

nature of demography" through "Rates and ratios," measurement of birth and death rates, measurement of the growth of population and migration, and, finally, measurement of "Manpower and working activities." Illustrative materials are drawn from the population censuses and vital statistics of countries throughout the world.

Considering the purpose for which this volume was prepared, the author has done an excellent job. Only the chapter on "Manpower and working activities" is weak; it fails to get at the heart of the definition of working force and of the methodologies available for studying this subject. This topic is by far the most difficult in all population analyses and very probably cannot be treated in as simplified a fashion as some of the other topics.

Various other volumes have been written on demographic techniques, some by actuaries, some by United Nations personnel, and some by university people and other demographers. Without exception every other such volume which I have seen was written for readers who had some statistical or mathematical training and some familiarity with censuses and vital statistics. When writing for these "more learned" audiences, obviously, it is possible to include more sophisticated techniques and to examine all the procedures much more carefully than Barclay was able to do when writing for a relatively unsophisticated reader.

This book can probably be used as a text in high schools, and certainly in the first or second year of college. For more advanced American college students it will be useful as supplementary reading.

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Landmarks of Tomorrow. Peter F. Drucker. Harper, New York. 1959. xii + 270 pp. \$4.50.

Anyone with a clear memory of the world of 25 years ago knows how fantastically different that world was from this one—different not only in the level of production and income but different also in national policies and international relations, in the problems that concern individuals and governments, in man's expectations and aspirations for the future. Yet the world of 25 years ago was the modern world of big business, high-speed transportation and communication, Freud, revolutionary scientific theory, new invention, and social change.

What then is this world? Drucker calls it the "post-modern" world and describes one of its fundamental features

as a changed attitude toward change itself. In the past, change was sometimes thought of as fate, and sometimes as inevitable progress. Change now—and this is the starting point of Drucker's analysis—is deliberately planned. Man has learned enough of science and of management to be able to invent, on demand and to specification, new goods and new social, industrial, and political devices to suit his needs; witness polyethylene, voluntary medical insurance, the Marshall Plan. The basic method is what Drucker calls the organization of ignorance—the systematic review of what must be learned, developed, and constructed to make the desired invention work. This is not new; in this sense Mendeleev "invented" the periodic table, and the Federal Government "invented" TVA. What is new is that innovation is now the norm; man knows how to organize his ignorance; he is prepared to take the risks involved, and to expect enough successes to overbalance the failures. Change is no longer fate or inevitable progress but man's own doing, and thus man must accept responsibility for the future.

Against this background the author sweeps over a wide range of problems: the fate of Communism, the upward struggle of underdeveloped nations, the problems of government, the relations of various centers of power in an industrialized economy, the role of research, and, most emphatically, the need for a philosophy, a theory, a discipline—"a strict discipline of qualitative and irrevocable changes such as development, growth, or decay. We need rigorous methods for anticipation of such changes. We need a discipline that explains events and phenomena in terms of their direction and future state rather than in terms of cause—a calculus of potential, you might say, rather than one of probability. We need a philosophy of purpose, a logic of quality and ways to measure qualitative change."

Drucker does not try to develop this philosophy or discipline. All he does is to ask a lot of hard, thoughtful questions, here and there to show why yesterday's methods cannot possibly solve today's problems, and to organize a wide range of information to show how fundamental and pervasive the change has been. Many of the things he says have been said by others; indeed one of his points is "how obvious the unfamiliar new already is." Sometimes I read with disagreement, sometimes with shock, and sometimes with gratitude for a stimulating synthesis. The whole is provocative reading indeed, for the social scientist or social philosopher, for anyone responsible for management, and for anyone interested in education or the social aspects of science.

Any such book must be partly sermon. The theme of this sermon is responsi-

bility: educated man must accept responsibility for determining the "Landmarks of Tomorrow"; the responsibility lies heaviest on those nations which have acquired the greatest experience and skill in innovation.

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Investment in Innovation. C. F. Carter and B. R. Williams. On behalf of the Science and Industry Committee [British Association for the Advancement of Science]. Oxford University Press, New York, 1958. ix + 167 pp. \$2.40.

Beginning more than a decade ago, arguments raged in the United Kingdom about the inadequacy of the research and development effort, both in quantity and in effectiveness of organization, and the slowness of industry to invest in innovation. Many conflicting suggestions were advanced. The authors, who are British university economists, have spent most of the intervening period collecting concrete information on these and closely related subjects.

This book is only the filling in a sandwich. A predecessor, *Industry and Technical Progress* (1957), dealt in a particularly thorough manner with the supply of technical personnel. The follow-up study is to be called *Studies in Company Finance*.

After a rather prosaic discussion of the origins of innovation, and an increasingly interesting evaluation of the bases for deciding when and if investment should be made, the authors very sanely conclude that no generally applicable set of rules exist. Before reaching this position they introduce the questions of opportunity (as provided by research and invention), uncertainty (usually greatest in marketing aspects), motivation (profit is seldom the dominant conscious aim in the choice), institutional environment (40 percent of the decisions were forced by external circumstances), capital supply (only a small volume of useful industrial innovation seems to be inhibited by credit restrictions), and the influence of changes in interest rate (which are small as long as the rate moves in the 2 to 7 percent per annum range). Typical resolutions of these questions within individual firms are illustrated in six brief case studies.

The writing seems to be directed to civil servants, directors, managers, and educated policy makers. In a valuable appendix the relevant economic theory is reviewed, and it is demonstrated to colleagues in the economics profession that the present state of Keynesian theory is not very helpful, and that alternative formulations are not at all ex-

plicit. *Investment in Innovation* is an admirable example of analysis, with reasonable inferences drawn from recent experience. It makes no attempt to construct a new system, nor does it incorporate any ingenious devices for bringing about increased outlay for innovation.

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The Population of Japan. Irene B. Taeuber. Princeton University Press, Princeton, N.J., 1958. xx + 461 pp. Illus. \$15.

If a nation the size of Japan had suddenly appeared on the earth on 31 December 1958, it would have been one of the great news stories of modern times. Actually, such a nation did move in on our planet during 1957 and 1958, for world population grew by some 90 million persons during those two years.

Nothing like that has ever happened before in the history of man. It took 200,000 years for the human species to multiply to a billion souls. Then the number doubled to 2 billion in only 2½ centuries. At the current rate of population increase, the present nearly 3 billion of us will grow to 6 billion by the year 2000. The United Nations was not fooling when, in a recent publication, it warned that this unprecedented multiplication of people is "at the very heart of the problem of our existence."

The complexities of the problem of too-rapid population growth surround the problem with an aura of futility. Yet, within just the last few decades, an Asian nation has reversed the upward trend of its birth rate to undergo the most remarkable demographic transition of all time. The *Population of Japan*, a monographic survey by Irene B. Taeuber, records this transition.

Irene Taeuber is the distinguished research associate of the Office of Population Research of Princeton University. She was for many years editor of the *Population Index*. She has traveled widely, thought profoundly, and written wisely on this compelling problem. Her survey of Japanese demography traces developments since the 12th century. The major part of her book is concerned with the fantastic century which intervened between the reluctant welcome given to Perry in 1854 and the end of World War II, when another visitor from the West dictated another agreement under the guns of warships.

The isolated island empire which Perry visited a century ago had a population stabilized, by a "managed" death rate, at about 30 million. A high death rate usually served to keep the high birth rate in balance. When for any

reason natural causes failed to take the necessary toll, infanticide was used to redress the balance.

Perry's arrival initiated a social, political, and industrial revolution which upset this traditional system. In the succeeding century Japan's population tripled and she emerged as one of the world's most densely populated countries. In an incredibly short time she shifted from a feudal, Oriental, agrarian culture to an industrial, urban civilization patterned on an alien culture. The Japanese achieved levels of literacy and of living far superior to those of any other Asian country. Amazing advances in science and technology marked this century of change and progress as unique.

In the light of the current world population crisis, Taeuber's detailed account of what has happened in Japan to bring fertility into balance with modern low mortality is a story which deserves the consideration of all thinking persons.

The dramatic decline in the Japanese birth rate since 1945 tends to conceal the very important fact, emphasized by Taeuber, that the beginning of fertility control extended back more than 40 years to a time when national policy favored rapid population expansion:

"Planned limitation existed in the population of Japan in 1920. In the decades after 1920, practices of limitation were diffused over broader geographic areas and accepted by increasing numbers of people in ever-wider ranges of social groups.

"In the years before World War II a major portion of the increasing limitation of fertility among the Japanese was associated with the postponement of age at marriage and the separation of couples by the military service or migration of the husband. The process of fertility decline was continuous, but slow. In the middle 1930's the fertility of the Japanese was far below that of the peasant peoples of the East, but it remained high enough to produce a rather large population increase. . . .

"In the postwar years there has been a rapid spread of contraceptive practice and a nation-wide resort to abortions. There is increasing acceptance of sterilization. The decline in marital fertility has been rapid, and it has extended from Tokyo to the villages of Hokkaido in the northeast and Kyushu in the southwest. This is not the response of an agrarian society in the initial period of its social and economic modernization. It is the response of a literate people who have radios and electric lights, who live in a country with a network of transportation and communication facilities, and who work in major part in activities other than agriculture. The formal facts of changing levels of reproductive behavior, of contraceptive products manufactured

and induced abortions performed, and of the diffusion of the various means of limitation singly or in combination contribute little enough to any real knowledge of the changing attitudes and values of the Japanese in the realm of fertility control. They offer even less basis for estimating under what circumstances or with what speed contraception or other types of birth restriction might develop in other Asian populations."

The resort to legalized abortion would not be acceptable in a Western Christian culture. Yet recent surveys have revealed that the practice of abortion is widespread in this country and in Europe. In the light of this fact, it would seem that severe condemnation of Japan's solution would smack considerably of hypocrisy.

Japan, with this sharp application of the reproductive brakes, is today almost at the end of the period when growth of numbers is a problem. The prospect that population stabilization will come within a generation does not exist in any other Asian country. Because of Japan's heavy industrialization and her adoption of modern methods of food production, Taeuber believes that, given full access to world commerce, Japan will be able to care adequately—and at a rising level of living—for annual increases in population that become smaller year by year.

While much of Taeuber's book is highly technical, the lay reader will find kernels of summary and orientation which are fascinating—the chapters on "Marriage," "Fertility," and "The control of fertility" and the chapter on "The demography of war" are especially interesting. The concluding chapters—"Problems, projections and policies" and "The past and the future"—are definitely required reading for anyone who pretends to be really informed concerning the great problem of the world's unprecedented and accelerating multiplication of people.

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The Archeology of Coastal North Carolina. William G. Haag. Louisiana State University Press, Baton Rouge, La., 1958. xi + 136 pp. Illus.

This study reports the results of an archeological program of investigation within the little-known area of the Outer Banks and the adjacent coastal mainland of northeastern North Carolina. The purpose of the program, which was supported jointly by the National Park Service and the Office of Naval Research, was twofold—namely, to investigate the problem of aboriginal cultural