


SCIENCE

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Willem F. Westendorp, M.A. in E.E., U. of Delft, Holland (1928); doctorate, R.P.I. (1947). He has been with General Electric since 1928 and is widely known for contributions to the design of particle accelerators and x-ray equipment. He is shown with first commercial irradiated product, Irrathene® tape. This material, developed by Dr. Westendorp's colleagues at G.E., is strengthened by exposure to electrons from resonant transformer he invented (background).

High voltage for medicine and industry

Studies in electron physics by Dr. W. F. Westendorp of General Electric led to the versatile resonant transformer

When a child on a swing wants to "go higher," the easiest way for father to impart needed energy is through a series of gentle, properly timed pushes. Dr. Willem F. Westendorp of the General Electric Research Laboratory used a similar idea in creating the *resonant transformer*, a machine that increases voltages from 200 to as high as 4,000,000 in a series of low-frequency "pushes" from carefully tuned coils.

In x-ray equipment, the resonant transformer is being used extensively for cancer therapy. In industry, it makes possible the inspection of steel up to eight inches thick.

As the modern scientist's cheapest and safest source

of high-voltage electrons, this transformer has been used recently in such fields of research as atomic energy and food and drug sterilization. It is also the key tool in the new area of "radiation chemistry."

Dr. Westendorp's work is but one example of how scientists at General Electric are uncovering new knowledge that can contribute to better living standards for people today and for generations to come.

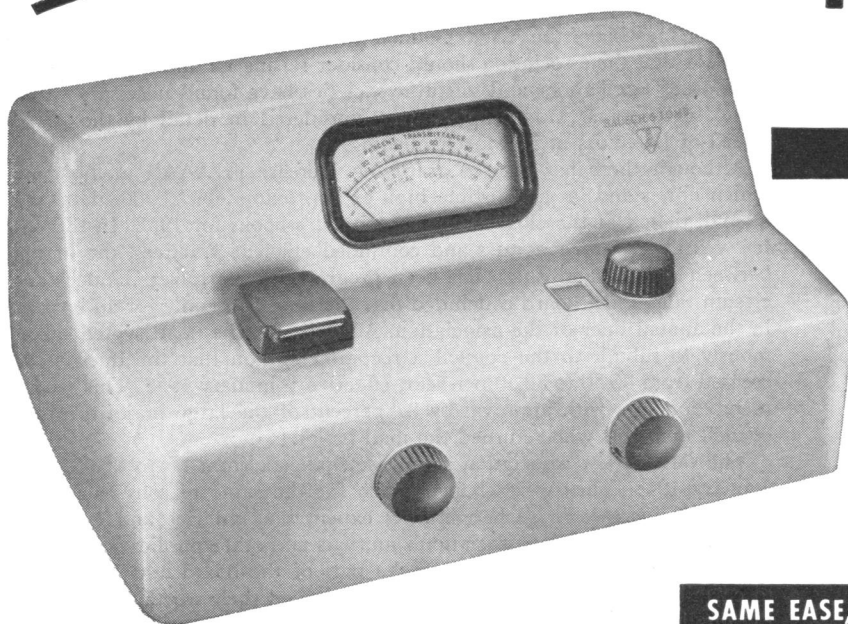
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The articles are, in general, excellent representations of the present state of knowledge, but if one is interested in a particular disputed point or in whether someone else in the past has expressed a particular idea, one cannot rely on the fact that the dispute or the idea is not cited in the *Handbuch*. I assume that the present policy is necessary because of the enormous mass of material to be covered, but I cannot avoid being sorry that this is so.

KARL F. HERZFELD
Catholic University of America

New Books

Man into Space. New projects for rocket and space travel. Hermann Oberth. Translated from the German by G. P. H. de Freville. Harper, New York, 1957. 246 pp. \$4.50.

The Art of Painting. Leonardo da Vinci. Translated from the Italian by John Francis Rigaud, with an introduction by Alfred Werner. Philosophical Library, New York, 1957. 224 pp. \$4.75.

Lascaux and Carnac. Glyn Daniel. Macmillan, New York; Butterworths, London, ed. 2, 1957. 127 pp. \$3.

Genetic Mechanisms: Structure and Function. vol. XXI of *Cold Spring Harbor Symposia on Quantitative Biology*. Biological Laboratory, Cold Spring Harbor, New York, 1956. 410 pp. \$8.

Trade and Market in the Early Empires. Economics in history and theory. Karl Polanyi, Conrad M. Arensberg, Harry W. Pearson, Eds. Free Press, Glencoe, Ill., 1957. 400 pp. \$6.

Progress in Low Temperature Physics. vol. II. C. J. Gorter, Ed. North-Holland, Amsterdam; Interscience, New York, 1957. 491 pp. \$10.75.

Geometric Integration Theory. Hassler Whitney. Princeton University Press, Princeton, N.J.; Oxford University Press, London, 1957. 401 pp. \$8.50.

Practical Physics. A course of introductory experiments. R. W. Parsons. Hong Kong University Press, Hong Kong; Oxford University Press, London, 1957. 89 pp.

Soil Conservation. J. H. Stallings. Prentice-Hall, Englewood Cliffs, N.J., 1957. 586 pp. \$8.50.

Man as an Animal. W. C. Osman Hill. Hutchinson, London, 1957. 176 pp. \$1.50.

Psychological Aspects of Aging. Proceedings of a conference on planning research, Baltimore, Md., 24-27 Apr. 1955. John E. Anderson, Ed. American Psychological Association, Washington, D.C., 1956. 331 pp.

Microbial Ecology. Seventh symposium of the Society for General Microbiology held at the Royal Institution, London, Apr. 1957. Cambridge University Press, Cambridge, England, 1957. 396 pp. \$6.50.

Extinct Languages. Johannes Friedrich. Philosophical Library, New York, 1957. 192 pp. \$5.

Solid Geometry. Hugo Mandelbaum and Samuel Conte. Ronald, New York, 1957. 261 pp. \$4.

Man among the Stars. Wolfgang D. Müller. Criterion Books, New York, 1957. Translated from *Du Wirst Die Erde Sehn als Stern*, Deutsche Verlags-Anstalt. 307 pp. \$4.95.

The Handbook of Private Schools. An annual descriptive survey of independent education. 1957. Porter Sargent, Boston, ed. 38, 1957. 1120 pp.

Carotene. Its determination in biological materials. V. H. Booth. Published under the auspices of the Society for Analytical Chemistry. Heffer, Cambridge, England, 1957. 126 pp. 18s.

Radio Aids to Air Navigation. J. H. H. Grover. Philosophical Library, New York, 1957. 148 pp. \$6.

A Guide to the Literature of Chemistry. E. J. Crane, Austin M. Patterson, and Eleanor B. Marr. Wiley, New York; Chapman & Hall, London, ed. 2, 1957. 412 pp. \$9.50.

Report of the Meeting on Semiconductors Held by the Physical Society in Collaboration with British Thomson-Houston Ltd. Rugby, Apr. 1956. Physical Society (London), London, England, 1957. 153 pp. Members, 12s. 6d; nonmembers, 20s.

Teaching Science in the Secondary School. R. Will Burnett. Rinehart, New York, 1957. 394 pp. \$5.25.

Methods of Biochemical Analysis, vol. IV. David Glick, Ed. Interscience, New York, 1957. 371 pp. \$8.50.

Gas Chromatography. A. I. M. Keulemans. C. G. Verver, Ed. Reinhold, New York; Chapman & Hall, London, 1957. 236 pp. \$7.50.

Traité de Microscopie. Instruments and techniques. A. Policard, M. Bessis, and M. Locquin. Masson, Paris, 1957. 614 pp. F. 5200.

Annual Review of Medicine, vol. 8. David A. Ryland and William Creger. Annual Reviews, Palo Alto, Calif., 1957. 537 pp. \$7.

The Microbial World. Roger Y. Stanier, Michael Doudorff, and Edward A. Adelberg. Prentice-Hall, Englewood Cliffs, N.J., 1957. 704 pp. \$8.

Dairy Microbiology. Edwin M. Foster, F. Eugene Nelson, Marvin L. Speck, Raymond N. Doetsch, and Joseph C. Olson, Jr. Prentice-Hall, Englewood Cliffs, N.J., 1957. 492 pp. \$10.

Development of Vertebrates. Emil Witschi. Saunders, Philadelphia, 1956. 604 pp. \$8.50.

Readings in Marriage Counseling. Clark E. Vincent. Crowell, New York, 1957. 12 pp. \$4.50.

Thought, Life and Time as Reflected in Science and Poetry. H. G. Wood. The tenth Arthur Stanley Eddington memorial lecture. Cambridge University Press, Cambridge, England, 1957 (order from Cambridge Univ. Press, 32 E. 57 St., New York). 64 pp. Paper, \$0.90.

Plant Protection Conference 1956. Proceedings of the second international conference at Fernhurst Research Station, England. Edited by Plant Protection, Ltd. Academic Press, New York; Butterworths, London, 1957. 326 pp. \$9.

A Text-Book of Surgical Pathology. Charles F. W. Illingworth and Bruce M. Dick. Little, Brown, Boston, ed. 7, 1956. 738 pp. \$14.

Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

Teaching about Cancer. A guide to source materials and information prepared to help secondary-school administrators and teachers in developing instruction on cancer suitable to their curriculum requirements. American Cancer Society, New York, 1957. 48 pp. Free on request.

Institute of International Education 37th Annual Report, 1956. Institute of International Education, New York, 1957. 56 pp.

Interim Report to the Congress from the Commission on Increased Industrial Use of Agricultural Products. J. Leroy Welsh, Karl D. Butler, George H. Coppers, Charles R. Sayre, Frank J. Welch. c/o U.S. Department of Agriculture, Washington, D.C., 1957. 190 pp.

Annotated Tables of Strength and Elastic Properties of Rocks. Paper No. 663-G. Rudolph G. Wuerker. Petroleum Branch, American Institute of Mining Engineers, Dallas, Tex., 1956. 22 pp. Single copy free to AIME members; \$0.25 per additional copy.

Directory of Fisheries Institutions: Asia and the Far East. United Nations Indo-Pacific Fisheries Council secretariat, Ed. Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Far East, Bangkok, Thailand, 1957. 78 pp.

American Cooperation with Higher Education Abroad. A survey of current programs. Bull. 1957, No. 8. Paul S. Bodenman, with the cooperation of the Inter-Agency Committee and the President's Baylor Proposals. 220 pp. \$0.75. *Opening Enrollment in Higher Educational Institutions: Fall 1956*. Circ. No. 496. M. Clemens Johnson and C. George Lind. 46 pp. \$0.35. *Trends in Significant Facts on School Finance, 1929-30 to 1953-54*. Circ. No. 498. Clayton D. Hutchins, Albert R. Munse, Edna D. Booher. 84 pp. \$0.60. U.S. Department of Health, Education, and Welfare (order from Government Printing Office, Washington 25, D.C.), 1957.

Early White Influence upon Plains Indian Painting. George Catlin and Carl Bodmer among the Mandan, 1832-34. Misc. col., vol. 134, No. 7. Publ. 4292. John C. Ewers. 11 pp. *A Skull of the Bridger Middle Eocene Creodont, *Patriofelis Ulta Leidy**. Misc. col., vol. 134, No. 8. Publ. 4293. C. Lewis Gazin. 20 pp. Smithsonian Institution, Washington, D.C., 1957.

Production and Mill Utilization of Feed Grains in Arkansas. Bull. 583. W. R. Morrison. 30 pp. *When to Harvest Oats for Hay and Silage*. Bull. 586. R. L. Thurman, O. T. Stallcup, J. L. Stephens, N. E. Justus. 18 pp. *Arkansas Soybean Variety Trials, 1951 to 1956*. Rept. ser. 65. C. E. Caviness and P. E. Smith. 11 pp. Agricultural Experiment Station, College of Agriculture and Home Economics, University of Arkansas, Fayetteville, 1957.

The Scalp and Its Care. With clinical notes on dandruff and seborrhea. Schering Corp., Bloomfield, N.J., 1957. 25 pp.