

Market research

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The Changing University: How Increased Demand for Scientists and Technology is Transforming Academic Institutions Internationally. Edited by Dorothy S. Zinberg. Kluwer: 1991. Pp. 182. £41, \$69.

THE bewildering pace of world events may yet turn today's wave of the future into tomorrow's beached driftwood. But for now it seems that market forces are widely accepted as the most effective means of regulating economic activity. And it is not hard to understand why. The prospect of reward proportionate to risk and earned through competition can unleash enormous energy. The dynamism of the world's free economies stands in sharp contrast to the stagnation of the failed economies of the Socialist nations.

Systems of higher education could hardly stand apart from so profound a force. In showing how and why they have not, this book addresses whether market forces are on balance likely to be helpful or harmful to universities and science. Even in the United States, where universities have never really been isolated from the rest of the world, the pressures and temptations of closer connections with commerce have introduced policy issues that are testing the fabric of these institutions. The value of the book is that it examines in an international context issues already familiar to US and, increasingly, British academics. It provides a useful guide to these pressing issues, a sobering reminder of their capacity to do damage, and an invitation to remember first principles.

The essays can be grouped under three main themes: changing patterns of funding and their consequences; science and engineering manpower; and the effects of university involvement with government and industry on the free flow of scientific information. In all three areas, the news is not good for those who hold to the classical view of the university both as an institution committed to the search for truth and to the dissemination of this knowledge without hindrance, and as a body opposed to all forms of parochialism. It is clear that in the United States and Europe at least, the perceived economic value of research and training in science and technology has produced a market for what universities have to offer, and even those institutions most faithful to their traditions are finding it hard to resist the market's claims on their resources and policies.

It is useful to view these matters from an industrial perspective. In a thoughtful essay that is largely sympathetic to the

university cause, John A. Armstrong of IBM raises the uncomfortable questions that university connections with business inevitably present. He clearly spells out the harsh reality that industry has no obligation to support universities beyond the support that industrial taxes provide. He believes that it is unrealistic to expect industry to make up for shortfalls in government funding, adding that it "would be a mistake to ignore the substantial ignorance and lack of sympathy, both in corporations and in government for the ethos of the open, internationally minded university community". More specifically, he argues that universities have greatly overstated the value of their research to economic competitiveness; that important conflicts over the ownership of intellectual property remain unresolved; and that universities allow and even promote profit-seeking conduct that is unacceptable for scientists in industrial or government laboratories.

Shirley Williams offers a British per-

spective, but as the main aim of recent British governments seems to have been to make British universities more like those in the United States, her words really address both systems. They are words of caution: "Those who want to harness the universities to commercial objectives may destroy the very qualities they admire in them — intellectual excellence, free inquiry, scientific imagination."

The evidence that such warnings need to be taken seriously is, not surprisingly, most readily seen in the United States, where universities are the most permeable by commercial enterprise. It would be an exaggeration to say that there is a crisis of values in US universities, but not one to say that the elements of such a crisis exist and will grow worse unless attended to. Universities now routinely accept the need to delay the publication of scientific work in order to protect patenting or other proprietary rights. Faculty consulting and entrepreneurial activities compete with other institutional obligations.

Sharp criticism of the willingness of universities to accept foreign, especially Japanese, research and other support conflicts with the growing need to make education and science more international. So, too, do concerns over the number of foreign students in science and engineering doctoral courses, the



HUNTERS in Yosemite, a decade before the region was accorded national park status in 1891. The mountaineer and popular nature writer John Muir welcomed the restrictions on "the barbarous slaughter of bears, and especially of deer", although the interests of the visitors came first, with aggressive bears being sometimes 'disposed of'. Recreational hunting remained a widely accepted activity, endorsed by conservationists and influential statesmen such as President Theodore Roosevelt, who hoped that wilderness hunting would restore to urban Americans the "hardihood, self-reliance, and resolution" of the pioneers. Following a hunting trip in Yosemite in 1903, he was scolded by Muir who asked, "Mr. Roosevelt, when are you going to get beyond the boyishness of killing things?" In *Wild Animals and American Environmental Ethics*, Lisa Mighetto draws on the writings of these and other American conservationists to trace the changing attitudes to wildlife in the United States since the mid 1800s. Published by The University of Arizona Press, price \$35 (hbk), \$17.95 (pbk).