pathology as applied to plant tissue culture. There is a generous mixture of contributions from those primarily interested in the technique or refinements of media to those who are utilizing the technique as a tool for investigation of biological problems. The articles *in toto* indicate that tissue culture is rapidly emerging from its preliminary, general survey stage.

It is unfortunate that there has been such a long time lapse between the conference and the publication of the proceedings. The method of printing was apparently selected to expedite publication. The book is attractively bound, with a hard cover, but the first 26 pages of my review copy were poorly collated, with the result that several pages were off-center; several lines of legend were also omitted, and some labels within figures were not translated into English, as they should have been to provide uniformity. A subject index would have been helpful.

The book accomplishes its intent to provide the scientific community with knowledge and understanding of some of the new developments in nutrition, metabolism, physiology, histogenesis, morphogenesis, genetics, cytology, and pathology as applied to tissue culture. It also makes accessible an accurate account of the conference to those who were not fortunate enough to be present.

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Biophysical Research

Although the title does not indicate it, this book, **Ultrasonic Energy: Biological Investigations and Medical Applications** (University of Illinois Press, Urbana, 1965. 396 pp., $12.50), edited by Elizabeth Kelly, comprises the proceedings of a symposium sponsored by the Biophysical Research Group of the University of Illinois (Urbana) in June 1962. Owing to the prestige and the important pioneering work of the host laboratories—as reflected in the fact that they contributed 7 of the 25 papers (about one-third of the book)—these symposia are held in high esteem and attract most of the active workers in the field. This alone would be sufficient reason to recommend the book to all who have more than a passing interest in the field. That there are not many similar books only serves to emphasize this point.

Papers from 17 laboratories, in 7 countries across the world, together with the discussions, are presented. The topics cover many aspects of the current application of ultrasound in experimental, therapeutic, and diagnostic fields, with the exception of ultrasonic diathermy techniques used in physical medicine. All the papers are well written, in English, and with remarkably few apparent errors—no mean achievement considering the fact that ten of the papers originate from four non-English-speaking countries. The majority of the papers are of high standard and present work that was reasonably recent in 1962. Why it takes more than 2½ years to publish verbatim reports of a symposium, when authors are generally rushed into correcting and returning transcriptions within 24 hours, is a baffling question. But this delay, in addition to impeding dissemination of information, probably lowers the quality of papers presented at symposia, because authors are likely to seek prompt publication of their new and good work in reputable journals.

The proceedings are presented *in toto*; thus the book is illustrated profusely, almost to superfluity. For example, although Figs. 3 to 7 in chapter 8 were probably useful during verbal presentation, they serve little or no purpose in print. The quality of the illustrations is generally high with a few exceptions—for example, Figs. 5 and 6 in chapter 14. The electron micrographs in chapter 8 leave much to be desired, even when judged by the standards of 1962.

The chairmen of various sessions make tantalizing references to the "unusual interest of previous symposia," but these are neither listed nor numbered. Because the proceedings were apparently published under different titles, and by different publishers, it is not easy to satisfy the curiosity aroused. Inclusion of a cumulative index of subjects and authors, and the affiliations of active participants, in the space that could be made available by judicious omissions of illustrations, such as photographs of equipment to which the only reference is something like "Fig. *X* shows the generator" (for example, Fig. 1 in chapter 12; and Fig. 1 in chapter 23, since it reappears as part of Fig. 3), would enhance the usefulness of the book.

Notwithstanding these minor and hopefully constructive criticisms, congratulations are due all those concerned with the production of the book and particularly the editor, who also organized the symposium. The book should be accessible to all interested in the field and is recommended not as a textbook or as an applications guide but as a statement of the state of art—the state of art in 1962.

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New Books

Mathematics, Physical Sciences, and Engineering

Advances in Computers. vol. 6. Franz L. Alt and Morris Rubinoff, Eds. Academic Press, New York, 1965. xvi + 310 pp. Illus. $13. Six papers: "Information retrieval" by Claude E. Walston; "Speculations concerning the first ultraintelligent machine" by Irving John Good; "Digital training devices" by Charels R. Wickman; "Number systems and arithmetic" by Harvey L. Garner; "Considerations on man versus machines for space probing" by P. L. Bargellini; and "Data collection and reduction for nuclear particle trace detectors" by Herbert Gelernter.

Advances in Control Systems: Theory and Applications. vol. 2. C. T. Leondes, Ed. Academic Press, New York, 1965. 323 pp. Illus. $13. Five papers: "The generation of Liapunov functions" by D. G. Schultz; "The application of dynamic programming to satellite intercept and rendezvous problems" by F. T. Smith; "Synthesis of adaptive control systems by function space methods" by H. C. Hsieh; "Singular solutions in problems of optimal control" by C. D. Johnson; and "Several applications of the direct method of Liapunov" by Richard Allison Nesbit.

Atmospheric Oxidation and Antioxidants. Gerald Scott. Elsevier, New York, 1965. 540 pp. Illus. $26.

The Chemistry of Open-Chain Organic Nitrogen Compounds. vol. 1, *Functions Derived from Ammonia: Amines, Amides, Imines, Nitriles, Isocyanates, Etc.* Peter A. S. Smith. Benjamin, New York, 1965. 368 pp. Illus. $19.50.

Contributions to Statistics. C. R. Rao, Ed. Pergamon, New York; Statistical Publishing Co., Calcutta, India; 1965. 532 pp. Illus. $18. Thirty-two papers presented to Professor P. C. Mahalanobis on the occasion of his 70th birthday.

Disquisitiones Arithmeticae. Carl Friedrich Gauss. Translated from the second German edition (Gottingen, 1870) by Arthur A. Clarke. Yale Univ. Press, New Haven, Conn., 1966. 492 pp. Illus. Paper, $2.95; cloth, $12.50.

Electricity and Magnetism: An Introduction to the Theory of Electric and Magnetic Fields. Oleg D. Jefimenko. Appleton-Century-Crofts (Meredith), New York, 1966. 605 pp. Illus. $13.

Elements of Probability Theory. L. Z. Rumshiskii. Translated from the Russian

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