Book Reviews

Technology and Civilization

After the Seventh Day. The world man created. Ritchie Calder. Simon and Schuster, New York, 1961. 448 pp. Illus. $6.95.

This is a book with a message founded on the premise that if man takes heed of his past mistakes he can solve his major problems of the present and deal intelligently with his future. Ritchie Calder writes, with the traditional mechanistic orientation of the Western world, that, with the foresighted application of technical knowledge now current or in the process of development, man's future lies completely in his own hands. In this sense it is an optimistic book despite its note of warning and of urgency.

Calder is a distinguished journalist who has devoted much of his life to popular science writing. He has traveled widely for United Nations organizations and he draws heavily on extensive reading, personal observation, and personal contacts with an impressive variety of human beings from different environments, different specialities, and from different cultural traditions. The resulting book contains much out-of-the-way information, many sharp insights, and a persistent theme.

Unfortunately, however, the book's basic organization is almost completely obscured by division into ten parts, each with a catchy title; the parts are further fractionated into 194 separate, brief, titled units. The structure of the argument itself thus tends to get lost. Actually, the first major section, of six parts, takes up approximately two-thirds of the entire volume. This section attempts to review man's cultural history from its earliest beginnings to the present day with an almost exclusive focus on the proposition that cultures and civilizations rose and prospered as man, through technological development, expanded his relationship to his environment in a harmonious fashion, and that his civilizations fell and disintegrated when man destroyed his own ecological balance. The last third of the book, despite its arbitrary division into four parts, really consists of only two themes, the present and the future. Parts 7 and 8 scan modern problems, particularly those caused by radioactivity, by ecological considerations in planned developments, by oil, water, and fossil soils in the Sahara, by soil salinity, and insect pests and disease; part 9 deals exclusively with the population explosion, and part 10 concentrates on what to do about the future.

Calder sees no possibility that birth control policies will make a significant contribution to the solution of the population problem during the critical period of the next 20 years, particularly in the face of our progress in "death control"—the raising of life expectancy in areas where it is still shockingly low. His answer lies in the utilization of potential resources (many until recently quite unknown) by emerging techniques and, with due regard to the mistakes of the past, to render fruitful and habitable the arctic and desert wastes, the high altitudes and the tropical forests, and also to exploit intelligently the enormous food-producing possibilities of the sea. Envisioning a world population of 4,000,000,000 by 1980, Calder sees this situation as a vast international challenge. The industrialized nations of the north temperate zone, who broke first from the starting gate by virtue of the fact that the overwhelming preponderance of fossil fuels lies north of 20 degrees north latitude, must contribute to the development of the lands to the south of it where 80 percent of all the hydroelectric potential of the world lies largely undeveloped.

This is a book that should be widely read, and many of its lessons should be, and apparently some are being, taken to heart. It is at the same time a very annoying book, for one feels that much has been sacrificed in the effort to popularize and condense. Furthermore, as already noted, its structure is not clear; the titles of the sections and subsections are catchy rather than informative; and the treatment of culture history, which takes up the first two-thirds of the book, is very uneven, extremely sketchy, one-sided, and sometimes inaccurate. In like vein, one wonders whether the author does not over-assess some of the possibilities of our present ecological, technological, and biological knowledge, and environmental potentialities.

On net balance, it is my judgment that this book is well worth reading and that it will repay the effort to plow through its very choppy but often brilliant seas.

Calder closes with this thought:

"With the resources of modern science and technology, tempered by wisdom, we can escape from the limitations of past civilizations and succeed where they failed.

"But, remembering the 4,000,000,000 people who will share this planet in twenty years time, science and statesmanship will have to work fast."

I wish I could be as sanguine as Calder.

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Objectives, Methods, Models

Design of Water-Resource Systems. New techniques for relating economic objectives, engineering analysis, and governmental planning. Arthur Maass, Maynard M. Hufschmidt, Robert Dorfman, Harold A. Thomas, Jr., Stephen A. Marglin, and Gordon M. Fair. Harvard University Press, Cambridge, Mass., 1962. viii + 620 pp. Illus. $12.50.

In response to growing feelings that the methods of planning basin-wide, multiple-unit water-resource systems were not adequate, faculty and students at the Harvard Graduate School of Public Administration began, in 1955, a study of the methodology of system design. The resulting book represents a carefully considered viewpoint on system design, presented as a compendium of 15 chapters by different authors. In part 1 the discussion considers the objectives of water resource development, sets forth some possible economic models, and reviews some deci-