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The Scientific Age

By

LLOYD V. BERKNER

New Haven: Yale University Press. 1964.

Pp. xvi, 137, \$4.00

This slender volume assembles, in its five chapters, the 1964 presentation of the distinguished Trumbull Lectures at Yale, given by the author. Widely known in scientific circles for his energy and originality, he is the President of the Graduate Research Center of the Southwest, the inception of which is described beginning at page 50. He is, without doubt, a qualified spokesman for the technological accomplishments and promise of the physical sciences.

The Western World, he points out, has emerged from the ancient economy of scarcity to an economy of abundance, thanks to science. Its continuance rests upon the solution of two sets of problems, one external, the other internal to the West. Both involve the necessity of bringing population increase under control.

The external problem is that of world instability due to the contrast between the advanced nations and those still experiencing the traditional economy of scarcity. If this can be solved, what are now our internal problems will presumably become of world-wide concern, to be confronted wherever modern technology exists.

Where it does prevail, our population is "being forced from a basic dependence upon agriculture and natural resources to a quite new dependence on manufacture and industry."¹ The new facility with which consumer goods can be produced makes it necessary to stimulate demand for them, creating more employment and the means to purchase. This in turn requires accelerated research and a steadily increasing output of Ph.D.'s. "For each Ph.D. we can employ five to ten engineers and for each engineer, ten to fifteen skilled workers."² In this connection, while there is no doubt that investment in research has been amazingly profitable for many con-

1. P. xii.

2. P. 29.

cerns, industrialists are beginning to take a hard and sober look at the economics of research.³ Some of them, at least, are beginning to suspect that it is not always the magic limiting factor.

Quite correctly, in my view, Dr. Berkner stresses the need for a high general level of scientific literacy. This is a prerequisite to the development of adequate sanctions in the field of political, social, and economic behaviour. He is severe in his indictment of what he considers a moribund tradition of liberal education. He is quite clear as to its potential and the need of the cultivated mind for both science and the humanities. But he is decidedly more emphatic in his demand that our philosophy be revised in the light of science than in any insistence that science and its consequences be as severely scrutinized in the light of human and historical experience.

Here is where the importance of *The Scientific Age* to the student of natural resource problems comes into the picture. For the concern of such students rests upon a solid base of historical data,⁴ as well as rules of experience in the neglected field of ecology. Even the simple techniques of prescientific man have often greatly lowered, if not destroyed, the biological potential of the ecosystem, *i.e.*, the total landscape. A heavy burden of proof lies upon those who fail to reckon with the trend and power of modern technology in this respect.

Aside from the subject of population control and a brief reference to the remarkable progress of experimental and analytical biology, life science is ignored in the presentation under review. The social sciences fare no better, being credited with a few promising beginnings, despite their contribution to cultural dynamics.

Actually, ecology has a great deal to offer in the very terms of energetics and material transformations that are basic to modern technology. Its findings are also vital to any critique of the impact of science on the modern world. For a caustic, but powerful presentation on this subject, I recommend certain sections of a recent article.⁵ While it might be said of the writer of this article, as of Theodore Roosevelt, that he occasionally gives the impression of having discovered the Ten Commandments, he is an invaluable critic for whom I entertain high respect. Certainly Dr. Egler leaves no

3. See Fortune, Jan. 1965, p. 160.

4. See G. P. March, *Man and Nature* (Lowenthal ed., Harvard Univ. Press 1965).

5. F. Egler, *Pesticides in Our Ecosystem*, *American Scientist*, March 1964, pp. 110-56.

doubt that science should be used not merely as a source of device, but to examine the consequences of its own application. In this respect, he furnishes a necessary complement to the brilliant Trumbull Lectures of Dr. Berkner.

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