Books — by, about, or of interest to Caltech people

STATES OF MATTER

by David L. Goodstein

Prentice-Hall, Inc. $24.95

David L. Goodstein, professor of physics and applied physics at Caltech, has written a textbook for that rarity in a college curriculum — an advanced survey course. Developing the material through three years of teaching first-year graduate students in applied physics, Goodstein first tries to bring all participants up to the same level in thermodynamics and statistical mechanics and then to help them come to an understanding of the essential nature of the basic states — gases, solids, and liquids. These chapters are followed by discussions of some special states — superfluidity, superconductivity, and magnetism — and finally of phase transitions.

The problems at the ends of the chapters have been consumer-tested by use either as homework or examination problems in the course. The annotated bibliography at the end of each chapter is designed to list all the material Goodstein consulted in preparing the lectures on which this book is based as well as to guide any student who wants to read further.

WATCHING THE WILD APES: The Primate Studies of Goodall, Fossey, and Galdikas

by Bettyann Kevles

E. P. Dutton.....$8.95

This interesting and informative book is ostensibly written for children between the ages of 10 and 14, but it makes for very satisfying adult reading too. It reveals, through the observant eyes of three women scientists, the behavioral patterns of those three endangered primate species — the chimpanzees, the gorillas, and the orangutans. Equally interesting is what it reveals about the women—Jane Goodall, Dian Fossey, and Biruté Galdikas — who have based their lives and their laboratories in the equatorial rain forests of Africa and Borneo.

These three women have in common not only their research interest in primate ethology, but having been sponsored by the late L.S.B. Leakey, whose concept it was to set up the projects and to recruit women to head them because he believed that women would be able to establish rapport with wild animals more easily than men.

Bettyann Kevles was introduced to studies of the great apes when she attended a series of lectures in Pasadena sponsored by the Leakey Foundation. Among the speakers were Jane Goodall and Dian Fossey, and after she met Biruté Galdikas, she realized that there was an exciting story to be told about all their work. Mrs. Kevles has taught history and is the wife of a Caltech associate professor of history, Dan Kevles.

RUSSELL W. PORTER
Arctic Explorer, Artist, Telescope Maker

by Berton C. Willard

The Bond Wheelwright Company $12.50

From 1929 until his death in 1949, Caltech claimed Russell Porter's time and considerable talents. But in 1929 Porter was 58 years old and had already had a fascinating career in at least three fields — Arctic exploration, drawing and painting, and the building of telescopes.

In the fall of 1892, at the age of 20, Porter attended a lecture on arctic exploration by Robert E. Peary and was instantly infected with Arctic fever. From then, until 1905, Porter went on nine expeditions to the Arctic, as artist, astronomer, topographer, surveyor, and collector for natural history.

For many years Porter earned a rather precarious living as surveyor, builder, farmer, and, eventually, mechanical and optical tinkerer. He also designed and built his own observatory and telescope as a hobby (and taught many others to do it too), and he published articles on the subject that attracted the attention of distinguished scientists, including George Ellery Hale.

In 1929, at Hale's invitation, Porter became a member of the team that created and erected the 200-inch Hale Telescope on Palomar Mountain. At Caltech his title was Associate in Optics and Instrument Design, and his work included making preliminary designs for the three campus buildings needed to work on the 200-inch telescope — the machine shop, the astrophysical laboratory, and the optical shop. He developed a "cutaway" drawing technique — involving intricate mechanical detail — that made it possible to visualize the Hale project with extraordinary precision. Those drawings were works of art, and many of them can still be seen at Caltech.

Surprisingly, this is the first book-length biography of Russell Porter. Berton Willard's book grew out of a desire to share the many stories about Porter that he had grown up with. He has also had many of the same kinds of experiences. Willard is an optical engineer, a member of the Springfield Telescope Makers (founded by Porter in 1920), and he has made an expedition to Baffin Island and Greenland.

SEX AMERICAN STYLE

by Nasá Varvatsis

Ashley Books, Inc. $7.95

Because Athanassios D. Varvatsis got his MS from Caltech in electrical engineering (1965) and his PhD in 1968, there is a temptation to say that this book does not seem to be related to his professional interests. However, even a cursory reading reveals that, though Nasa Varvatsis was educated as an electrical engineer, he is a lifelong student of women. Born and brought up in Greece, Varvatsis came to the United States as a young graduate student, and

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his book is the result of the cultural shock he experienced here, trying to cope with the complicated American female after years of carefree sex in his native Greece. Part true confession, part advice to the lovelorn, *Sex American Style* is by turns exasperating, perceptive, ingenuous, and ingenious.

WIND-CATCHERS
American Windmills of Yesterday and Tomorrow
by Volta Torrey
The Stephen Greene Press.....$12.95

The meat of Torrey's book is the story of past windmill progress in America and its projection into the future of windmills as an energy source. Torrey, who feels that "the windmills built thus far may be mere points of reference from which much better ways of 'mining' the atmosphere for energy will soon be discovered," credits Caltech's Ernest E. Sechler and Homer J. Stewart with "grasping such technological nettles" by setting up a course that includes material on windmills (Ae 107, Case Studies in Engineering).

Torrey describes dozens of American windmills, giving details of their design, specifications, and capabilities, and he illustrates most of them with photographs and drawings. Whatever the future of the windmill as an answer to the energy problem, *Wind-Catchers* should dispel the image of the device as merely a picturesque part of the Dutch landscape or a target for Don Quixote.

Torrey has been a newspaper reporter, magazine writer, and editor of *Popular Science*. For the last 20 years he has concentrated on science writing.

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS
McGraw-Hill Book Company..... $39.50

Containing almost 100,000 definitions, this dictionary is a major compendium of the vocabulary of science and technology. Since experts in the various fields undoubtedly selected the terms to be included, and wrote or reviewed the definitions, the book can be approached with some confidence by the amateur. Amateur is, of course, a term that applies to all of us in at least some of the 100 fields into which these definitions are divided.

For nonscientifically trained amateurs, in addition to the definitions themselves the reference material in the Appendix — lists of symbols, abbreviations, and conversion tables, for example — is particularly useful. So is the cross-referencing of official abbreviations both at the end of the definitions and alphabetically in the main listing.

Unfortunately, as in most scientific dictionaries, pronunciation is not given. The editors say that this was for reasons of economy, but it is an economy that is costly to the very people who could find the dictionary most useful. It leaves students, secretaries, lab workers, and even some editors and writers dependent on learning how to pronounce many words only by hearing them from others — who may or may not say (not to mention spell) them correctly. "Lipid" or "spectroscopy" may be no cause for panic, but how about "Aspidorhynchidae" or "zygnemataceae"?

Letters

A Few Last Words

San Diego

Talking about Goldwynisms, particularly "the atom bomb — that's dynamite!" (John H. Knowles, "Clarity of Thought and Higher Education," *E&S*, October-November 1976), Herman Wouk, of all people, was guilty of this Goldwynism in his talk at CIT on March 6, 1973. Wouk referred to atomic explosive as "this horrible dynamite" ("Science — at the Leading Edge of Hope," *E&S*, March-April 1973).

NAOMI KASHIWABARA, BS'49

Beverly Hills

Dear Dr. Knowles:

I am reading with great satisfaction the report of the address you gave on Caltech's 82nd Commencement last June, (*E&S*, October-November) and regret that I did not have the opportunity to collaborate with you in its preparation to the extent of testing your interest in a word that I have coined, and which might have been used by you to bring your address to a conclusion.

I conceived the word as descriptive of the final stage of every possible course of events or program or period of time, or, for that matter, culmination of anything under the sun.

One component of the word had already reached an impressive level of connotation in the form "*finalize*," but it needed a suffix to obviate such odious expressions as "like I mean" and "like I mean, finalize, ya know."

How much simpler and more "meaningful" to say

FINALIZEWISE!

Now I shall set about reading the rest of your address.

RODD KELSEY

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