

Fig. 1. Peruvian balance beams from the pre-Columbian period.

and the results of his own research combine to provide a sound foundation for this work.

The material is organized chronologically, with the divisions wisely chosen and developed to provide maximum interest for the casual reader and maximum usefulness for the scholar and student. There are two major sections. The first covers the use of scales and weights, the introduction of standards, and the history of various forms of weighing devices designed for specific purposes. The second section presents a detailed history of the manufacture of scales and weights, with a study of the most important groups of the "mastersigns," or marks, of the makers in the major centers of production (see the mastersigns of the weight makers of Antwerp illustrated on the cover of this issue of *Science*).

The history of each of the various materials employed in the construction of scales and weights is well documented with dates and localities of their introduction. The author brings

to light the simultaneous evolution of certain types of scales and weights by peoples separated in time and space—for example, the beam balance with fixed fulcrum, which was invented independently by the Egyptians and Peruvians (see Fig. 1).

Particularly useful are the numerous charts and tables which provide a wide range of supplementary data, such as symbols for Greek, Roman, and Chinese standard weights and measures, special appendices of ancient weight units, and weight standards with gram and kilogram equivalents. Textual descriptions are supplemented with numerous fine illustrations assembled from the major collections throughout the world. There are 14 pages of bibliographic references and a thorough index.

Kisch has packed a vast quantity of carefully considered information into this work. Readers may be somewhat disappointed, however, not to find some account of the role of weighing and its instruments in the technical work of the metallurgist, the chemist,

and the physicist. Conspicuous by their absence are references to the accomplishments of s'Gravesande, Desagulier, Ramsden, Ludlam, and others prior to the introduction of the precision balance. Furthermore, one may regret the author's decision not to present more details on the makers of the early scales and weights. Such data would have provided additional richness for this volume. It may be hoped that their absence here is token of a separate study in the future.

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NEW BOOKS

Biological and Medical Sciences

Drug Presentation and Prescribing. W. R. L. Brown and J. W. Hadgraft. Pergamon, New York, 1965. 126 pp. Illus. Paper, \$2.95. The Commonwealth and International Library.

Histology. Arthur W. Ham. Lippincott, Philadelphia, ed. 5, 1965. 1057 pp. Illus. \$13.50.

Hypnotic Susceptibility. Ernest R. Hilgard. With a chapter by Josephine R. Hilgard. Harcourt, Brace, and World, New York, 1965. 448 pp. Illus. \$9.50.

An Introduction to Plant Biology. Dale C. Braungart and Ross H. Arnett, Jr. Mosby, St. Louis, 1965. 434 pp. Illus. \$8.50.

Lectures on Gas Chromatography 1964: Agricultural and Biological Applications. Based on papers presented at the 1964 Cornell University Pesticide Workshop (Geneva, N.Y.), April 1964, and the 1964 Canisius College Gas Chromatography Institute (Buffalo, N.Y.), March and April 1964. L. R. Mattick and H. A. Szymanski, Eds. Plenum Press, New York, 1965. 264 pp. Illus. \$12.50. Sixteen papers.

L-Forms, Episomes, and Auto-Immune Disease. Phyllis Evelyn Pease. Livingstone, Edinburgh; Williams and Wilkins, Baltimore, 1965. 91 pp. Illus. Paper, \$4.

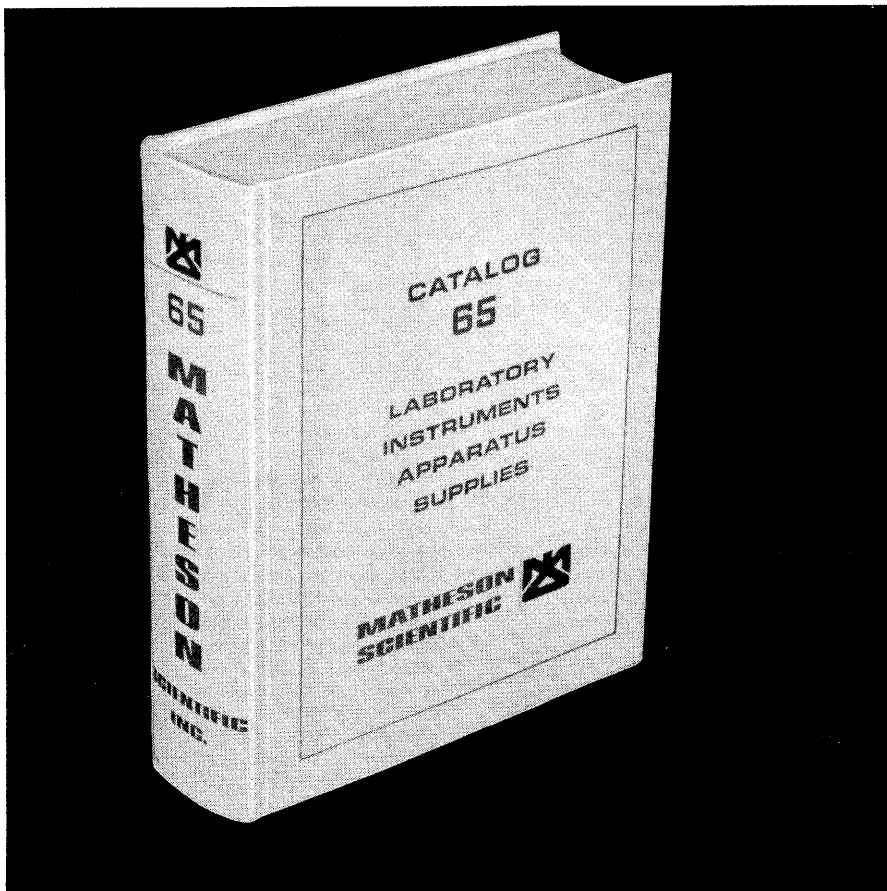
Life in the Laboratory. Donald G. Humphrey, Henry Van Dyke, and David L. Willis. Harcourt, Brace, and World, New York, 1965. 276 pp. Illus. Paper, \$4.50.

Light: Physical and Biological Action. Howard H. Selinger and William D. McElroy. Academic Press, New York, 1965. xii + 417 pp. Illus. \$12. American Institute of Biological Sciences and U.S. Atomic Energy Commission Monograph Series on Radiation Biology; the series is directed by John R. Olive.

Lignin Biochemistry. Walter J. Schubert. Academic Press, New York, 1965. 141 pp. Illus. \$8.

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Neural Networks in the Retina. Floyd Ratliff. Holden-Day, San Francisco, 1965. 379 pp. Illus. \$13.95.

Mammalian Learning and Behavior: A Psychoneurological Theory. David D. Smith. Saunders, Philadelphia, 1965. 184 pp. Illus. \$6.50.

Marine Mammals. Richard J. Harrison and Judith E. King. Hillary House, New York, 1965. 192 pp. Illus. \$3. Hutchinson University Library Series.

The Molecular Biology of Development. James Bonner. Oxford Univ. Press, New York, 1965. 165 pp. Illus. \$3.50.

Molecular Biology of the Gene. J. D. Watson. Benjamin, New York, 1965. 516 pp. Illus. Paper, \$5.95; cloth, \$10. Biology Teaching Monograph Series, edited by Cyrus Levinthal.

Molecules and Life. Robert F. Steiner and Harold Edelhoch. Van Nostrand, Princeton, N.J., 1965. 207 pp. Illus. Paper, \$1.95.

Mountain Sickness. B. Bhattacharjya. Wright, Bristol, England; Williams and Wilkins, Baltimore, 1965. 58 pp. Illus. Paper, \$3.50.

The Parathyroid Glands: Ultrastructures, Secretion, and Function. Pieter J. Gaillard, Roy V. Talmage, and Ann M. Budy, Eds. Univ. of Chicago Press, Chicago, 1965. 365 pp. Illus. \$15. Twenty-three papers presented at a symposium (Noordwijk aan Zee, Netherlands), August 1964; the symposium was sponsored by the State University of Leiden and Rice University, Houston, Texas.

Photosynthesis. Jerome L. Rosenberg. Holt, Rinehart, and Winston, New York, 1965. 127 pp. Illus. Paper, \$1.28; cloth, \$2.50. Holt Library of Science, Series II.

The Physiology of the Insect Central Nervous System. Papers from the 12th International Congress of Entomology (London), 1964. J. E. Treherne and J. W. L. Beament, Eds. Academic Press, New York, 1965. 287 pp. Illus. \$10. Sixteen papers.

The Plant Kingdom. A laboratory manual. Paul C. Lemon and Norman H. Russell. Mosby, St. Louis, ed. 2, 1965. 225 pp. Illus. Paper, \$3.90.

Progress in Protozoology. Ph. Vuysje, Ed. Excerpta Medica Foundation, Amsterdam, Netherlands, 1965. 278 pp. Illus. Paper, \$9. Abstracts of 357 papers read at the Second International Conference on Protozoology (London), July-August 1965.

Progress in the Chemistry of Fats and Other Lipids. vol. 8, pt. 1, Phospholipids and Biomembranes. L. L. M. van Deenen. R. T. Holman, Ed. Pergamon, New York, 1965. 133 pp. Illus. Paper, \$8.50.

Recent Progress in Photobiology. Proceedings of an International Congress (Oxford, England), July 1964. E. J. Bowen, Ed. Academic Press, New York, 1965. 408 pp. Illus. \$12. Thirty-three papers.

Residue Reviews. Residues of pesticides and other foreign chemicals in foods and feeds. vol. 10. Francis A. Gunther, Ed. Springer-Verlag, New York, 1965. 169 pp. Illus. \$5.50. Five papers: "Effects of pesticidal treatments on the chlorophyll

content of plant parts" by J. Bruinsma; "Determination of extractable substances in food packaging materials" by E. A. Garlock and O. E. Paynter; "DDD as a decomposition product of DDT" by D. E. Ott and F. A. Gunther; "Residue analytical limit of detectability" by G. L. Sutherland; and "Herbicides: A compilation of their physical, chemical, and biological properties" by G. W. Bailey and J. L. White.

The Staphylococci: Ecologic Perspectives (*Ann. N.Y. Acad. Sci.* 128, No. 1). Harold E. Whipple, Ed. New York Acad. of Sciences, New York, 1965. 458 pp. Illus. Paper, \$8. Papers presented at a conference held by the Academy in October 1964.

The Tissues of the Body. W. E. LeGros Clark. Oxford Univ. Press, New York, ed. 5, 1965. 430 pp. Illus. \$12.75.

Use of Computers in Biology and Medicine. Robert Steven Ledley. McGraw-Hill, New York, 1965. 989 pp. Illus. \$29.50.

Miscellaneous Publications

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

Acanthodrilidae and Eudrilidae (Oligochaeta) from Ghana (*Bull. Brit. Museum Zool.* 12, No. 8). R. W. Sims. British Museum (Natural History), London, 1965. 29 pp. Illus. Paper, 10s.

Activities Report, 1964. International Union Against Cancer, Geneva, Switzerland, 1965. 62 pp. Paper.

Alimentation des populations africaines au Sud du Sahara (Enquetes Bibliographiques 13). M. P. C. Lefevre. Centre de Documentation Economique et Sociale Africaine, Brussels, 1965. 235 pp. Paper, F.B. 500. Annotated bibliography containing 985 alphabetically arranged (by author) entries.

Anais do XIII Congresso da Sociedade Botânica do Brasil (1962). Instituto de Micologia, Universidade do Recife, Recife, Brazil, 1964. 516 pp. Illus. Paper.

Arachnida (*Zool. Record* 100, Sec. 12, 1963). Compiled by Ernest Brown. Zoological Soc. of London, London, 1965. 111 pp. Paper, \$2.82.

Atlantide Report, No. 8. Scientific results of the Danish Expedition to the coasts of tropical West Africa, 1945-1946. Jorgen Knudsen and Torben Wolff. Danish Science Press, Copenhagen, 1965. 255 pp. Illus. Paper, \$9.

Autoimmunity—Experimental and Clinical Aspects, pt. 2 (*Ann. N.Y. Acad. Sci.* 124). Harold E. Whipple, Ed. New York Acad. of Sciences, New York, 1965. 478 pp. Illus. Paper. Forty-one papers.

The Brachyuran Decapod Crustaceans of Clipperton Island (*Proc.* 33, No. 1). John S. Garth. California Acad. of Sciences, San Francisco, 1965. 46 pp. Illus. Paper.

Bryozoa, Polyzoa (*Zool. Record* 99, Sec. 8, 1962). Compiled by Anna B. Hastings. Zoological Soc. of London, London, 1965. 16 pp. Paper, \$1.80.

The Cichlid Fishes of Lake Nabugabo, Uganda (*Bull. Brit. Museum Zool.* 12, No. 9). P. H. Greenwood. British Mu-

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Científicos de Colombia. Centro de Cooperacion Cientifica para America Latina and Organizacion de los Estados Americanos, Montevideo, ed. 2, 1965. 384 pp. Paper. Combines and brings up-to-date volumes *Colombia I* (1949) and *Colombia II* (1956).

Conference on Aircraft Operating Problems (Langley Research Center), May 1965. Natl. Aeronautics and Space Administration, Washington, D.C., 1965. 333 pp. Illus. Paper, \$3. Thirty-four papers.

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The Culicine Mosquitos of the Indomalayan Area, pt. 6, Genus *Aedes* Meigen, subgenus *Stegomyia* Theobald (Groups A, B, and D). P. F. Mattingly. British Museum (Natural History), London, 1965. 67 pp. Illus. Paper, £1 4s.

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Diptera From Nepal: Bibionidae (by D. Elmo Hardy); **Agromyzidae** (by K. A. Spencer) [*Bull. Brit. Museum Entomol.* 16, No. 1] British Museum (Natural History), London, 1965. 31 pp. Illus. Paper, 15s.

Farm Pests: An Aid to Their Recognition. T. E. T. Trought. Blackwell, Oxford, England; Davis, Philadelphia, 1965. 40 pp. Illus. \$2.50.

Fossil Ginkgoales from the Ticó Flora, Santa Cruz Province, Argentina (*Bull. Brit. Museum Geol.* 10, No. 5). Sergio Archangelsky. British Museum (Natural History), London, 1965. 19 pp. Illus. Paper, 28s.

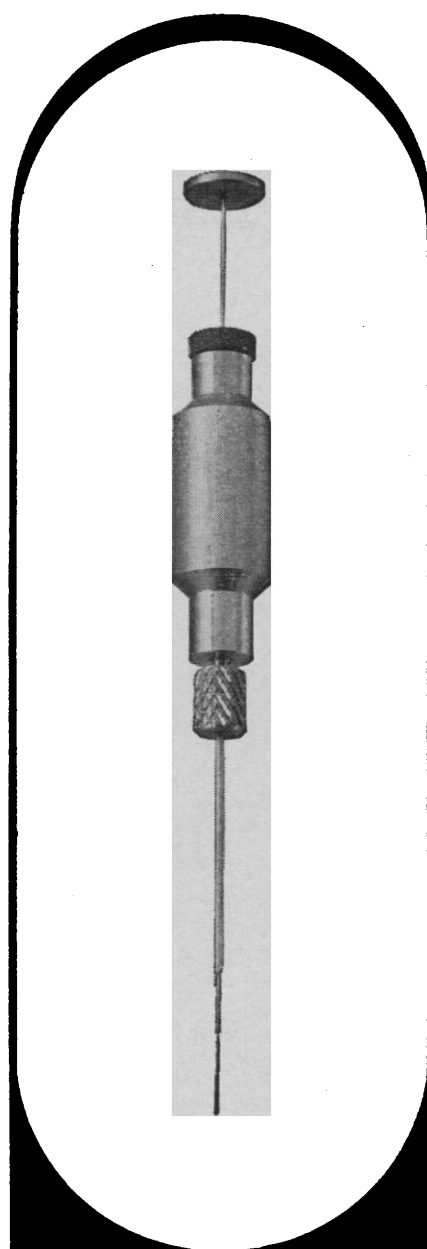
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***Geolabis wolffi*, a New Fossil Insectivore From the Late Oligocene of South Dakota** (*Los Angeles County Museum Contrib. Sci.*, No. 88). J. R. MacDonald. Los Angeles County Museum, Los Angeles, Calif., 1965. 6 pp. Illus. Paper.

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