Book Reviews

Movement for Survival

This Endangered Planet. Prospects and Proposals for Human Survival. RICHARD A. FALK. Random House, New York, 1971. xiv, 498 pp., illus. \$8.95.

Building the City of Man. Outlines of a World Civilization. W. WARREN WAGAR. Grossman, New York, 1971. xii, 180 pp. \$10.

Blueprint for Survival. EDWARD GOLD-SMITH, ROBERT ALLEN, MICHAEL ALLABY, JOHN DAVOLL, and SAM LAWRENCE. Houghton Mifflin, Boston, 1972. xiv, 190 pp., illus. \$4.95.

World without Borders. LESTER R. BROWN. Random House, New York, 1972. xviii, 395 pp. \$8.95.

The Mature Society. DENNIS GABOR. Praeger, New York, 1972. viii, 208 pp. \$7.50.

Something like a world survival movement may be what we need next, and in fact it may be larger already than most of us realize. In the last two years, the global analyses and calls to action have been building up, including the five books here, along with the more technical M.I.T. studies such as Man's Impact on the Global Environment and Man's Impact on the Climate, and the Club-of-Rome-sponsored study by Meadows, Meadows, et al. on The Limits to Growth. Overlapping analyses emphasizing the political and cultural changes involved in world transformation would also include Servan-Schreiber's The Radical Alternative and Revel's Without Marx or Jesus: The New American Revolution Has Begun, as well as Sakharov's 1968 book Progress, Coexistence and Intellectual Freedom.

This would make an excellent reading list for any study groups concerned with world survival problems. What distinguishes these books from most of the critical and countercultural literature today is their level of technical systems analysis rather than polemics, their programs of constructive action, and their belief that a more humane global future can still be created by our efforts in the next few years. They all accept the three basic premises of the Club of Rome: that our problems are

(i) multiple and interacting, (ii) global, and (iii) urgent, on a time scale measured in years rather than decades. And they stress, with varying emphases, the same cluster of major problems that must be solved together-the "problematique," as Ozbekhan has called itwhich includes peace keeping, the richpoor gap, the exhaustion of nonrenewable resources, population growth, and pollution and damage to the ecosystem. (There are no "priorities" in this list. The term becomes meaningless for systems problems. Should the engine have priority over the wheels? Or the steering over the brakes? They must all be worked on in parallel, their interrelation being taken into account, to create a total system that works.)

Actually, it is surprising how similar the conclusions of these books are, since their analyses come from several different countries—the United States, Britain, France, and the Soviet Union and start from several different disciplines, ranging from physical and engineering analysis and systems-dynamics forecasting to ecology, peace keeping and order building, and cultural and political analysis.

Attempts like these to define the image of a humane and attainable future and to do the systems analysis of the efforts needed to get from here to there are more important than ordinary futuristic "predictions." They may come to play the same role in the present world transformation that intellectual analysis of the class struggle played in the older type of revolution. Both the capitalist and the communist establishments, of course, tend to view all such attempts as nothing but Doomsday sermons: Read any of the establishment critiques of either the computeroriented Limits to Growth or the humanistic-ecological Blueprint for Survival. The New Left and the Third World see these studies in the opposite light, as representing hidden national and class interests that invent rich men's crises to justify their continued computerized and technocratic attempts to maintain their domination.

This was the theme of the demonstrations in Stockholm against the World Conference on the Environment.

But the fact is that our old establishment programs and our old revolutionary arguments are both being rapidly overtaken by the spreading planetary networks of television, tourism, technology, and trade. A new scale of problems demands a new scale of formulation. The only answer to an integrated global analysis is a better integrated global analysis. It is true that these present systems analyses of the problematique are only at square one. But anyone who wants to understand or shape the future more effectively-whether capitalist or communist, establishment or counterculture, rich or poor-must take account of these analyses, and apply them or extend them or else prove that he can supersede them.

Richard A. Falk is a well-known professor of international law at Princeton and a director of World Order Models Projects of the World Law Fund. His book, This Endangered Planet, emphasizes the ecological interdependence of mankind and the need for designing a new peace-keeping and world-order system to manage our "dimensions of planetary danger." The sovereignty of nation-states is already beginning to yield to the global network. Major decisions affecting American life are no longer made in Washington or New York. The energy resources of the United States are determined in the Persian Gulf; the prosperity of midwest wheat farmers depends on Russian purchases; that of Detroit depends on Japanese competition; the export-import balance and the value of the dollar are determined in Paris and Geneva; and the profits of the arms industry are determined by sales to 50 countries, competing with purchases of civilian goods.

Yet there is no adequate transnational system for handling our ecological and global threats that also cross all boundaries. Falk says they are too urgent for separate national agreements and gradualist solutions and can be solved in time only if we make "an abrupt . . . and drastic modification of the world-order system" (p. 264; emphasis his). The present Vietnam peace and the détente among the great powers are welcome events, but they are held together only by personal contacts among leaders who may die or be deposed. The basic instability and the danger of nuclear accident and escalation will remain unchanged until we

SCIENCE, VOL. 180

create accepted supranational authorities for peace keeping, the settlement of disputes, and nuclear management and arms control.

Falk spends over one-third of his book on detailed steps in the design of a new world-order system and on the activism, political pressure, and personal commitment needed to create it. He shows how in the 1970's, 1980's, and 1990's we will move either from despair to desperation to catastrophe or, with more constructive efforts, from awareness to mobilization to world transformation.

Warren Wagar's Building the City of Man (not to be confused with his earlier book The City of Man) is another "world-order book" sponsored by the World Law Fund. Wagar is explicit about the need for a global political movement, "the World Party . . . that must create a civilization" (p. 57). He says that the present peace movement fails because its aims are "too narrowly political," while the scientists' technological fixes are "not political enough" and the proposals of the New Left are "romantic, nationalist red herrings" (pp. 40, 42, 45). He calls for a new master strategy with "three main fronts: developing a new ideology of world order and a new humanistic religion, building a world political party to guide the transfer of public power from the nation-states to the world republic, and providing survival insurance for civilization against the risk of Doomsday" (p. 50). (A complete strategy will also need to include the deliberate design of transformation paths and the development of new social inventions for catalytic change on each of these fronts.)

Wagar tries to spell out what the new world could bring, in culture, in the morality of mutual service, in education, in relations between men and women, and in "commonwealth" or political structure. "The world state, as I foresee it, will be unitary, democratic, socialist, and liberal" (p. 142). Some of his ideas may be more radical than necessary, but his main thesis is correct. that we must have an image of mankind's future and that we must begin now to create the change mechanisms and institutions that will bring it into being. He particularly emphasizes the need for fitting together the internalized culture of mankind with the external commonwealth. We will obviously need complementary changes at a hierarchy of levels. Some of the powers of the nation-states must indeed be transferred up to the global commonwealth-

Reviewed in This Issue

Albert Einstein, B. Hoffmann	620
The American Medical Machine, A. Ribicoff	628
Blackberry Winter, M. Mead	618
Blueprint for Survival, E. Goldsmith, R. Allen, M. Allaby,	
J. Davoll, and S. Lawrence	580
Building the City of Man, W. W. Wagar	580
The Case for American Medicine, H. Schwartz	628 500
The Computer from Pascal to von Neumann, H. H. Goldstine	288
A Computer Perspective	590
Contemporary Archaeology, M. P. Leone, Ed	610
Culture Bahavior and Bargonality D. A. LaVing	610
Dr. Robert Broom ERS G. H. Findley	600
The Edge of an Unfamiliar World S Schlee	501
Finstein I Bernstein	620
Evolution Mammals and Southern Continents A Keast	020
F. C. Erk. and B. Glass. Eds.	603
Floristics and Paleofloristics of Asia and Eastern North America.	
A. Graham, Ed.	605
Functions of Language in the Classroom, C. B. Cazden, V. P. John,	
and D. Hymes, Eds	615
Genetics and American Society, K. M. Ludmerer	584
Growth by Intussusception, E. S. Deevey, Ed	601
The Harvard Fatigue Laboratory, S. M. Horvath and E. C. Horvath	60 9
Harvard University Program on Technology and Society, 1964–1972	582
Health Care: Can There Be Equity?, O. W. Anderson	628
A History of Biochemistry, parts 1 and 2, M. Florkin	606
The Legacy of George Ellery Hale, H. Wright, J. N. Warnow, and	500
C. weiner, Eds.	592
Man and Woman, Boy and Girl, J. Money and A. A. Ehrhardt	386
Mathematical Indugni from Ancient to Modern Times, M. Kine.	627
The Mature Society D Gabor	520
Mercury I I Goldwater	200
Molecular Ricenercetics and Macromolecular Ricchemistry	020
H. H. Weber, Ed.	608
Molecules and Life, J. S. Fruton	606
Natural Science Books in English, 1600–1900, D. M. Knight	625
Newton and Russia, V. Boss	623
Our Tool-Making Society, I. Taviss	582
Paradoxes of Rationality, N. Howard	595
Proceedings of the Sixth Berkeley Symposium on Mathematical	
Statistics and Probability, vol. 5, L. M. Le Cam, J. Neyman,	
and E. L. Scott, Eds	600
Psychology of Reasoning, P. C. Wason and P. N. Johnson-Laird	596
Reinventing Anthropology, D. Hymes, Ed.	612
Science and Technology in Art Today, J. Benthall	598
Science, Medicine and Society in the Renaissance, A. G. Debus, Ed.	625
The Social Behaviour of Monkeys, T. Rowell	602
G H Müller Ede	FO
Taxonomy Phytogeography and Evolution D U Valanting D1	277 272
This Endancered Planet R A Fall	5003
Time in Science and Philosophy I Zeman Ed	500
UFO's—A Scientific Debate. C. Sacan and T. Page. Ed.	502
World without Borders. L. R. Brown	595
	500

nuclear control, energy, resources, pollution, population, communicationsbut others need to be transferred downward as far as possible for diverse regional and community and individual self-determination,

Blueprint for Survival is the publication in book form of the famous and controversial manifesto which was endorsed by 33 British scientists and which constituted the January 1972 issue of the Ecologist. It was hotly debated in Nature, the New Scientist, the Times, the Observer, and elsewhere, and extensive counterattacks by such critics as John Maddox, the editor of Nature, have now been published. Blueprint translates the M.I.T. Global Environment statistics and the warnings of The Limits to Growth into a program for social and political reorganization. It is perhaps best summarized in the resolution adopted by the Board of Directors of the Sierra Club in May 1972:

The Sierra Club supports the goals as described in the Blueprint for Survival of a stable but diverse society for the world community which minimizes environmental destruction, reduces the discrepancy between economic values and costs and social values and costs, and increases the diversity of physical and social environments.

Blueprint is actually trying to set up a "Movement for Survival," with "national movements to act at national levels, and if need be to assume political status and contest elections" (p. vi). It stresses the need for "orchestration" or concerted action on many fronts by many groups (pp. 61-65). But its technical emphasis is ecological, on the design of a cybernetic and self-regulatory society (p. 111), with diverse, humanized, and resource-conserving towns and farms, a society which "would provide us with satisfactions more than compensating for" those of our present exponential-growth societies (p. 157). It is a powerful statement of what life could be and what we need to do, and millions of people may be moved by it.

Lester Brown of the Overseas Development Council is a world food expert and author of the earlier, very optimistic Seeds of Change. His new book, World without Borders, gets into the social and human aspects of the problematique-the rich-poor gap, unemployment everywhere, the ruralurban migration, and hunger. To solve such problems, he urges the creation of a global economy-including and going beyond the multinational corpora-

582

tion-and a global infrastructure, of communications-education, transportation, and new oceanic, environmental, disaster-relief, and research agencies.

Brown proposes less long-range and fundamental reforms than the previous authors, but he is more attuned to the next steps that need to be taken by present institutions, governments, and United Nations agencies. He wants to turn swords into plowshares, to redistribute resources, to strengthen the United Nations, to formulate a new ethic (p. 361), and to take more American initiative in creating a unified global society (p. 358). Unfortunately he often relies too much on good will, on rather unlikely changes of national policy, and on a United Nations whose structure is obviously inherently defective for solving these-global problems. He applauds the recent consumer and ecology and restructuring movements in the United States, but he does not see the need to integrate these into an organized movement for a new world order. He concludes, "The most urgent item on our agenda . . . is the creation of a world without borders, one which recognizes the common destiny of all mankind" (p. 364). A major subgoal, yes; but it conveys little sense of the total system building, from the roots, that is in fact necessary. Yet many of Brown's proposals may be feasible, and it would be important to try to get them adopted in the next few years.

Dennis Gabor won the 1971 Nobel Prize for the invention of holography, and his book The Mature Society is a continuation of themes from his 1964 book, Inventing the Future. It starts off with his opinions and futuristic proposals on various subjects, such as absenteeism, drugs, inflation, competition, education, "ethical quotients," and "the moral achievements of science." He is against "technology autonomous," but a sort of technocratic smugness often mars his off-the-cuff ideas. He dismisses nuclear war between the United States and Russia as having "probability nil" (p. 19). And he foresees unlimited power: "In the long run ... uranium can be extracted from the seas . . . with abundant power all metals can be extracted, even from the poorest deposits, or from the sea" (p. 29). No mention of energy or entropy costs or thermal pollution.

Nevertheless his book must be included on the survival list, because he goes on to emphasize that "growth will have to reach a turning-point and we must work . . . towards a stable ecosys-

tem" (p. 24). He sees this as requiring the urgent development of a Mature Society: "a peaceful world on a high level of material civilization, which has given up growth in numbers and in material consumption but not growth in the quality of life, and one which is compatible with the nature of homo sapiens . . ." (p. 3). And he says, as we must all say, "Let us avoid the greatest of dangers, while leaving as much freedom as possible for those who come after us . . ." (p. 5).

The fact that these different authors with many different points of view are all converging so suddenly on such a shared image of the global future, with such a shared sense of urgency and needed effort, is astonishing and heartening. It suggests that 1973 may be the year when a world survival movement actually develops. If these books, and the groups they represent, could generate a real movement of this kind, it could create a focus of hope, a sense of community, and a mobilization of personal and political resources for the long haul on a scale that would in fact transform these global problems. It would be not merely a human organizational event, but a scientific and biological event that could change the slopes of all those Doomsday curves. It could create the possibility of a human future that would be, for the first time, believable.

JOHN PLATT

Center for Advanced Study in the Behavioral Sciences. Stanford, California

Addressing a Central Problem

Harvard University Program on Technology and Society, 1964-1972. A Final Review. Emmanuel G. Mesthene, director. Harvard University, Cambridge, Mass., 1972. vi, 286 pp.

Our Tool-Making Society. IRENE TAVISS. Prentice-Hall, Englewood Cliffs, N.J., 1972. 146 pp. Cloth, \$5.95; paper, \$1.95.

Harvard University's Program on Technology and Society began in 1964 when, in a widely publicized move, IBM made \$5 million available for an interdisciplinary study of the impact of technology upon society. The program, slated to run for a full decade, was headed by philosopher Emmanuel G. Mesthene, whose background included experience in business, government, and education. After eight years of work, and the expenditure of some \$3.5 mil-