a national laboratory operates.

In April 1998, I began a one-year assignment as a senior policy analyst at the White House Office of Science and Technology Policy (OSTP) Technology Division, on leave from Sandia National Laboratories. The Technology Division, under the direction of Duncan Moore, the Associate Director for Technology, helps to shape federal policies for harnessing technology to serve national goals and to foster a strong U.S. economy. In this position, I serve many functions which include providing advice in the analysis, development, and implementation of Presidential S&T policy; assisting in identifying policy issues and problems requiring the Technology Division's attention; suggesting the outline, scope, schedule, and appropriate staffing for studies; and assisting in coordinating the work of the Technology Division with that of OSTP's other divisions. I also represent OSTP on a wide range of government and private sector forums.

Some of the issues for which I am responsible include transportation research and a Partnership for a New Generation of Vehicles initiative; biotechnology; marine technology; environmental industrial initiatives; and eldercare technology to improve the lives of older Americans. I also serve as the OSTP point of contact for a few Technology Subcommittees of the National Science and Technology Council—an interagency arm of OSTP—including one that focuses on materials technologies.

Working in the Executive Office of the President environment is an intense and exhilarating experience. In this job, I work with creative thinkers within the White House Agencies and help identify critical technological initiatives of national interest that need to be considered by President Clinton and Vice President Gore.

As a chemistry major with a business option at the University of Richmond (UR), I never would have predicted that my career would follow such a path. Two of my undergraduate professors played an instrumental role in carving out my graduate career and introducing me to materials science and engineering.

My experience at a liberal arts college and as a head resident (resident hall manager and counselor) at UR gave me the confidence to pursue a new path. Being a head resident helped me to hone my leadership skills, while the liberal arts environment provided me with ways to look at issues from a broad base and with the creativity to step out of the academic box. I saw that I could use my doctorate in materials science in one of two ways: technically as a research scientist, or as a process whereby I could use my problem-solving skills to dissect, understand, and solve a problem. I have chosen to follow the latter.

Choosing this career path has been very stimulating for me and will provide me with skills that do not constrain me to one type of work. Someday I may parlay my skills into private industry to forecast future technical market sectors for high-tech industry. After that, anything is possible. Who knows, maybe someday I will run for office. □

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Precipitation Hardening, *2d ed.*

J.W. Martin
(Butterworth-Heinemann, Oxford, 1998)
xiv + 219 pages, $74.95
ISBN 0-7506-3885-0

The author, John Martin, is emeritus reader in physical metallurgy at Oxford University, and one of the leading physical metallurgists in Britain. Just 30 years ago, he published an iconoclastic small textbook with Pergamon Press—the first edition of the work under review here. The unusual feature about it was that two-thirds of the book was devoted to reprints of 15 classical papers on aspects of precipitation hardening—complete or in the form of excerpts. That first edition, commended in a foreword by no less a metallurgist than Hume-Rothery himself, was to be the first of a series of undergraduate texts using this format, but so far as I know it remained the only member of its series (Hume-Rothery died about the time the first edition appeared). At the time, I reviewed the book enthusiastically since I had made some experiments in using classical texts as a feature of education in materials science and this book (as indeed Hume-Rothery pointed out in his foreword) could be used to train the critical and historical skills of students.

The first edition has long since been out of print, and therefore this new, scrupulously updated edition is to be welcomed. Although it has slightly fewer pages than its predecessor, it is actually slightly longer because the page size has been increased. The extracts from various classical papers now make up only 20% of the total length, and they now feature as appendices to the relevant chapters. One such extract (actually a full reprint) is a recent (1996) memoir by André Guinier (co-discoverer of GP zones) of how his 1937 breakthrough happened. (He never met the co-discoverer, the Scot G.D. Preston, whose own account is also reprinted here.) Classic extracts include a translation of Alfred Wilm's original paper of 1911, in which the mystified engineer reports on the spontaneous hardening of his aluminum alloy over a weekend, and a notable American paper by Z. Jeffries and R.S. Archer (1921) on the "slip interference theory of the hardening of metals." I was sorry to see that one of David Turnbull's deceptively simple papers on the effects of quenching on the resistivity of aluminum-copper alloys, included in the first edition, has been taken out; this is one of my favorite papers in all of physical metallurgy! However, instead we have a fine paper "on the yield stress of aged Ni-Al alloys" by R.G. Davies and N.S. Stoloff (1965). Both these authors are still happily active in research. A short extract from Egon Orowan's original (1948) theory of dislocation bowing and the bypassing of dispersed particles is also included.

The book offers a marvelously clear and economical exposition of the microstructure and mechanics (including fracture) of age-hardened alloys, and while most of the references, as might be expected from a mature topic, are fairly old, some recent ones cover such topics as small-angle x-ray and neutron scattering and the properties of Al-Li alloys, both relatively new topics.

The book can be unreservedly recommended to those materials science professors who are not yet ashamed of including aspects of physical metallurgy in their teaching schedules. The only pity is that Hume-Rothery's principle of texts with selected extracts could not be extended to other topics in materials science.

Reviewer: *Robert W. Cahn is a physical metallurgist turned materials scientist, currently attached in nominal retirement to Cambridge University. He has researched on intermetallics and many other metallurgical themes, has edited a number of journals and book series devoted to materials science, and has striven over the years to popularize materials science in the pages of* Nature. *He is a member of the Editorial Board of* MRS Bulletin *and a member of the publication's Book Review Board.*

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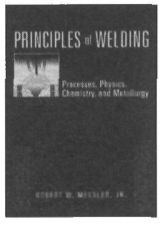

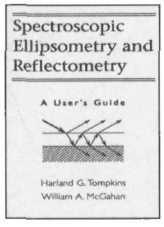

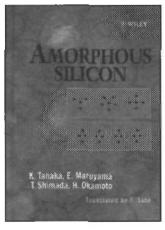

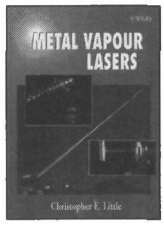

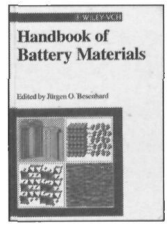

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