

Science and Technology

The History of the Barometer. W. E. Knowles Middleton. Johns Hopkins Press, Baltimore, Md., 1964. xx + 489 pp. Illus. \$10.95.

Although the barometer was one of the six instruments that immeasurably accelerated the development of science in the 17th century, the instrument's history is comprehensively presented for the first time in this excellent volume.

In *The History of the Barometer* the historical and technical evolution of the barometer during the three centuries since its invention is systematically and thoroughly docu-

mented. After a summary of the scientific background, the author provides a careful account of Gaspare Berti's experiment and of the prehistory of the instrument before Torricelli's investigations, which until now have been popularly accepted as the origin of the instrument. For the first time the major scientific figures of the 17th century are placed in proper relationship and a fair appraisal made of the contributions of each to the development of this instrument.

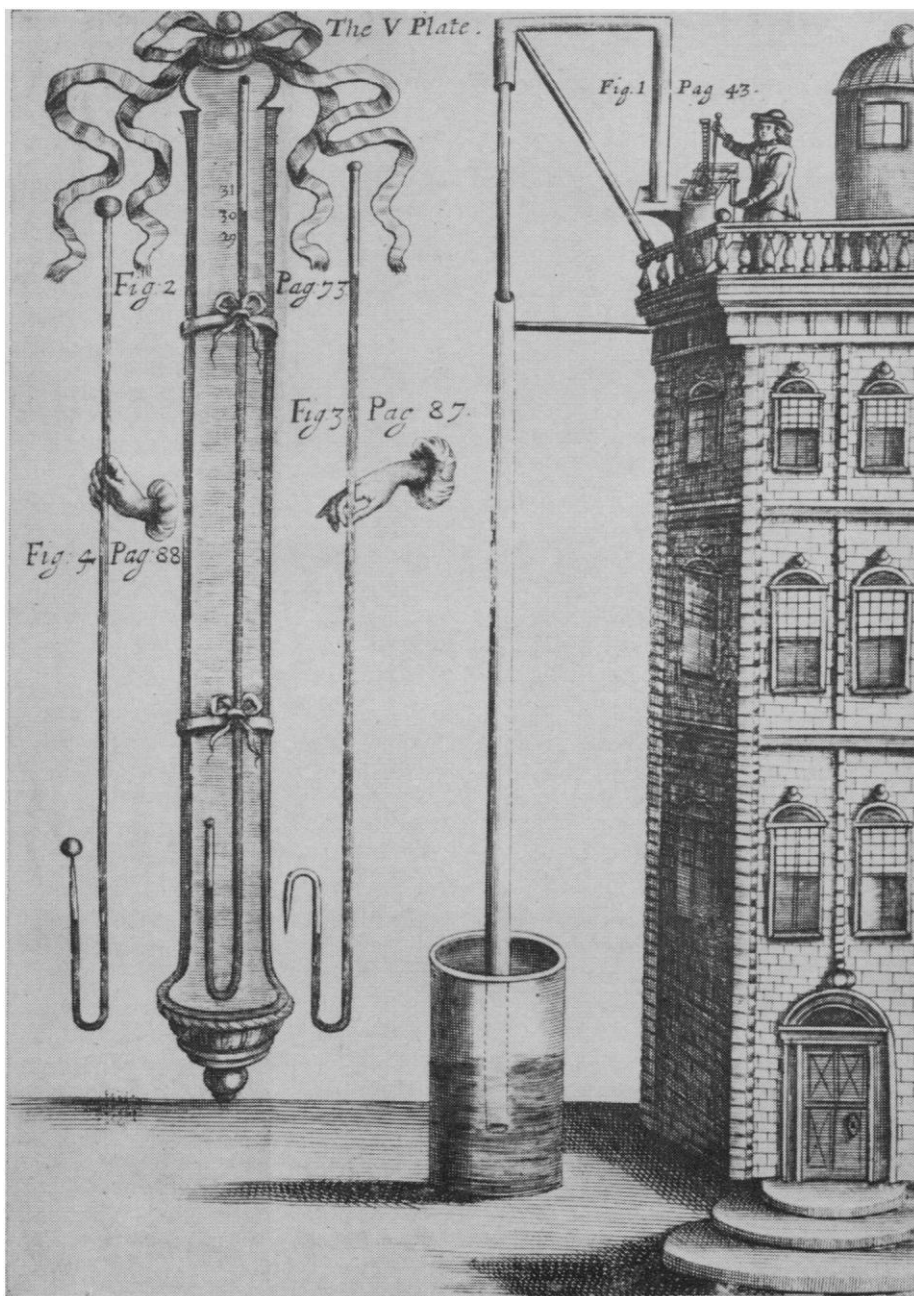
The author notes that he has not attempted to include comprehensive biographical information about the instrument makers who played a role in the barometer's development, inasmuch as his primary concern was the

evolution of the instrument itself, but he has nonetheless furnished extremely valuable new data about many of the makers. For this reason, it is somewhat surprising that he does not mention Matteo Campani's *Nova Experimenta Physico-Mechanica* (Rome, 1666) or his correspondence with Viviani which preceded the book's publication, although the oversight is perhaps not an important one.

Extensive coverage is given to every phase and manifestation of the barometer's evolution to 1960; the chapters on the expansion of the scale and the search for portability are particularly interesting. The more significant of the surviving barometric instruments are listed and described in a 20-page appendix, an extremely useful addition to a most impressive and valuable reference work for the historian of science and of technology alike. The book is clearly written and beautifully presented. It is thoroughly indexed and well illustrated throughout with a wealth of original drawings and photographs, which were carefully selected to clarify the text but which decorate the book as well. Typical of these is the drawing of Robert Boyle's siphon barometer and water barometer (reproduced here), which illustrates the first completely portable barometer that could be considered an instrument rather than an experiment.

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History of Technology

A Hundred Years of Metallurgy. W. H. Dennis. Aldine, Chicago, Ill., 1964. x + 342 pp. Illus. \$8.95.

Dennis has compressed a hundred years of metallurgy into this short volume with considerable success. He covers the history of ore dressing and pyrometallurgy in the introductory chapters and then discusses in detail the developments in iron and steel metallurgy. Although much space is devoted to modern practices, he does not provide a clear picture of the rapid changes that are taking place in the industry as a result of basic oxygen furnaces, vacuum degassing, continuous casting, and high-speed hot strip and cold tandem mills.

The chapter on the major nonferrous metals—copper, aluminum, zinc, lead, nickel, and tin—gives the reader a brief description of present practices as well as a glimpse of the developments leading up to them. The chapter on uranium, titanium, germanium, and cobalt is well done and will interest those who are unfamiliar with these newcomers to the metallurgical scene. Gold, silver, and the platinum group are discussed last, and a brief historical treatment is followed by a review of their recovery, refining, and usage.

The final chapters—one on shaping of metals and the other on metallography—could well have been omitted; they are too brief to be of much value even to those who are unfamiliar with the field of metallurgy. For instance, the history and practice of rolling of metals is outlined in some four pages whereas nearly equal space is given to extrusion. Although the author devotes only ten pages to metallography, he does give an interesting account of the early work of Sorby in England and an account of the interchange of ideas with America, France, and Germany which led to the production of the first iron carbon constitution diagram, by Roberts-Austen, in 1896.

The beginning student of metallurgy should find this book of great interest and a ready source of reference. In addition to an excellent index, each chapter is followed by a short bibliography, and a brief glossary provides definitions of the more unusual metallurgical terms.

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New Books

Advances in Child Development and Behavior. vol. 1. Lewis P. Lipsitt and Charles C. Spiker, Eds. Academic Press, New York, 1963. 401 pp. Illus. \$12. Nine papers: "Responses of infants and children to complex and novel stimulation," by Gordon N. Cantor; "Word associations and children's verbal behavior," by David S. Palermo; "Change in the stature and body weight of North American boys during the last 80 years," by Howard V. Meredith; "Discrimination learning set in children," by Hayne W. Reese; "Learning in the first year of life," by Lewis P. Lipsitt; "Some methodological contributions from a functional analysis of child development," by Sidney W. Bijou and

Donald M. Baer; "The hypothesis of stimulus interaction and an explanation of stimulus interaction and an explanation of stimulus compounding," by Charles C. Spiker; "The development of 'overconstancy' in space perception," by Joachim F. Wohlwill; and "Miniature experiments in the discrimination learning of retardates," by Betty J. House and David Zeaman.

Advances in Psychoanalysis. Contributions to Karen Horney's holistic approach. Harold Kelman, Ed. Norton, New York, 1964. 255 pp. \$5. Nine papers: "On feeling abused" and "The paucity of inner experiences," by Karen Horney; "Character development in young children," by Norman Kelman; "A unitary theory of anxiety," by Harold Kelman; "The body's participation in dilemma and anxiety phenomena," Alexander R. Martin; "Some aspects of sex in neuroses," by Frederick A. Weiss; "Neurotic guilt and health moral judgment," by Muriel Ivimey; "A psychoanalytic understanding of suicide," by E. Kilpatrick; "Karen Horney on psychoanalytic technique," by M. B. Cantor, E. A. Metzger, and R. Slater.

Assimilation in American Life. The role of race, religion, and national origins. Milton M. Gordon. Oxford Univ. Press, New York, 1964. 286 pp. Illus. \$5.25.

Cognition: Theory, Research, Promise. Papers read at the Martin Scheerer memorial meetings on cognitive psychology (Lawrence, Kan.), May 1962. Constance Sheerer, Ed. Harper and Row, New York, 1964. 240 pp. Illus. \$4.

Concepts of Insanity in the United States, 1789-1865. Norman Dain. Rutgers Univ. Press, New Brunswick, N.J., 1964. 320 pp. \$9.

The Encapsulated Man. An interdisciplinary essay on the search for meaning. Joseph R. Royce. Van Nostrand, Princeton, N.J., 1964. 218 pp. Illus. Paper, \$1.95.

Essays on Ego Psychology. Selected problems in psychoanalytic theory. Heinz Hartmann. International Universities Press, New York, 1964. 508 pp. \$10. Twenty papers. The first part consists of 16 chronologically arranged papers written and published between 1939 and 1959; the second contains some papers published earlier "whose primary concern was not with the development of analytic theories, but which still, in one way or another, seem to . . . contribute to it." The four papers in part 2 are translations of papers originally published in German.

Familienbeziehung und Freizeitgewohnheiten jugendlicher Arbeiter. Leopold Rosenmayr. Verlag für Geschichte und Politik, Vienna, Austria, 1963. 450 pp. Illus.

The Field of Consciousness. Aron Gurwitsch. Duquesne Univ. Press, Pittsburgh; Nauwelaerts, Louvain, Belgium, 1964. 441 pp. \$7.95.

Formulaire Technique d'Anthropologie. Les determinations anthropologiques en osteologie exclusivement. Leurs definitions, leurs techniques, leurs resultats. Patrick Braun. Lechevalier, Paris, 1963. 262 pp. Illus. \$4.20.

A Guadalcanal Society. The Kaoka speakers. Ian Hogbin. Holt, Rinehart, and Winston, New York, 1964. 113 pp. Illus. Paper, \$1.50.

Die Homosexualität Beim Mann. Kurt Freund. Hirzel, Leipzig, 1963. 285 pp. Illus. DM. 18.50.

Horizons of Anthropology. Sol Tax, Ed. Aldine, Chicago, 1964. 288 pp. \$5.

Human Behavior. An inventory of scientific findings. Bernard Berelson and Gray A. Steiner. Harcourt, Brace, and World, New York, 1964. 736 pp. Illus. \$11.

Human Fertility and Population Problems. Proceedings of a seminar held under the auspices of the American Academy of Arts and Sciences (Brookline, Mass.) May 1963. Roy O. Greep, Ed. Schenkman, Cambridge, Mass., 1964. 288 pp. Illus. Paper, \$2.65; cloth, \$7.45.

Hunger and Work in a Savage Tribe. A functional study of nutrition among the Southern Bantu. Audrey I. Richards. World, Cleveland, 1964. 254 pp. Paper \$1.75.

Industrial Creativity. The psychology of the inventor. Joseph Rossman. University Books, New Hyde Park, N.Y., ed. 3, 1964. 282 pp. \$7.50.

Interpersonality Synopsis. Donald D. Glad and Virginia B. Glad. Libra, New York, 1964. 188 pp. Illus. \$4.95.

Inventing the Future. Dennis Gabor. Knopf, New York, 1964. 254 pp. \$4.95.

Kapauku Papuan Economy. Leopold Pospisil. Yale Univ., New Haven, Conn., 1963. 502 pp. Illus. Plates. Paper, \$6.50.

The New Group Therapy. O. Hobart Mowrer. Van Nostrand, Princeton, N.J., 1964. 272 pp. Illus. Paper, \$1.95.

Primitive Views of the World. Stanley Diamond, Ed. Columbia Univ. Press, New York, 1964. 239 pp. Paper, \$1.75. A collection of 11 essays reprinted from *Culture in History: Essays in Honor of Paul Radin* [reviewed in *Science* 134, 1411 (1961) by E. A. Hoebel].

Psychiatry on the College Campus. H. G. Whittington. International Universities Press, New York, 1964. 336 pp. Illus. \$7.50.

The Psychoanalytic Study of the Child. vol. 18. Ruth S. Eisler, Anna Freud, Heinz Hartmann, and Marianne Kris, Eds. International Universities Press, New York, 1963. 662 pp. \$10. Twenty-three papers.

The Psychopath: An Essay on the Criminal Mind. William McCord and Joan McCord. Van Nostrand, Princeton, N.J., 1964 (revised and abridged version of *Psychopathy and Delinquency*, 1956). 235 pp. Paper, \$1.75.

Reference Groups. Exploration into conformity and deviation of adolescents. Muzafer Sherif and Carolyn W. Sherif. Harper and Row, New York, 1964. 384 pp. Illus. \$6.

The Roots of Consciousness. David C. McClelland. Van Nostrand, Princeton, N.J., 1964. 225 pp. Illus. Paper, \$1.95.

Social Choice and Individual Values. Kenneth J. Arrow. Wiley, New York, ed. 2, 1963. 136 pp. \$4.50.

Social Structure and Personality. Talcott Parsons. Free Press of Glencoe (Macmillan), New York, 1964. 384 pp. \$8.50. The 12 essays in this collection go back a little more than 10 years; the oldest among them is "The superego and the theory of social systems." Of it Parsons writes "This article seems to form a gen-