

## Letters

EDITOR:

On page 12 of the June 1969 issue of *Engineering and Science* ("Nuclear Astrophysics—Today and Yesterday") I am identified as number 61 in the Caltech math and physics group of 1926. I am pleased that you are honoring my prodigious talents: I was 11 years old in 1926!

For the record, the picture is of my brother, Hervey C. Hicks, PhD '28.

BRUCE L. HICKS, PhD '39

## Faculty Books

ATLAS OF SOLAR MAGNETIC FIELDS  
By Robert Howard, Vaclav Bumba,  
and Sara F. Smith

*The Carnegie Institution of  
Washington* . . . . . \$12.50

The study of magnetic fields in the sun and stars has been one of the prime interests of the Mount Wilson and Palomar Observatories since Hale's discovery of sunspot magnetic fields 60 years ago. In recent years astronomers have become more and more aware of the importance of magnetic fields in channeling the otherwise unorganized energy of the stars into highly energetic and interesting phenomena.

The *Atlas of Solar Magnetic Fields* presents in an organized way the results of seven years of observation with the Babcock magnetograph on Mount Wilson. Although many other magnetographs have been built over the years, the Mount Wilson magnetograph under the direction of Robert Howard has been the only one in regular service recording the grand pattern of the evolution of magnetic fields on the surface of the sun. In addition to the intense fields in the sunspots, this instrument measures the widespread weak magnetic fields on the solar surface, which have a stronger effect on the interplanetary medium. The results of this work are presented here in a series of colored synoptic charts showing the appearance of the sun for a single rotation. Because only half the sun is visible at once and because there are many cloudy days, the observations have been laboriously filtered and reassembled to produce the synoptic charts. A set of charts showing sunspots and plages for comparison is included.

When Bumba and Howard first assembled these maps, they immediately discovered large regions of uniform magnetic polarity growing out of the remnants of large sunspot groups and

spread out by the sun's differential rotation. Wilcox at Berkeley was able to find a strong connection between these regions and the magnetic structure of the solar wind and the interplanetary magnetic field. Thus we now have a unified picture for the magnetic field structure between the sun and the earth.

Although undoubtedly many new complexities will be discovered, the data are now available in this atlas for anyone to work with. The authors are to be congratulated on this great work and on making the data available.

—Reviewed by Harold Zirin, professor of astrophysics and staff member, Mt. Wilson and Palomar Observatories.

CHEMICAL DYNAMICS

By Joseph B. Dence '69, Harry B. Gray, George B. Gray, George S. Hammond  
W. A. Benjamin, Inc. . . . . \$2.95

Designed for use by college chemistry teachers, this small book reflects the belief of the authors that the study of chemical dynamics should be introduced at an early level. It is suggested as a conclusion to the introductory chemistry course for freshmen to balance the subject matter. Dence is now assistant professor of chemistry at Florida State University in Tallahassee; Gray is professor of chemistry at Caltech; Hammond is Arthur Amos Noyes professor of chemistry and chairman of the division of chemistry and chemical engineering at Caltech.

ADVANCES IN PHOTOCHEMISTRY  
VOLUME 5

Edited by W. Albert Noyes, Jr., George S. Hammond, and J. N. Pitts, Jr.  
*Interscience* . . . . . \$17.00

This volume contains four separate papers written by experts and pioneers in the field of photochemistry, a field that has received increased attention over the last 25 years. Each addition to this series of books contributes stimulating ideas reflecting the changing frontiers of photochemistry. Noyes is a chemist at the University of Texas; Pitts is a chemist at the University of California, Riverside.

SEVEN COMEDIES BY MARIVAUX

Selected by Oscar Mandel  
English versions by Oscar and Adrienne S. Mandel  
*Cornell University Press* . . . . . \$10.00

The Mandels' translations of this 18th-century playwright's work succeed in capturing the spirit that has kept his plays alive for two centuries. Included are a biographical and critical introduction to the man and his work, a bibliography, and a record of first performances of all the plays. Oscar Mandel is professor of English at Caltech.

ORGANIC SYNTHESIS

By Robert E. Ireland  
*Prentice-Hall, Inc.* . . . . . \$6.95

This is one of the few systematic treatments of organic synthesis available at the undergraduate level. Ireland attempts to teach by example, and the principles presented are illustrated through discussion of appropriate recorded syntheses. This volume is included in the publisher's Foundations of Modern Organic Chemistry Series. Ireland is professor of organic chemistry at Caltech.

SOIL MECHANICS AND ENGINEERING

By Ronald F. Scott and Jack J. Schoustra  
*McGraw-Hill* . . . . . \$8.95

This short book was designed to fill the need for a text for practicing civil engineers, architects, and technicians who must deal with soil engineering problems. The format offers a systematic development of theoretical knowledge followed by practical applications. Scott is professor of civil engineering at Caltech; Schoustra is chief engineer, Converse Foundation Engineers, Pasadena.

TWENTIETH CENTURY INTERPRETATIONS  
OF THE TEMPEST

Edited by Hallett Smith  
*Prentice-Hall, Inc.* . . . . . \$4.95

This collection of critical essays analyzes the influences, style, genre, structural elements, artistic influences, and historical background of Shakespeare's noted play. The interpretations range from the most allegorical to the most practical and theatrical and are evidence of the continuing diversity among scholars as to what the play means. Smith is professor of English and chairman of the division of humanities and social sciences at Caltech.

SOUTHERN AFRICA AND THE UNITED  
STATES

Edited by William A. Hance, with Leo Kuper, Vernon McKay, and Edwin S. Munger  
*Columbia University Press* . . . . . \$6.50

Four authorities on Africa present here their assessments of the factors that bear upon U.S. relations with southern Africa. Despite the complex problems they uncover, the authors are agreed that the United States should stand by the principles supporting human rights and racial equality. Hance is professor of geography and chairman of the department of geography at Columbia University; Kuper is professor of sociology at UCLA; McKay is professor of African studies at the school of advanced international studies of The Johns Hopkins University; Munger is professor of geography at Caltech.