# SCIENCE

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The instruments shown and described here are designed to provide the teacher, research worker or diagnostician with specialized equipment for every aspect of cardiac sound study: permanent graphic recording (2 channels); group auscultation; high fidelity tape recording and playback; and visual monitoring.

Each instrument design reflects the knowledge and incorporates the experience gained by Sanborn Company during forty years of precision medical instrument manufacture. Bulletins providing detailed performance data and specifications of each instrument are available on request.

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#### HEART SOUND TAPE RECORDER PLAYER Sanborn-Ampex Model 278

A modern, versatile unit for listening, recording and playback of heart sounds, comprised of a Tape . Transport (tape speed, 7.5 in/sec); Recording and Playback Amplifiers; a Dynamic Heart Sound Microphone and five Chest Pieces; and one Audiophone. The heart sounds heard, when the Sanborn "278" is used as either an amplifying stethoscope or as a playback device with recorded tapes, are not altered as compared to those heard with a good quality acoustical stetho-Furthermore, scope. sound loudness can be controlled for maximum detection of faint sounds and murmurs. Monitoring of heart sounds, during recording, is done from the tape itself. In addition to recording and playback using 7" or smaller tape reels, the Sanborn-Ampex may also be used for repetitive playback of small loops of tape. Prerecorded teaching tapes, available from the American Heart Association, may also be played back with this instrument.

#### AMPLIFYING STETHOSCOPE Model 256

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An electronic amplifying stethoscope which permits the auscultatory sounds to be heard at any desired loudness by one or more observers. The sounds as heard possess exactly the same quality and character as when heard with a good acoustical stethoscope. Lowpitched or high-pitched sounds or murmurs may be accentuated, at the operator's discretion, by means of a set of five detachable microphone chest pieces. For listening by groups of up to 13, audiophones may be connected directly to the Amplifying Stethoscope; for groups of 20 to 30 supplementary junction boxes (and additional audiophones) are used; and for groups as large as 200 to 400 in amphitheaters or auditoriums, listening may be achieved by the use of permanently wired audiophone jacks.

For auditorium use, in place of multiple audiophones, the Model 263-100/200 Loudspeaker and Power Amplifier is available.

# VISO-SCOPE Oscilloscope Model 169A

When simultaneous visual presentation of heart sounds is desired, the Viso-Scope may be used in conjunction with any of the previous three instruments.\* Waveform appears on the long-persistence 5" Viso-Scope screen as a sharply defined, bright yellow trace. This oscilloscope is extremely easy to operate, and is specially designed to be compatible with Sanborn recording instruments.

\*With supplementary coupling units, write for details.



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hypercritical analysis of H. J. Muller's writings on the effects of radiation on man. It also contains the curious conclusion that, because there are uncertainties in the assumptions made in certain calculations and because "persons not thoroughly indoctrinated in genetics and unfamiliar with the shaky basis of the primary assumptions" may overlook these uncertainties and may as a consequence attribute greater exactitude to quantitative calculations than the investigators mean to imply, no such calculations should be made. It would seem that educated estimates, even though they may be quite inaccurate, are better than no estimates, and that this is especially true at present, when standards of permissible dosages of the radiation are being set.

While I may disagree with some statements made in the final chapter, I heartily concur with the authors' efforts "to emphasize the present inadequacies in our knowledge of the operation of natural selection on human populations, inadequacies which permit widely different viewpoints" and with their statement that, "on the basis of extensive plant and animal work, it seems reasonable to conclude that all levels of the radiation of human populations will result in mutation production. There is a high probability (but not certainty) that under the conditions of western culture such mutation will act to the detriment of the populations concerned." I might add that there is certainty that such mutations will be detrimental, in the overwhelming majority of cases, to those who are homozygous for them.

ARTHUR G. STEINBERG
Western Reserve University

# Books Reviewed in The Scientific Monthly, November

The Zeppelin in the Atomic Age, E. J. Kirschner (Univ. of Illinois Press). Reviewed by A. J. Fairbanks.

A Naturalist in Palestine, V. Howells (Philosophical Library). Reviewed by W. Beebe.

In-Service Education for Teachers, Supervisors, and Administrators, N. B. Henry, Ed. (Univ. of Chicago Press). Reviewed by H. E. Wise.

Aspects of River Pollution, L. Klein (Academic Press; Butterworth's). Reviewed by J. Durham.

Introduction to Operations Research, C. W. Churchman, R. L. Ackoff, and E. L. Arnoff (Wiley; Chapman and Hall). Reviewed by S. E. Gluck.

Lecture Notes on the Use of the Microscope, R. Barer (Thomas). Reviewed by O. W. Richards.

The Copernican Revolution, T. S. Kuhn (Harvard Univ. Press). Reviewed by H. N. Swenson.

Inventors and Inventions, C. D. Tuska (McGraw-Hill). Reviewed by A. M. Palmer.

Patent Notes for Engineers, C. D. Tuska (McGraw-Hill). Reviewed by A. M. Palmer.

The Mathematics of Physics and Chemistry, H. Margenau and G. M. Murphy (Van Nostrand). Reviewed by S. S. Ballard.

Coal Science, D. W. van Krevelen and J. Schuyler (Elsevier). Reviewed by H. C. Howard.

## **New Books**

Dry-Battery Receivers with Miniature Valves. E. Rodenhuis. Philips Technical Library, Eindhoven, Netherlands, 1957. 240 pp. \$4.95.

Effect of Radiation on Human Heredity. Report of a study group convened by WHO together with papers presented by various members of the group. World Health Organization, Geneva, 1957 (order from Columbia University Press, New York). 168 pp. \$4.

Quantitative Pharmaceutical Chemistry. Glenn L. Jenkins, John E. Christian, George P. Hager. McGraw Hill, New York, ed. 5, 1957. 570 pp. \$8.50.

Introduction to Riemann Surfaces. George Springer. Addison-Wesley, Reading, Mass., 1957. 315 pp. \$9.50. Rocket Power and Space Flight. G.

Rocket Power and Space Flight. G. Harry Stine. Holt, New York, 1957. 182 pp. \$3.75.

Nuclear Power Reactors. James K. Pickard, Ed. Van Nostrand, Princeton, N.J., 1957. 350 pp. \$8.50.

Comparative Physiology of the Nervous Control of Muscular Contraction. Graham Hoyle. Cambridge University Press, London, 1957. 155 pp. \$3.

Les Caractères des Organismes Vivants. Maurice Rose. Presses Universitaires de France, Paris, 1957. 199 pp.

Les Facteurs de la Croissance Cellulaire. Activation et inhibition. J. André Thomas. Masson, Paris, 1956. 425 pp. F. 4000.

Diffusion. Methoden der Messung und Auswertung. W. Jost. Steinkopff, Darmstadt, Germany, 1957. 177 pp. DM. 25.

Prehistoric Men. Robert J. Braidwood. Anthropology, Number 37. Chicago Natural History Series. Chicago Natural History Museum, Chicago, ed. 3, 1957. 187 pp. Paper, \$1.25.

Abbreviated Proceedings of the Oxford Mathematical Conference for Schoolteachers and Industrialists. Held at Trinity College, Oxford, 8–18 Apr. 1957. Oxford University Delegacy for Extra-Mural Studies. Times Publishing Co., Printing House Square, London, E.C.4, 1957. 111 pp. 2s. 6d.

Cosmetics, Science, and Technology. Edward Sagarin, Ed. Interscience, New York, 1957. 1452 pp. \$25.

Economic Backwardness and Economic Growth. Studies in the theory of economic development. Harvey Leibenstein. Wiley, New York; Chapman & Hall, London, 1957. 309 pp. \$6.75.

Behaviour of Metals at Elevated Temperatures. Lectures delivered at the Institution of Metallurgists refresher course, 1956. Published for the Institution of Metallurgists. Iliffe, London; Philosophical Library, New York, 1957. 129 pp. \$6.

Radio Astronomy. International Astronomical Union Symposium No. 4. H. C. Van De Hulst, Ed. Cambridge University Press, New York, 1957. 420 pp. \$9.50.

The Vertebrate Visual System. Its origin, structure, and function and its manifestations in disease with an analysis of its role in the life of animals and in the origin of man. Preceded by a historical review of investigations of the eye, and of the visual pathways and centers of the rain. Stephen Ployak. Heinrich Kluver, Ed. University of Chicago Press, Chicago, 1957. 1408 pp. \$45.

Chemistry of Natural and Synthetic Rubbers. Harry L. Fisher. Reinhold, New York; Chapman & Hall, London, 1957. 215 pp. \$6.50.

The Physical and Chemical Basis of Inheritance. George W. Beadle. Oregon University Press, Eugene, 1957. 47 pp. Paper, \$1.

Rhythmic and Synthetic Processes in Growth. Fifteenth symposium of the Society for the Study of Development and Growth. Dorothea Rudnick, Ed. Princeton University Press, Princeton, N.J., 1957. 224 pp. \$7.50.

The Administrative State. An introduction to bureaucracy. Fritz Morstein Marx. University of Chicago Press, Chicago, 1957. 212 pp. \$4.

Copernicus. The founder of modern astronomy. Angus Armitage. Yoseloff, New York, 1957. 236 pp. \$5.

The Biologic Basis of Cancer Management. Freddy Homburger. Hoeber-Harper, New York, 1957. 372 pp. \$10.

Strength of Materials. F. R. Shanley. McGraw-Hill, New York, 1957. 802 pp. \$8.50.

Antiseptics, Disinfectants, Fungicides, and Chemicals and Physical Sterilization. George F. Reddish, Ed. Lea & Febiger, Philadelphia, ed. 2, 1957. 975 pp. \$15.

Introduction to Biostatistics. Huldah Bancroft. Hoeber-Harper, New York, 1957. 220 pp. \$5.75.

The Handbook of Feedstuffs. Production, formulation, medication. Rudolph Seiden and W. H. Pfander. Springer, New York, 1957. 613 pp. \$8.

Handbuch der Physik. Vol. XLII. Nuclear Reactions III. S. Flugge, Ed. Springer, Berlin, 1957. 633 pp. DM. 135.

Die Mikrophotographie. Kurt Michel. Springer, Vienna, 1957. 772 pp. \$33.30.

The Student-Physician. Robert K. Merton, George G. Reader, Patricia L. Kendall, Harvard University Press (for the Commonwealth Fund), Cambridge, Mass., 1957. 372 pp. \$5.

An Introduction to Probability Theory and Its Applications. vol. I. William Feller. Wiley, New York; Chapman & Hall, London, ed. 2, 1957. 476 pp. \$10.75.

Laboratory Manual of Batch Distillation. F. J. Zuiderweg. Interscience, New York, 1957. 134 pp. \$3.50.

The Fascination of Numbers. W. J. Reichmann. Essential Books, Fair Lawn, N.J., 1957. 176 pp. \$4.

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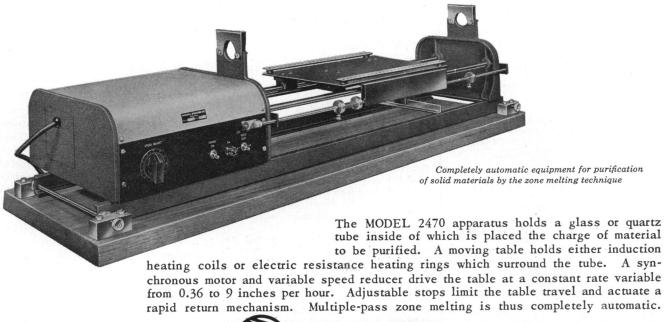
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