Book Reviews

The History and Influence of Technology

Hughes, Thomas P. (1989). ***American genesis: A century of invention and technological enthusiasm, 1870 - 1970.*** **New York: Penguin Books, $10.95 (paperback), 529 pp. (ISBN 0-14-00-9741-4).**

Marcus, Alan I., Howard P. Segal (1989). ***Technology in America: A brief history.*** **New York: Harcourt, Brace Jovanovich, Publishers, $14.95 (paperback), 380 pp. (ISBN 0-15- 589762-4).**

McGinn, Robert E. (1991). ***Science, technology, and society.*** **Englewood Cliffs, NJ: Prentice Hall, $19.40 (paperback), 302 pp., (ISBN 0-13-794736-4).**

Pacey, Arnold (1990). ***Technology in world civilization.*** **Cambridge, MA: The MIT Press, $9.95 (paperback), 238 pp. (ISBN 0-262-66072-5).**

Pursell, Carroll W. Jr., Ed. (1990). ***Technology in America: A history of individuals and ideas.*** **Cambridge, MA: MIT Press, 2nd ed., $11.95 (paperback), 319 pp. (ISBN 0-262-66049-0).**

Reviewed by Dennis W. Cheek

These five books, all available in paperback, are part of a growing and intersecting corpus of scholarship that will enlighten technology educators at all levels - elementary through post-doctoral studies. Two books provide a very broad base from which to consider the other contributions, which focus on the history of technology in America. The five volumes as a set, make a wonderful resource library for any technology teacher seeking to understand technology within the contexts of American history and global interdependence.

McGinn's contribution to the well-known and highly acclaimed Prentice Hall Foundations of Modern Sociology Series, is the best introductory sociol-

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ogy of science and technology textbook in English. The author is department chair of the Values, Technology, Science and Society (VTSS) Program at Stanford University. The nature, contexts, and relationships between science and technology are briefly explained. Modern theories of science and technology in society are presented to form a context for topics in the remainder of the book. The final two sections consider the influence of science and technology on modern society and the impact of modern society on science and technology. An appendix briefly introduces the reader to the growing STS movement.

The sociological approach of McGinn is nicely complimented by Pacey's historical tour de force which looks at technology over a thousand year period of world civilization. A singular contribution is his emphasis upon the adaption of technology to particular cultures and peoples. Pacey presents many examples of the diffusion and transformation of technology from Asia and Africa to Europe and cases where the diffusion occurred in the reverse direction. His informed criticism of naive technology transfer from industrialized to nonindustrialized nations is well-founded.

What then of technology in America? The reviewer knows of no better starting point to pursue general studies in this arena than the recent works by Hughes, Marcus and Segal, and Pursell. The broadest perspective is that of Marcus and Segal who deliver just what the book's subtitle promises - a brief history. Within this handy tome, the reader will find a concise yet encyclopedic account of technology in America. The authors skillfully link technologies to their underlying political, social, and economic contexts, and establish systematization as a major theme in American technological development. The technology teacher will gain a new appreciation of how interwoven technologies are with one another in both their origins and subsequent evolution.

More detail about specific individuals instrumental in the development of technology in America can be gleaned from the very useful second edition of Pursell's edited volume. A group of 22 eminent historians of American technology present biographical vignettes of 21 key individuals and their ideas. Instead of merely cataloguing of achievements, each essay helps the reader see the individual within an appropriate social and historical context. The essays are nontechnical in nature and many would be suitable for high school technology students to read and consider.

For in-depth treatment of technology in America during the last one hundred years, there is probably no better treatment on the present market than American Genesis from the pen of the noted University of Pennsylvania historian of technology, Thomas P. Hughes. Taking ‘the world as artifact’ as his metaphor, Hughes tries to explain historically how we have come to live and accept life in a technologically fabricated world. He admirably succeeds in his goal to produce not simply another history of technology in America but a rich social history that considers technology's broad impacts and pervasive influence on the culture, behavior, and mores of modern America. The book breaks new ground with bold new explanations and like all books of this type, causes an

informed reader to part company with the author at certain points. Yet, that is one of the hallmarks of a worthwhile book.

All five books enable the technology teacher to see technology in a broader and deeper context than is often the case. Each contributes worthwhile perspectives to anyone seeking to think in fuller ways about technology and its role in the modern world. All of these works are accompanied by lists of additional readings, subject and author indices, and period B & W photographs. Some also include diagrams from the period under discussion. If you've been teaching technology without much sense of its history or impact, these books are sure guides that will enrich your teaching and your thinking. ˚