

Introduction to a Submolecular Biology

By Albert Szent-Györgyi. Pp. xi+135. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1960.) 5 dollars.

FOR some twenty years Prof. Szent-Györgyi's interest has been in possible mechanisms by which the reactions in cells are co-ordinated in metabolism and in the transfer of energy. He has successively viewed this central problem from various physical points of view; first, the common-energy level or continuum theory, then the triplet state (in *Bioenergetics*), and now, in this new little book, the theory of charge-transfer complexes. Once again, the possible catalytic effect of water is emphasized, and the author's lucid and enthusiastic prose is reinforced by photographs of the colourful events which happen when various solutions of donors and acceptors are mixed and frozen. The results of extensive molecular orbital calculations by the Pullmanns are included, and serve as the backbone of the discussion, which considers the topics of drug action, adenosine triphosphate, the thymus gland and the living state. There are growing numbers of scientists interested in electron mechanisms in biology who will find this book most stimulating, and a source-book of problems for some years to come.

D. D. ELEY

The Falkland Islands

By M. B. R. Cawkell, Dr. D. H. Maling and E. M. Cawkell. Pp. xii+252+16 plates. (London: Macmillan and Co., Ltd.; New York: St. Martin's Press, Inc., 1960.) 18s. net.

THE relatively little-known Falkland Islands have had a most eventful history since human occupation reached them. Their initial discovery is still somewhat obscure, in spite of active research by the more politically minded writers of South America. In the present work, which is a worthy successor to that of the late Miss V. E. Boyson, the many facets of the islands are carefully described, although sometimes with less enthusiasm than others. This volume proceeds systematically from 'discovery', through the early and later developments to administration and the role of the church and the school. The more scientific aspects of the islands, the climate, vegetation, geology and structure, and bird life are admirably discussed and give the serious reader a very clear insight into the many problems of the islands. The selected bibliography which appears at the end of the book is of great assistance in following up any specific subject more closely. This volume should be read by those who are interested in the far-flung parts of the British Commonwealth, since it is clearly shown that the Falkland Islands is a well-developed colony.

R. J. ADIE

Water Supply

Economics, Technology, and Policy. By Jack Hurshleifer, James C. de Haven, and Jerome W. Milliman. Pp. xii+378. (Chicago: University of Chicago Press; London: Cambridge University Press, 1960.) 7.50 dollars; 60s.

THIS is an interesting but highly critical account of the problems of water supply in the United States approached through the eyes of two economists, Prof. J. Hurshleifer of the University of California and Prof. J. W. Milliman of Indiana University, aided

by a physical chemist, J. C. de Haven. The work has been made possible through the Rand Corporation as part of a research programme.

The authors believe that many water supply professionals are living in an artificial world of their own creation without respect for economic principles and rationality. The present and approaching shortage of water and the proposed remedies are examined in the light of this belief. Many of the conclusions reached are as a result highly controversial. Much of the substance of the book will, however, be of considerable interest to those concerned with problems of the supply of water in other parts of the world. Questions of over- and under-investment, financial returns on outlay, pricing, water in relation to other economic commodities, local regional and national organization and control, technological advances, and the legal position so far as water is concerned are all critically considered.

A great deal of blame is laid by the authors on the imperfections in water law in the United States, where water rights are not clearly defined and cannot be transferred with ease as are rights in land and minerals, etc. As a result it is argued that the economic market processes that ordinarily direct resources to uses that maximize their productivity do not operate.

The establishment of clear property rights in water poses, of course, difficult problems. Water is sometimes a transient resource, sometimes in store, sometimes above and at other times below ground, sometimes even unwanted. But increasingly it is becoming a scarce resource in both semi-arid and humid areas, and capital will be increasingly invested to satisfy the public demand for more water. The plea of this book is that this capital should be wisely invested with due forethought and on sound economic principles.

W. G. V. BALCHIN

Population Redistribution and Economic Growth, United States, 1870-1950

By Simon Kuznets, Ann Ratner Miller, and Richard A. Easterlin. (Memoirs of the American Philosophical Society, Vol. 51.) Pp. xiv+289. (Philadelphia: American Philosophical Society, 1960.) 5 dollars.

THIS is the second volume of a three-volume project designed to link various indexes of economic growth to the redistribution of American population, under the direction of Prof. Dorothy Thomas and Prof. Simon Kuznets. In the first volume, which appeared four years ago, the difficulties of collecting and adjusting comparable time series of economic data for individual years since 1870 were described, and the validity of the estimates discussed. The present volume consists of three monographs, dealing respectively with the labour force in different States, with the regional growth of income and with the changing distribution and structure of economic activity.

In each of the three monographs there is noted a process of convergence of inequalities between individual States. Labour force participation-rates (that is, the proportion of the population in gainful employment), income per head, and structure of manufacturing all show this trend. The authors are content to describe what has happened, and do not attempt to theorize about the future, nor do they suggest that the process of convergence that they describe was a necessary condition of growth in the past 80 years.