additional work are obvious—two notable ones are metabolism (particularly of larval forms) and the development and use of effective control or ameliorative measures. Paradoxically, however, reducing the prevalence of this parasite will undoubtedly seriously affect its popularity as material for use in teaching and research.

Even though this book lacks the structural excellence that the reader has the right to expect, it will undoubtedly fulfill much of the role intended by its author. For the nonspecialist, it will tie together the picture of *Fasciola* and fascioliasis, and for the helminthologist it will serve as a useful secondary source of information.

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Metaphysicians of Economics

Marginal utility theory has an important but controversial place in the history of economic thought. Its very contributions, not unexpectedly, were the objects of profound criticism. Yet contemporary economic theory not only incorporates its basic ideas but also manifests both its marginalist stamp and formal concern with narrowly defined static economic categories. The doctrines of the marginal utility school of the half century following 1870 provided an organizing principle and a heuristic system, and was a source of renewed confidence and even inspiration for economists. Marginal utility analysis was instrumental in comprehending the forces underlying demand, household equilibrium, and even the theory of free trade. Moreover its doctrine was an important weapon in the ideological defense and legitimation of the market system and a policy of *laissez faire*. Individualism was both a methodological and valuational premise.

Yet the accomplishments of the school and its theory—diminishing marginal utility, the equimarginal principle, and imputation, for example—were not permanently satisfying. Utility theorists have been the great metaphysicians of economics; their continuation of the quest for an absolute and invariant basis of value, their conscious attempt to superimpose utility as an all-encompassing organizing principle, and their practice of ideological apologetics—all contributed to an inherent philosophical monism. Most important, utility analysis itself encountered diminishing returns as many of the newer problems of interest to economists simply had no, or little, place for—and really could take for granted—the exercise of consumer valuation and choice and its implications. Also crucial has been the largely nonoperational character of utility theory. Finally, the oversimplified understanding of the utility theorists—at least so far as their formal theory encompassed—of human psychology and of the basic issues of economic policy relevant to market interaction with the legal and moral framework, became a dangerously naive defense of the free market economy. For these and other reasons, marginal utility theory has been in eclipse for about half a century, its central contributions absorbed in the corpus of economic theory though not in the position the utility theorists would have preferred.

In this book, **A History of Marginal Utility Theory** (Princeton University Press, Princeton, N.J., 1965. 270 pp., $6.50), Emil Kauder has given us an important contribution to an appreciation of this stage in the history of economic theory. He is one of a remaining relative handful able to present a sympathetic account of the growth of marginal utility theory (in part due to his multilingual abilities as well as his early training and affinities). Kauder traces the precursors of the Austrian school (the users of such concepts as utility and value-in-use) and developments in recent years (largely game theory). Kauder correctly focuses upon Menger, Jevons, and Walras, and presents an exciting account of the major and minor issues, problems, and controversies as seen by the original developers of utility theory. It is also to Kauder's credit that he traces the philosophical connections and significance of marginal utility analysis.

I am somewhat ambivalent about Kauder's accomplishment. His account of the development of the Austrian school is unquestionably well done and edifying, and his judgment, when he directs attention to evaluation and assessment, is generally judicious and balanced—indeed rarely would I take issue with him. But the book lacks definitiveness and, more serious, is marked by a sympathy that too frequently becomes outright partisan defense. The book is both a history of thought and a polemic. But it is primarily the former, and as such is a fine piece of work, so that its author's often defensive and hypersensitive posture in the latter regard is a small price in comparison. The book will be hard going for a nonspecialist who lacks perspective and to whom equivocal *obiter dicta* may be misleading. As for the specialist, he will wish that Kauder had substituted greater breadth of coverage for passion. Yet part of this difficulty is not due to Kauder: marginal utility theory, for all its pretensions, is not that elaborate. Its distinctions have been eclipsed by other achievements and interests of economic theorists, calling in doubt the relative importance of utility theory (as distinct from the marginal technique) as a heuristic system. Kauder's book, moreover, confirms the metaphysical preoccupations of marginal utility theorists, including their view of marginal utility theory as dealing with the eternal, immutable, inevitable, and the essence of things economic, things to be discovered and not created. To some, then, this book will represent a renewed call to virtue; to others, a futile cry from the past.

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Testing Tests

Some 35 years ago, Oscar Krisen Buros aspired to establish a "test consumers research organization" to test tests for use in education, industry, and psychology. Lacking financial support for such a venture, Buros initiated a test reviewing service in 1938. This "yearbook" series (published in 1940, 1949, 1953, 1959, and now 1965) has consisted primarily of critical test reviews written by selected individuals who have different specialties and points of view.

The 1965 volume, **The Sixth Mental Measurements Yearbook** (Gryphon Press, Highland Park, N.J., 1965. 1752 pp., $32.50), edited by Buros, lists complete identifying information for 1219 tests (all those known to have been published in English-speaking countries from 1959 to mid-1964), grouped into 15 broad classes. It presents 795 new test reviews by 396 reviewers, 8001 relevant references, and

excerpts from 97 test reviews published elsewhere. Also included are the titles of 527 books related to measurement and 377 excerpts from reviews of 193 of these books. Valuable indexes are the periodical directory and index, the publishers directory and index, the index of titles, the index of names, and the classified index of tests.

The yearbooks, which successively supplement previous ones, can be used most completely in conjunction with *Tests in Print* (also by Buros). This volume, which is a classified index, is useful in its own right and supplements the yearbook series through cross-referencing.

A reviewer of the *Fifth Yearbook* was critical of its cost, $22.50, and suggested economies in later volumes. Subscription to the entire series, however, would have cost about $4 per year. In relation to general price increases, the *Yearbooks* are still "best buys."

An evaluation of this last volume can be couched, with palpable redundancy, in terms applied by the reviewers of previous volumes in the series: This remarkable, monumental, colossal, and elaborate book, representing gargantuan and heroic efforts applied compulsively and with missionary zeal, is certain to become a "must"—perhaps even the indispensable "bible"—for the increasing numbers of test users.

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Biophysics

Nonequilibrium thermodynamics is that relatively new extension of classical equilibrium thermodynamics into the domain of irreversible processes, valid for linear systems near equilibrium. The foundations for this extension are to be credited to Onsager who, in 1931, explicitly called attention to a new principle, that of microscopic reversibility. This principle, implicitly assumed by many since the time of Gibbs and his classic presentation of heterogeneous equilibria and Lord Rayleigh and his principle of least dissipation, is often compared to the other principles of thermodynamics, although it is of less general validity.

In the past 20 years nonequilibrium thermodynamics has succeeded in providing a systematic phenomenological explanation of a large number of observations in physical and chemical systems. Prigogine, in particular, has noted its importance in relation to biological systems, and it is in this regard that A. Katchalsky and his colleagues have made notable contributions. With his clarity of thought, eloquence of expression, and ability to develop a physical live picture of complex phenomena, he has brought the merits of this developing science to the more biologically oriented. Thus **Nonequilibrium Thermodynamics in Biophysics** (Harvard University Press, Cambridge, Mass., 1965. 258 pp., $9.75) by A. Katchalsky and Peter E. Curran, is not only timely but a long needed volume.

Following an excellent review of the principles and mathematical structure of classical thermodynamics, Katchalsky and Curran present a systematic, intuitively logical, and explicitly clear development of the theory of irreversible processes. Reference is frequent to systems of inherent interest and concern to the biophysicist. Diffusion and transport receive a great deal of emphasis. Membrane systems play a central role and are developed both in the context of the continuous and the discontinuous. Electrokinetic phenomena, interpreted in terms of frictional coefficients, are rationally presented. Chemical reactions are discussed especially in their relation to diffusion processes. This provides the basis of consideration of transport by chemical association, both "active" and "passive."

A characteristic feature of much of the development in this book is that theory is directed toward the experimentalist. Derivations identify parameters and coefficients which are the practical observables in the laboratory. The authors also nicely avoid much of the mathematical complexity by considering theory only in relation to relatively simple systems that possess only two or three forces and fluxes. This approach does not result in the loss of too much generality but does lead to a presentation that should be substantially more palatable to the nontheoretically inclined.

This volume will undoubtedly stimulate greater application of nonequilibrium thermodynamics to many important problems in biology.

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Analytical Chemistry

Until recently, gas chromatography was rarely used for the separation and analysis of inorganic systems, mainly because it was thought that there were no suitable and stable volatile compounds of the metallic elements. It has now become obvious that this is not true. For example, the volatile halides of metals can be handled in gas chromatographic apparatus if suitable precautions against hydrolysis are taken. More important, volatile chelate complexes such as acetylacetonates, trifluoroacetylacetonates, and hexafluoroacetylacetonates of the metals have been prepared in a systematic way, and the chelates of different metals have been shown to be easily separable by gas chromatography. Much of the pioneering work in this field was done by Ross W. Moshier and Robert E. Sievers, the authors of this book, **Gas Chromatography of Metal Chelates** (Pergamon, New York, 1965. 171 pp., $5.50).

Their book is a short research monograph intended to present the advantages of the technique and to give sufficient information to enable those who have had no experience with gas chromatography to use the technique for inorganic analysis. The necessary part of the technique of gas chromatography is described in a clear and simple manner. Methods are given for the preparation of volatile chelate complexes, and there are many examples given of analyses and separations using them. In a short final chapter, the authors discuss the scope of gas chromatography as another technique in the general study of coordination compounds, for example in studying stereochemistry, kinetics and equilibria among complexes. The book is well documented, with references to all of the published research papers on the subject up to the middle of 1965. Since the publication date is also 1965, the authors and the publisher deserve credit for producing the book so quickly, and without any signs of carelessness or haste.

I agree with the authors that gas chromatography can play a very useful and a much bigger part in inorganic analysis than hitherto, and the authors present their case well. This book can be recommended to all those interested in inorganic analysis or in the chemistry of inorganic complexes.

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