

Books

Explorer of the Universe: A Biography of George Ellery Hale

by Helen Wright
E. P. Dutton and Co.\$10.00

Reviewed by Allan Sandage, staff
member, Mount Wilson and
Palomar Observatories.

"George Ellery Hale probably did more than any other one man to awaken interest and find support for a sound and effective development of science in this country." These words by Dr. I. S. Bowen, former director of the Mount Wilson and Palomar Observatories, introduce Helen Wright's outstanding biography of this most remarkable man.

Hale was born in 1868 and died at the age of 70 in 1938. His influence has been so pronounced that astronomy as we know it today would not exist, nor would the climate of scientific research in this country be the same, if Hale had not lived. Four different times in his career Hale conceived, organized, secured funding, and directed the construction of the largest telescope in the world—the Yerkes 40-inch refractor in 1897, the Mount Wilson 60-inch reflector in 1908, the 100-inch reflector in 1917, and the 200-inch reflector beginning in 1929. Hale virtually created astrophysics, as practiced in this country, and left a legacy of instruments which are still among the most powerful in the world.

Helen Wright has done a superb job of tracing Hale's development not only of new and powerful instruments and of his important discoveries of sunspot magnetic fields and the law of reversing polarities, but also of the embryonic state of American science in the early days of this century. Of particular interest to astronomers is the description of the early days at Yerkes and Mount Wilson and of the fervor of work with the unique and powerful new telescopes. The difficulties of working on an isolated mountain site are described with authority. The excitement of this great adventure, with the consequent flood of new astronomical results, comes through with clarity. There is a nostalgic quality to these chapters, and many astronomers of this present generation will wish that they had been there.

Yet, for all his influence on astronomy, Hale's stake was broader. His unceasing activity in the organization of scientific and intellectual endeavors was phenomenal. He played a major role in the formation of Caltech—persuading first Scherer and then Millikan

to become its presidents. By his great personal charm and strength of logic, Hale then persuaded other prominent men, such as Alfred Noyes and T. H. Morgan, to join the faculty.

Hale founded the National Research Council, and was instrumental in obtaining the building for the National Academy of Sciences. He had strong ideas of international cooperation and was heavily involved in the establishment of the International Solar Union which grew into the International Astronomical Union. He served on numerous international committees to bring worldwide science closer together.

Nearer to home Hale conceived a master plan for the coordinated development of Pasadena. This resulted in the unified civic buildings centered about the auditorium, the city hall, and library. And, with Hale's persuasion, the nearby Huntington Library was founded as a great research library in literature and history.

Helen Wright describes all this and much more, giving for the first time an authoritative biography of one of the most influential men of science this country has produced. The book will bring to contemporary scientists and historians the story of this unique astronomer whose life is of such special interest to the Caltech community.

The Life of the Mind in America from the Revolution to the Civil War

by Perry Miller
Harcourt, Brace and World\$7.50

Reviewed by Daniel J. Kevles, assistant
professor of history.

For this book Perry Miller was awarded, posthumously, the 1966 Pulitzer Prize in history. Written in graceful and compelling prose, this work is distinguished by its penetration to the roots of American thought in the early years of our nationhood. It bears the marks of Miller's earlier work—the command of a wide-ranging literature, the imagination and insight, the eloquence of presentation—that made him perhaps the most respected historian of American ideas of his generation.

Miller's untimely death in 1963 occurred in the midst of the writing, so that the book is only a fragment of his original intention. But his treatment of the American mind was designed as a mosaic, and the pieces that survive are no less interesting as fragments. Religious evangelism, the legal mind—these are the wholly completed portions of

the over-all design. Miller never completed his discussion of the American attitude towards science, theoretical and applied, but what he did write is illuminating and provocative.

Running through the design of the work, binding it together, is the motif of interpretation: the theme is nationalism. For all the while that Americans thrust westward across the Alleghenies, streamed into the Ohio Valley and out onto the plains, all the while that they united East to West with iron rails and bonds of commerce, they sensed the centrifugal forces of sectional antagonism, of social and economic tension. In response, often subconsciously, they sought to develop a cast of mind unique to America, superseding the forces of division. *The Life of the Mind in America* eloquently describes the nationalist impulse that colored the thought of this country as it struggled for genuine nationhood.

Alumni Books

Adventures in Living Plants

by Edwin B. Kurtz, Jr., PhD '52, and
Chris Allen
University of Arizona Press\$4.95

Edwin Kurtz, professor of botany at the University of Arizona, and Chris Allen, teacher in the Tucson elementary schools, designed this book for use in teaching botany at the elementary level. It is amply illustrated and has pages that serve as "notebooks" for experiments the reader can perform. Subjects include cells, photosynthesis, respiration, nutrition, circulation, growth, reproduction, heredity, plant kingdom, and ecology.

Introduction to Matrix Methods of Structural Analysis

by Harold C. Martin, PhD '50
McGraw-Hill\$11.50

A textbook for students or structural engineers. Dr. Martin is now professor of aeronautics and astronautics at the University of Washington and consultant to the aerospace group of the Boeing Co. in Seattle.

Flight

by H. Guyford Stever, PhD '41, James
J. Haggerty, and the Editors of Life
Time-Life Books\$3.95

This picture-and-text history of
continued on page 24

Books . . . continued

manned flight is the 12th volume in the Life Science Library. Dr. Stever, now president of the Carnegie Institute of Technology, was Chief Scientist for the Air Force in 1955-56 and later served as consultant for the National Aeronautics and Space Administration and the Congressional Committee on Science and Astronautics.

The Molecules of Nature: A Survey of the Biosynthesis and Chemistry of Natural Products

by James B. Hendrickson '50
W. A. Benjamin\$3.95

A short (189 pages) monograph intended as a supplement to a first-year text in organic chemistry. "Natural

products," in this case, are compounds primarily of chemical interest rather than biological significance. Dr. Hendrickson is associate professor of chemistry at Brandeis University.

Faculty Books

The Analysis of Stress and Deformation

by George W. Housner and
Thad Vreeland Jr.
Macmillan\$11.95

A text prepared for a Caltech course in the mechanics of deformable bodies by Dr. Housner, professor of civil engineering and applied mechanics, and Dr. Vreeland, associate professor of materials science, for advanced undergraduate or first-year graduate students.

Elements of Abstract Algebra

by Richard A. Dean
John Wiley & Sons\$7.95

A text which is the outgrowth of the introductory algebra course given at Caltech by Dr. Dean, professor of mathematics, covering the "topics and techniques of abstract algebra that are finding ever wider applications in mathematics and the applied sciences."

Basic Chemical Thermodynamics

by Jurg Waser
W. A. Benjamin\$8.00 cloth
\$3.95 paper

A text derived from the notes prepared by Dr. Waser, Caltech professor of chemistry, for use in his freshman chemistry course.

Publication Press

OF PASADENA

"Quality Printing When Promised"

455 EL DORADO

SYcamore 3-9181

PLACEMENT ASSISTANCE TO CALTECH ALUMNI

The Placement Service may be of assistance to you in one of the following ways:

- (1) Help you when you become unemployed or need to change employment.
- (2) Inform you of possible opportunities from time to time.

This service is provided to Alumni by the Institute. A fee or charge is not involved. If you wish to avail yourself of this service, fill in and mail the following form:

To: Caltech Alumni Placement Service
California Institute of Technology
Pasadena, California 91109

Please send me: (Check one)

- An Application for Placement Assistance
- A form indicating a desire to keep watch of opportunities although I am not contemplating a change.

Name Degree (s)

Address Year (s)

ALUMNI ASSOCIATION OFFICERS AND DIRECTORS

PRESIDENT Richard P. Schuster, Jr., '46	SECRETARY Donald S. Clark, '29
VICE PRESIDENT Sidney K. Gally, '41	TREASURER John R. Fee, '51
James L. Adams, '55	John T. McGraw, '38
Theodore C. Combs, '27	Paul D. Saltman, '49
Robert W. Lynam, '54	Frederic T. Selleck, '49
John L. Mason, '47	Patrick J. Fazio, '53

ALUMNI CHAPTER OFFICERS

NEW YORK CHAPTER

President Bruno H. Pilorz, '44
75 Echo Lane, Larchmont, N.Y.

Vice-President Willis A. Bussard, '44
Appleby Drive, RFD 1, Box 78B, Bedford, N.Y. 10506

Secretary-Treasurer Harry J. Moore, Jr., '48
Old Orchard Road, Armonk, N.Y. 10504

BOSTON CHAPTER

President Francis Morse, '40
16 Reservoir Rd., Wayland, Mass

Vice-President Theodore G. Johnson, '57
Blueberry Hill Rd., Sudbury, Mass.

Secretary-Treasurer Thomas C. Stockebrand, '53
55 Summer St., West Acton, Mass. 01780

WASHINGTON, D.C. CHAPTER

Chairman Willard M. Hanger, '43
4720 Sedgwick St., N.W., Washington, D.C.

CHICAGO CHAPTER

President Laurence H. Nobles, '49
Dept. of Geology, Northwestern Univ., Evanston, Ill.

Vice-President Philip E. Smith, '39
Eastman Kodak Co., 1712 Prairie Ave., Chicago, Ill.

SAN FRANCISCO CHAPTER

President Edwin P. Schlinger, '52
G. E. Vallecitos Atomic Lab., Pleascnton, Calif.

Vice-President Dallas L. Peck, '51
U.S. Geological Survey, Menlo Park, Calif.

Secretary-Treasurer Thomas G. Taussig, '55
Lawrence Radiation Lab., Univ. of Calif., Berkeley, Calif.

Meetings: 15th Floor, Engineers' Club, 206 Sansome St.,
San Francisco
Informal luncheons every Thursday at 11:45 A.M.
Contact Mr. Farrar, EX 9-5277, on Thursday morning
for reservations.

SACRAMENTO CHAPTER

President William D. Pyle, '49
3920 Dunster Way, Sacramento, Calif. 95825

Vice-President Paul J. Jurach, '46
2824 Aurora Way, Sacramento, Calif. 95821

Secretary-Treasurer Kenneth M. Fenwick, '28
2954 26th Street, Sacramento, Calif. 95818

Meetings: University Club, 1319 "K" St.
Luncheon first Friday of each month at noon.
Visiting alumni cordially invited—no reservations.