. Fosdick (Northwestern University). Similar results were obtained by M. D. Francis (Miami Valley Laboratories, Proctor & Gamble), who demonstrated a surface complex which controls the rate of dissolution of the underlying enamel structures.

The effects of fluoride were examined in a series of papers from A. S. Posner’s (Cornell Medical) group.
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at the Hospital for Special Surgery. They found that the incorporation of fluoride increases the sharpness of the x-ray diffraction patterns of hydroxyapatite, indicating an improvement in the crystallinity of the mineral toward a more "perfect" apatite. In this respect, Koulourides, Pigman, and Feagin (University of Alabama) reported that while fluoride accelerates the remineralization of enamel, it is ineffective unless calcium and phosphate ions are incorporated into the remineralizing solutions.

The other sessions dealt with the biological structures of the tooth and with their biochemistry and pathology during caries. The concept that enamel is not a dead tissue like hair and nails was stressed by T. B. Coolidge (University of Chicago) in his demonstration of the existence of submicroscopic channels along the apatite crystals. These channels are normally closed at the completion of calcification but are found to be reopened at the onset of caries. H. H. Neumann and N. A. Disalvo (Columbia University) presented the thesis that the process of chewing, in which measurable lengthening and shortening of the teeth occur, influences by compression the molecular structures in the teeth.

The biological dynamism of this once thought "dead" structure was further demonstrated by G. Neil Jenkins (King's College, England), who reported that the plaque was laid down from the proteins of the saliva and only subsequently colonized by acid-producing bacterial flora. S. Wah Leung (University of British Columbia) and I. D. Mandel (Columbia University) emphasized anew that human saliva is made up of a number of components. Mandel's report of differences in the proteins of parotid and submaxillary salivas was of particular interest.

The role of bacteria in the production of acid was studied by H. V. Jordan (National Institutes of Health), using gnotobiotics. He found that plaque and caries were absent in germ-free hamsters but could be produced at will by infecting the animals with cariogenic streptococci. However, the role of bacteria in the production of acid was disputed by V. F. Lisanti and B. Eichel (Institute of Stomatological Research, Brookline, Massachusetts). They attributed the greater glucolytic activity to mammalian leukocytes present in the oral cavity. A masking effect which covers the acid produc-
tion by bacteria in the human mouth was attributed by J. Tonzetich and S. Friedman (Colgate-Palmolive Co.) to exfoliated epithelial cells and their greater metabolic activity.

The coordination of calcium by certain naturally occurring complexing agents was shown by M. L. Schole (Bronx-Lebanon Hospitals) and J. F. Frederick (Dodge Chemical Co. Research Labs.) to be a probable mechanism for releasing protons. These protons, normally displaced from biological ligands by the coordinated cation, could add to the sum total of hydrogen ions influencing the dissolution of the enamel.

The possibility of an anti-caries "vaccine" was suggested by the brilliant presentation by H. Blechman and M. Mori (New York University) of proof of antibody production and the presence of antigenic substances in carious dentin.

The audience was brought up to date on the epidemiological approach to the problem by J. Dunning (Harvard University) and on the prospects for future research by B. Bibby (University of Rochester).

The papers presented at the conference will be published by the New York Academy of Sciences.

JEROME F. FREDRICK
Dodge Chemical Company,
Bronx, New York

Forthcoming Events

January

27-30. Geological Soc., Southwestern Federation, Austin, Tex. (S. P. Ellison, Jr., Department of Geology, Univ. of Texas, Austin)
27-31. Neurosurgical Soc. of America, San Juan, Puerto Rico. (C. H. Davis, Jr., Bowman Gray School of Medicine, Winston-Salem, N.C.)
28-29. Rheology Soc., winter meeting, Santa Barbara, Calif. (R. S. Porter, California Research Corp., Richmond Laboratory, 576 Standard Ave., Richmond, Calif.)
28-30. American Geophysical Union, southwest regional, Socorro, N.M. (J. B. Franzini, Civil Engineering Dept., Stanford Univ., Stanford, Calif.)
28-30. Large-Scale Ahr-Sea Interaction, symp., Bombay, India. (UNESCO, Office of Oceanography, Pl. de Fontenoy, Paris 7, France)
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February


1-5. Gas Chromatography, conf., Los Angeles, Calif. (H. L. Tallman, Physical Sciences Extension, Room 6532, Engineering Bldg., Univ. of California, Los Angeles 90024)

1-3. American Soc. Tool and Manufacturing Engineers, Die Design and Press Tooling, seminar, Detroit, Mich. (L. S. Fletcher, ASTM, 10700 Puritan St., Detroit 38)

2-4. On-Line Computing, Symp., Los Angeles, Calif. (T. Kramer, Engineering Extension, Univ. of California, Los Angeles 90024)


3-5. Southwest Chemical Assoc./Chemical Market Research Assoc., joint meeting, Houston, Tex. (H. F. Pfann, Enjay Chemical Co., 60 W. 49 St., New York 10020)

3-5. Military Electronics, Inst. of Electrical and Electronics Engineers, Los Angeles, Calif. (IEEE, 3600 Wilshire Blvd., Los Angeles 90005)


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<table>
<thead>
<tr>
<th>Quantity</th>
<th>No. Pieces</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Case</td>
<td>48 pcs.</td>
<td>14.87 (.31 ea.)</td>
</tr>
<tr>
<td>10 Cases</td>
<td>480 pcs.</td>
<td>14.09 (.29 ea.)</td>
</tr>
<tr>
<td>25 Cases</td>
<td>1200 pcs.</td>
<td>13.30 (.27+ ea.)</td>
</tr>
<tr>
<td>50 Cases</td>
<td>2400 pcs.</td>
<td>12.52 (.26 ea.)</td>
</tr>
<tr>
<td>100 Cases</td>
<td>4800 pcs.</td>
<td>11.74 (.24+ ea.)</td>
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3–6. Fatty Acids Seminar, Council of Scientific and Industrial Research, Hyderabad-9, India. (G. Satyanarayana Rao, Council of Scientific and Industrial Research, Regional Research Laboratory, Hyderabad-9)


6–9. Medical Education, annual, Chicago, Ill. (W. S. Wiggins, Council on Medical Education, American Medical Assoc., 535 N. Dearborn St., Chicago 60610)

7–11. American Inst. of Chemical Engineers, 55th national, Houston, Tex. (AIChE, 345 E. 47 St., New York, N.Y. 10017)


12–17. All Science Conf., annual, Karachi, Pakistan. (N. Ahmad, Secretary General, Pakistan Assoc. for the Advancement of Science, Karachi)


14. Scientific Conference on Psychoanalysis, 3rd annual, Council of Psycho-

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14-11. German Foundation for the Developing Countries, Public Health Training Problems in Asia, intern. seminar, Berlin, Germany. (GFDC, Tagungsreferat, Agrippinenstrasse 10, 53 Bonn, Germany)


14-18. Society of Economic Geologists, annual, Chicago, Ill. (E. N. Cameron, Room 30, Science Hall, Univ. of Wisconsin, Madison)


15-20. Impact of Mendelism on Agriculture, Biology, and Medicine, intern. symp., New Delhi, India. (A. T. Nataraajan, Secretary, Indian Soc. of Genetics and Plant Breeding, Division of Botany, Indian Agricultural Research Inst., New Delhi 12)


17-19. American Academy of Occupational Medicine, annual, Columbus, Ohio. (G. M. Hemmert, AAOM, Eastman Kodak Co., 343 State Street, Rochester 4, N.Y.)


17-21. American College of Cardiology, annual, Boston, Mass. (Executive Director of the College, Empire State Building, New York, N.Y. 10001)

18-19. Mechanical and Transplant Heart Substitutes, symp., Heart Assoc. of Southeastern Pennsylvania, Philadelphia. (L. L. Perry, 14 ASP, 318 S. 19 St., Philadelphia 19103)

18-20. Skin Bacteria in Infection, symp., San Francisco, Calif. (Administrative Secretary, Div. of Dermatology, Univ. of California, San Francisco Medical Center, San Francisco 94122)


20. Reliability, 6th annual West Coast symp., American Soc. for Quality Control, Los Angeles, Calif. (A. S. Golant, Rockedye, Canoga Park, Calif.)

20-26. Caribbean Dental Convention, 4th annual, Port of Spain, Trinidad. (K. Henry, Dental Assoc. of Trinidad and Tobago, 109 Frederick St., Port of Spain)

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tropomyosin (7 papers); Energetics of muscle contraction (6 papers); and Theories of muscle contraction (4 papers).

Biomedical Sciences Instrumentation. vol. 2. Proceedings, Second National Symposium (Albuquerque, N.M.), May 1964, William E. Murry and Peter F. Salisbury, Eds. Plenum Press, New York, 1964. 304 pp. Illus. $12.50. Twenty-five papers presented at the symposium sponsored by the Instrument Society of America; the sessions were Transmission of vibratory energy through tissue: A tool for measurement of physiological parameters (3 papers); Eye motion: Methods for measurement and their significances (6 papers); Implantable sensors (4 papers); Present problems in physiological monitoring (6 papers); and Biotelemetry and physiology (6 papers).


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terbrates" by R. A. Beatty; "Intersexuality in fishes" by James W. Ax; "Intersexuality in amphibians" by Charles L. Foote; "Intersexuality in reptiles" by Thomas R. Forbes; "Intersexuality in birds" by Elsie Taber; "Intersexuality in mammals" by Joyce Bruner-Lorand; and "Intersexuality in man" by C. N. Armstrong. Introduction by A. J. Marshall.


Mental Retardation. A review of research. Harvey A. Stevens and Rick Heber, Eds. Univ. of Chicago Press, Chicago, Ill., 1964, 516 pp. Illus. $12.50. Thirteen papers: "Overview" by Harvey A. Stevens; "Psychological evaluation and differential diagnosis" by Arthur L. Benton; "Research in education" by Samuel A. Kirk; "Research in learning and performance" by M. Ray Denny; "Personality" by Rick Heber; "Relation of environmental factors to intellectual functioning" by Boyd R. McCandless; "Social and occupational adjustment" by Herbert Goldstein; "Epidemiology" by Ernest M. Gruenberg; "Biochemical and clinical correlations" by Harry A. Waismann and Theo Gerritsen; "Genetics in Mental Retardation" by V. Elving Anderson; "Teratogenesis of the central nervous system" by F. Clarke Fraser; "Neurophysiology" by N. Malamud; and "Behavioral disturbances in the mentally retarded" by Delton C. Beier.


Methods in Medical Research. vol. 10. H. N. Eisen, G. D. Snell, J. L. Strominger,
and I. Lieberman, Eds. Year Book Medical Publishers, Chicago, 1964. 389 pp. Illus. $11.50. The 48 papers are grouped under the following headings: Methods for Study of Histocompatibility Genes and Isoantigens (9 papers); Some Methods Applicable to Study of Experimental Hypersensitivity (23 papers); Resistance to Chemotherapeutic Agents (10 papers); and Methods with Cultures of Dispersed Animal Cells (5 papers).


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NEWS AND COMMENT

(Continued from page 385)

Scientists in the News

At Quadri-Science, Inc., Washington, D.C.: Hermann J. Muller, winner of the 1946 Nobel prize in physiology and medicine, has become director of genetic biology; and Henry Taube, an inorganic chemist and member of the National Academy of Sciences, has been named director of chemical research.

Maurice Ewing, director of Columbia University's Lamont Geological Observatory, has been awarded the gold Medal of the Royal Astronomical Society of Great Britain. Ewing received the award for his "contributions to marine geophysics."

Robert S. Gordon, Jr., has been named clinical director of the National Institute of Arthritis and Metabolic Diseases. Gordon had been a senior investigator in the laboratory of metabolism at the National Heart Institute. He succeeds Joseph J. Bunim, who died in July.

Erland Nelson has been appointed professor and head of the newly created department of neurology at the University of Maryland School of Medicine. Nelson was formerly on the faculty of the medical school at the University of Minnesota.

Carl G. Hartman, research consultant at the Margaret Sanger Research Bureau in New York City, has been awarded the first Marshall Medal, an award established by the British Society for the Study of Fertility.

Edgar T. Wherry, emeritus professor of botany at the University of Pennsylvania, was awarded the Mary Soper
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Pope Medal of Cranbrook Institute of Science, Bloomfield Hills, Michigan. The medal is the only award of the Institute, and is "bestowed from time to time for distinguished contribution to the plant sciences."

**Walter E. Loomis**, professor of plant physiology at Iowa State University, has been appointed visiting professor of botany at the University of North Carolina, Chapel Hill, for the 1964–65 academic year.

**Carl Cori** has been named distinguished service professor of biological chemistry at Washington University School of Medicine, St. Louis. Cori, who is head of the department of biological chemistry, was awarded the Nobel Prize in 1947 for work on the conversion in the body of glycogen into glucose.

**Antoni Zygmund** has been appointed the Gustavus F. and Ann M. Swift Distinguished Service Professor of Mathematics at the University of Chicago. Zygmund has been professor of mathematics at the university.

At Harvard University:  
**Duncan E. Reid** has been appointed the first Kate Macy Ladd Professor of Obstetrics and Gynecology. Reid is head of the department of obstetrics and gynecology at the Medical School. The professorship was established by Harvard following receipt of $500,000 from the Josiah Macy, Jr. Foundation in New York.

**Elkan R. Blout** has become the first Edward S. Harkness professor of biological chemistry. The Harkness professorship was one of two chairs established in the faculty of medicine by the university from a gift of $1 million from The Commonwealth Fund.

**William C. Menninger** and Beryl J. Roberts have been awarded the 1964 Citation Awards of the Society of Public Health Educators. Menninger, co-founder of the Menninger Clinic and Foundation for Psychiatric Treatment, was cited for his "pioneering exploits in broadening public interest and support for the prevention, care, and treatment of mental illness in the United States and abroad." Roberts was honored for "enlarging public understanding about new preventive techniques against overpopulation, child diseases, malnutrition, sanitation, tuberculosis, and cancer." She is pro-

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