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Book Reviews

A Revision of Demand Theory. By J. R. Hicks. Oxford: Clarendon Press. 196 pages, illus. 1956. $3.75

IN THIS WORK, Hicks indicates that the demand theory he is revising is that of the first three chapters of *Value and Capital*, published in 1939. This theory of demand is developed in an econometric frame of reference, but follows the previous book in a nonmathematical formulation which will be welcomed by many economists.

Basic theoretical conclusions remain intact under this careful reappraisal, though the development differs to a considerable extent. In the technique of illustrating the preference hypothesis there is a notable change. In *Value and Capital*, Hicks starts with a simple 2-good case and illustrates a given scale of preferences with indifference curves. In his *Revision* he takes an alternative approach, which he regards as having the advantage of clarifying the preference hypothesis itself while avoiding the limitations of the earlier geometric presentation. The alternative method allows more rigorous exposition of demand theory in nonmathematical terms.

The first part of this three-part work—entitled "Foundations"—provides the framework for the sections that follow by dealing with (1) the demand for a single commodity, and (2) the general theory of demand. The logic of ordering receives systematic treatment, as demand theory, based on the preference hypothesis, boils down to an economic application of this logic. The distinction made between "weak" and "strong" ordering has important implications for the development that follows. If a consumer has a definite preference for position A over B, B over C, and so on, we may say that the ordering is strong; on the other hand, if two (or more) positions have equal appeal, the ordering is weak. Samuelson's development of consumption theorems in terms of revealed preference are of the "strong" ordering nature, as contrasted with the "weak" ordering of indifference positions.

The nature of the demand curve is explored by dividing the effect of a price change into the income and substitution effects. In considering the income effect, Hicks employs the Samuelson approach—he calls this method the cost difference. The comparison between this method and that of compensating variation, used in his earlier book, is especially helpful to the reader who is aware of both approaches. The method of compensating variation is employed throughout, especially for the analysis of substitution effects of change in price.

Throughout the book are graphic illustrations of the various concepts of demand curves. These aid greatly in comparing the approaches of cost difference and compensating variation. Hicks considers the demand curve of Marshall as uncompensated for income effects, Friedman notwithstanding. He distinguishes between the type of compensated curve for price declines and increases, and indicates the type of cost difference associated with each.

We usually think of the demand curve as indicating the quantity that consumers will take at given prices, and most theory is oriented to this price-into-quantity approach. Hicks points out that, for the analysis of market demand, it is equally desirable to consider the prices at which a given supply can be sold. Thus, he develops the marginal valuation theory to parallel the usual approach. This is used mainly in his treatment of consumers' surplus, in which he distinguishes between various measures of this value.

Important theorems are developed in regard to substitute commodities. The *first substitution theorem* states that the total substitution effect of any price change, however complex, must always be positive (or zero). The *reciprocity theorem* deals with the reciprocal nature of substitute goods—if A is a substitute for B, B is a substitute for A. For the cross-effects to be of equal magnitude, more restrictive conditions are given. The *second substitution theorem* sets a limit on the size of the cross-effect which is consistent with a given direct effect. Further, attention is directed to the influence of income effects for certain types of

commodities, which complicate the statements that can be made about the relationships among commodities. This is aggravated further when dealing with commodity aggregates.

Hicks does not deal with welfare aspects here; he plans to devote a later book to these. Also he confines his analysis to relationships between current prices and commodities purchased, and does not deal with explanations in terms of deferred or lagged effects of price changes, although he admits the importance of this area of analysis.

To those who find certain mathematical formulations of demand theory difficult to comprehend, the present volume will be useful, though this does not mean that it is easy to read. But the effort involved in reading it will be well repaid.

Gordon King

The Meaning and Validity of Economic Theory: A Historical Approach. By Leo Rogin. Harper & Bros., New York. 684 pages. 1956. $6.50

LEO ROGIN was professor of economics at the University of California until his untimely death 10 years ago. He started as an agricultural economist, but became interested in economic theory and devoted most of his life to that subject. The book under review is a critical history of economic thought in the last 200 years. Unfinished at the author's death, it was prepared for publication by his widow with the assistance of some colleagues and former students.

Rogin's main thesis is that the "objective" meaning of economic theory can be recognized only in connection with the formulation of economic policy. Its corollary is that economic theory is validated only in its practical application. Rogin believed that a historian of economic doctrine must check an economic theory for its truth just as a natural scientist does. But in economics, "where reference is not to a constant external nature but to the ever-changing historical configuration of human affairs, theory that does not orient itself to the requirements of contemporary practice feeds on the bare bones of bygone practical issues and is destined to be both socially reactionary and scientifically sterile."

This hypothesis does not emphasize the theorist himself and his individual background, but rather the institutional and political environment of the time, which provides the "central public issue" to which the new theory is addressed. As the meaning of a new theoretical system first emerges in the "concealed or unconcealed guise of arguments in the realm of social reform," it follows that the evaluation of its validity "involves judgments as to the adequacy of the theoretical articulation in the light of its present aim, and judgments as to the possibility of the aim being realized in given historical circumstances. There can be no question of a uniquely correct theory. Different practical and normative perspectives call for different selection and organization of facts."

This is strong, heady stuff. Whether or not the reader finds it palatable will probably depend upon whether or not he agrees with Rogin's philosophy of economics. The latter is best revealed by another quotation, not from the book this time, but from an earlier article criticizing the life and work of Werner Sombart (who supported National Socialism in his later years):

"There is an element of truth in the aphorism, 'there is no disputing tastes.' Nevertheless, a naturalistic, common-sense view of normative judgments, particularly ethical judgments, will recognize that they are not beyond exploration and criticism. Such a view will reckon with their origins, their acceptance and diffusion and, above all, their implications in the context of human experience. These all imply an appeal to facts, and the latter, particularly, implies criticism in terms of our practical social interests. Such criticism is arrested at the source if we conceive normative judgments to be the offspring of an immaculate conception hatched in a Platonic heaven."[1]

This is no narrow view of the scope of economics. Rogin does not hesitate to criticize the normative judgments of previous thinkers, and his own become evident in the process. This reviewer was a graduate student in Rogin's semi-

[1] "Werner Sombart and the Uses of Transcendentalism." Amer. Econ. Rev., XXXI, 493–511 (Sept. 1941). The quotation is from p. 501.

nars some 20 years ago, and he has considerable sympathy for Rogin's viewpoint and conclusions. Even those readers who disagree are likely to find his arguments a powerful stimulus to their own thinking.

It would be a mistake for this or any other reviewer to try to decide whether Rogin has proved his hypothesis in any absolute sense. He himself would probably not have made any such claim. In the book, he says only that he is exploring a hypothesis or illustrating what he hopes is a fruitful method of approach. Later on, he states that his primary aim is not to provide definitive judgments on past theories, "but rather to suggest criteria for the choice and elaboration of general frames of reference—principles of economics—at the present time."

In other words, if Rogin were alive, his position probably would be that this is the way in which many significant schools of economic theory got their start, that some economic theories have not been particularly significant because they did *not* conform to his hypothesis, and in any case, that this is the way economic theory *should* be developed if it is to make sense in its contemporary historical setting.

Whether or not one accepts Rogin's thesis, it certainly provided Rogin with a useful springboard for criticism. The result is a refreshing contrast to the factual and dry-as-dust histories of economic doctrine. Rogin's work cannot replace these histories because it is too selective in its coverage, but it provides a welcome addition to them, at least on the graduate level.

The book is not without its faults. Rogin's writing style is rather heavyhanded. But the impact of his ideas is usually such as to overcome this handicap, with the result that reading him is often difficult and fascinating at one and the same time.

A second fault, perhaps stemming from the first, is occasional lack of clarity in expression. This arises partly from the fact that Rogin was doing his best to elucidate the obscurities of earlier writers. Partly, however, it is just Rogin. He sometimes failed to make himself clear in seminar. Challenged by his students, as he always was, he could make himself clear, but usually it required some effort, and occasionally he would postpone further explanation until the next session. The results were always worthwhile. It is unfortunate that Rogin did not live to put the book together himself. If he had, the challenge of reviewers in draft form would certainly have stimulated him to the extra effort he needed for lucid expression.

Despite its faults, the book well serves its main purpose—to memorialize the name of a great teacher. This must be an appreciation of a life as well as a review of a book. Intellectual pov and intellectual arrogance often go together. Not so with Rogin. He was genuinely interested in the welfare of his students. Had he been less so, this book might have appeared in his lifetime.

Ernest W. Grove

Experimental Designs. Second Edition. By William G. Cochran and Gertrude M. Cox. John Wiley & Sons, Inc., New York. 611 pages. 1957. $10.25

ENLARGEMENT of the older work, rather than its revision, is the apparent purpose of this publication, as most of the material in the first edition is retained. The first edition has been brought up to date, and enlarged, by including designs developed during recent years.

The book has two new chapters that deal with factorial experiments, besides a half-dozen new sections. One of the new chapters is concerned with fractional replications, the other with methods for approximating the response surface for continuously variable factors and for determining optimum combinations of factor levels. New sections added to previous chapters cover incomplete block designs (balanced and partially balanced), chain-block designs, and designs for isolating residual effects of former experiments. Added also are tables of F and t distributions.

The authors' approach is again nonmathematical. To provide a kit of designs for ready reference rather than to develop facility in planning and analyzing experiments by applications of basic principles is their apparent purpose. As in the earlier edition, the first three chapters of the revised work provide a foundation of theory, which is extended in the later chapters to more

complex designs. Statistical inference, hypothesis testing, and estimation are discussed with respect to design and analysis, as are least squares and analysis of variance and covariance.

The mathematical model of randomized blocks is outlined and the basic assumptions are clearly stated. Methods are given for subdividing the sums of squares for treatments and error and for the computation of standard error of comparisons among treatments, and these methods are conveniently reduced to rules.

Although attention is given to the effects of error in the underlying assumptions, a comprehensive discussion of analysis of variance and its use in estimating variance components are lacking. This omission, however, is consistent with the approach taken by the authors.

Based on the theory established in the first three chapters are a dozen more which deal with these topics: Completely randomized blocks and Latin square designs, factorial experiments, confounding, factorial experiments in fractional replication, split-plot designs, factorial experiments confounded in quasi-Latin squares, response surfaces, balanced and partially balanced incomplete block designs, lattice squares, incomplete Latin squares, and the analysis of the results of a series of experiments. For each of the major designs, a numerical example is completely worked out, and a series of accompanying plans is given, together with a bibliography listing sources of mathematical derivations and research reports of experiments that use the design.

The place of this work in statistical literature was firmly established by the first edition. Its value as a reference for experimenters and as a textbook in applied statistics is widely known. It provides an accessible source of suitable designs for nonspecialists in statistics when the services of a statistician are not available—this has been its main contribution.

This modernized edition should prove even more valuable than its predecessor, and should serve to extend the use of sound statistics in experimentations.

Bruce W. Kelly

Science and Economic Development: New Patterns of Living. By Richard L. Meier. Technology Press of Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York. 266 pages. 1956. $6

IN RECENT YEARS the reading public has been told many times about the world's rapidly growing population, its shrinking resources base, and the inevitability of crisis. Moreover, the rapid gains in the conquest of disease and the control of mortality were shown as adding to the problem, for in major areas of the world they were not being accompanied by reductions in birth rates. Hence disparities resulting from rapid growth were increasing. It has been argued frequently that efforts at economic development in many areas face an impossible task, for any amelioration of the present plight could not be sufficient to offset the demands of a rapidly growing population.

Meier accepts as basic to his investigation that world population will grow to 3–3¾ billions by the year 2000 and will probably continue to increase to something like 5 billion persons. With needs added up on one side of the ledger and the capacity to supply these needs on the other, he attempts to find critical points in the future when specific needs will begin to exceed potential supply. Under present patterns of production and consumption, this date is given at about 1960 for protein foods and some time after 2000 for carbohydrate foods. Supplies of fiber and paper are assumed to be adequate. Outside North America the use of fossil fuel would begin to decline about 2050, long before the anticipated energy needs of the growing population have been met. Energy supplies in North America, however, may last for several centuries. The availability of some common metals will be primarily a function of the availability of energy. For the future, energy-conserving innovations will become more needed than energy-using developments.

Given the necessary development of technics of needed changes in tastes and standards and of social organization, it is held that the earth can probably provide comfort and convenience for upward of 50 billion people. This is not considered a desirable prospect and the means of providing for human welfare under these conditions are far from clear. Particularly difficult is the problem

of getting started on a system of production that can develop the momentum needed to make for improvement of human welfare in the face of initial high rates in the growth of population.

These conclusions are based on an examination of present technology and the possibility of developing new foods and new fuels, with more attention to solar energy than to atomic energy and emphasis on the prospects of reducing the needs for energy without reducing comfort and convenience. There is considerable attention to the new economic and social patterns that would have to be developed, recognizing that the patterns developed in the United States, with its extravagent use of most resources, are not suited to most other parts of the world. The structure of new urban complexes with a high degree of self-sufficiency in food production, and the industrial pattern that might be adapted to such a world are outlined in some detail.

The purpose of such a book is to provide an imaginative outline of a possible course for economic development. In meeting this task, the author has set aside such problems as the specific methods by which the desirable goals might be achieved, and the present imbalance in the world distribution of people, rates of growth and resources. The world is treated as a whole, and though it is recognized that the standards and patterns of the highly industrialized areas cannot be taken over directly to many parts of the world, present differences in levels and rates of development and in rates of capital growth are not considered. The book necessarily leaves more questions unanswered than it attempts to answer. But the approach is grounded in a hard look at the present situation worldwide, and the assumptions concerning technological development are based on what is already known and developed, at least experimentally. The publishers refer to it as a provocative appraisal—and it is that.

The function of such a book should be to get people to take a hard look at some of the assumptions that regularly come into discussions of these problems. This in itself is a worthwhile accomplishment.

Conrad Taeuber

Motivation Research in Advertising and Marketing. By George Horsley Smith. McGraw-Hill Book Co., Inc., New York. 242 pages. $5

BECAUSE IT IS REMARKABLE for its organization and nontechnical presentation of complex psychological research methods which are of growing significance to agricultural economists, attention of readers of this journal is directed to the book—even 3 years after its publication. This reviewer understands that Smith's volume is now considered by many specialists to be *the* authoritative guide to these methods. It is sponsored by the Advertising Research Foundation.

Certainly, the book is not likely to be surpassed for some years as a handbook on "why" research for agricultural economists interested in marketing research. I doubt if another handbook on research methods in *any* area contains so much useful material in so few pages, or is so ably written. The double contribution of excellent descriptions and illustrations plus extensive references to more technical works qualifies this book as required reading in any course in social science research methods.

In terms that we who have had no more than a single course in psychology can understand, the author introduces each topic by reference to the clinical and experimental literature, and then develops the implications for advertising, marketing, and communications. Both his emphasis on continuity with other social sciences and his conclusion that motivation research ". . . is *not* a substitute for regular marketing research, for business judgment, nor for creative inspiration" will strike responsive chords in our fraternity.

Motivation research is person centered, not directly market oriented. Smith prefers the name "why" research because it focuses attention on ". . . the whole battery of inner conditions that play a dynamic part in a person's buying or not buying. . . ." These variables include assumptions; attitudes; sensations, feelings, and images; motives, identification, and empathy; rational and critical processes; habits and conditioned reactions. Knowledge of these help market researchers to increase their capacity to predict actual behavior in a concrete situation.

The author points out that older methods of market research are primarily applicable to ascertaining material that people can discuss more or less freely, and occasionally to material that is rarely discussed (because of deep personal involvement). Then he considers inner conditions or variables of which a person is not aware and cannot discuss, and which are not reached by conventional market research. To delve into these areas, special research tools have been developed by psychologists during the last 50 years. Smith's description of these tools and their adaptations to modern market research is so beautifully done that the reader's learning process is positively painless.

Beginning with principles and procedures of single-person and group interviewing, he leads into the so-called projective techniques used to bypass the personal defenses and to uncover subtler relationships. He pauses now and then to warn his readers of the limitations of these techniques. Here on page 77, to cite one such case, he tells us, "Indirect methods are apt to be most useful when used as part of a survey." And again, two pages over, we are told that, ". . . In short, projective and other disguised tests have a place in psychological marketing research, but they are not the whole show and cannot as a rule carry the entire burden of fact gathering."

Part IV contains the major development of the theme that runs throughout—that motivation research is concerned with specific problems, and that it draws on many sources for solutions to these problems. One chapter tells how other research techniques (psychological ones) fit into the picture, and another deals with interrelations with other methods. The latter stresses the role of motivation research in developing hypotheses, and the need for more familiar survey methods to test them and to interrelate the variables.

The last part of the book, "Getting the Job Done," covers the when, who, and how of motivation research. On the subject of "when," the author writes, ". . . When the quantitative or 'nose-counting' approach is not a sufficiently clear-cut guide for action, then something is needed—something that gets into a new dimension of the problem." Perhaps agricultural economists should read this part first because it points out both (1) our place on the team quarterbacked by a social psychologist, and (2) what kind of a score we can expect from these new methods.

Smith believes that motivation research will pay its way when it provides new leads, clarifies or systematizes knowledge, confirms hunches, gives the "why" behind what is already known, and serves as a negative (or dampening) influence, by detecting weaknesses in proposals which lack adequate psychological insight.

Now, a criticism from a sidewalk superintendent. Smith apparently misuses the term "depth interviewing" to describe what other psychologists call "intensive interviewing." At the 1957 meeting of the American Farm Economics Association, F. A. Kilpatrick described "depth interviewing" as a "psychoanalytic term which refers to an interview conducted for 1 or 2 hours a week over a period of from 2 to 5 years."

Finally, a question: Where and how did George Horsley Smith learn to write so skillfully?

Marguerite C. Burk

Year Book of Labour Statistics 1955. International Labor Office, Geneva. 1955. 455 pages. $5

This is the 15th issue of the Year Book, which the preface indicates, "presents a summary of the principal statistics relating to labor in all parts of the world." Tables and text are in English, French, and Spanish. The 41 tables cover total and economically active population, employment, unemployment, hours of work, wages and labor income, consumer prices, family living, social security, industrial injuries, industrial disputes, and migration. Appendix tables give indexes of industrial production, wholesale prices, and exchange rates. Statistical series are shown annually for the pre-World War II years of 1937–39, and pick up again with annual data from 1948 on. Monthly or quarterly data are given when available for the most recent years and are shown up to June 1955.

The Combined Food Board: A Study in Wartime International Planning. By Eric Roll. Stanford University, Food Research Institute. xiii, 385 pages. 1956. $7.50

ERIC ROLL is well known to American economists as the author of the excellent *History of Economic Thought*, first published in 1938, when he was professor of economics and commerce at the University College of Hull. He is better known to United States food and agriculture officials in World War II as a member of the British Food Mission in Washington, and as Executive Officer and Deputy Member for the United Kingdom side of the Combined Food Board. On the basis of this experience and his distinction as an economist, Roll is a logical selection to write this history of the Board, which is published as the 11th volume in the Food Research Institute Series—"Food, Agriculture, and World War II." Although at present Roll is an Under Secretary in the Ministry of Agriculture, Fisheries, and Food, this study is offered, not as an official account, but as the contribution of an individual scholar.

As he states in his introduction the 11 chapters of the book fall into three parts. The first three are concerned with the origins and establishment of the Combined Food Board. Topics covered include problems of food procurement by the United Kingdom in the United States; the establishment of the British Food Mission in the spring of 1941; informal arrangements for joint action; and finally, the formation of the Combined Food Board in June 1942. These are illuminating chapters, with the narrative moving along nicely.

The next four chapters cover the activities of the Board from about the middle of 1942 to the end of 1944. The first of this group deals with such matters as the staffing of the Board, development of procedures, and the setting up of the committees, particularly the commodity committees, which provided the principal basis for the ultimate recommendations of the Board to the member governments. Changes in organization and personnel that occurred throughout the period are outlined. The most important of these was the addition of Canada in October 1943. Stress is laid on the continued concern of the British with the effectiveness of the United States food organization and the level of representation on the United States side.

Next come chapters on "Allocation in Theory" and "Allocation in Practice." Roll's position is that it was not feasible to establish any very useful set of general principles for allocating supplies. It was necessary to rely on extended discussion, including cross-examination by claimants for the different countries, out of which emerged methods of allocation applicable to the particular case under consideration. Considerable space is given to the study known as the "Consumption Levels Inquiry," which compared the 1943 levels of food consumption in the United States, Canada, and the United Kingdom. He stresses the importance of these agreed-upon basic data as providing a firm underpinning for the discussion of allocations.

The Board's recommendations for international commodity allocations formed the core of its activities. "Allocation in Practice" is devoted to a summary of the work of four of the more important commodity committees; namely, sugar, meat, fats and oils, and cereals. The description of the work of these committees indicates the far-reaching nature of the problems that commanded the attention of the Board. The final chapter in this second group, "External Relations," covers various activities of the Board which cannot be classified as allocation, such as relations with other combined bodies and UNRRA.

The last three chapters in the foregoing group contain much strictly factual material describing actions and procedures. Underlying controversies and the role of individuals recede into the background. All in all, the resultant 175 or so pages make rather slow reading.

The tempo quickens in the five final chapters, which cover the last 18 months of the Board's existence, when emphasis shifted from war needs as such to problems created by allied plans for liberation and to the postwar organization of food and agriculture. Chapter 8, which I regard as the best in the book, covers the food crisis of 1945, the inability of the Combined Food Board to cope with it, and the resultant Tripartite Food Conference (April 1945) which at least served to keep the machinery for international food allocation in operation for the more critical commodities. Fol-

lowing is a chapter on organizational problems that arose as the end of the war came into sight. These involved not only the Combined Food Board but the other Combined Boards as well.

Next comes an account of the Board's allocation activities during the final 12 months of its existence. Special attention is given to cereals, which was becoming the most critical area of food management; inability to cope with it contributed materially to the breakdown of the Combined Food Board. Chapter 11 is largely focused on events in the early part of 1946 which led to the end of the Board and the setting up of the International Emergency Food Council in July of that year.

The last chapter "contains a broad appreciation of the accomplishments of the Board together with an indication of some of the lessons that may be learnt from its history." Roll rates the accomplishments of the Board rather higher than do some other students of food and agriculture in World War II, and lays special stress on the contribution which the experience gathered in the Combined Boards has made to effective intergovernmental organizations in the postwar period.

An appendix contains several items of special interest to students of food and agriculture during World War II. These include a chronology of important events relating to the Board, a roster of top personnel at several stages of the Board's life, a complete list of CBF recommendations, and a number of selected documents. The book is enlivened by three photographs of the Board at various stages of its existence. Incidentally, the individual at the extreme right of the first photograph is *not* Carl Hamilton, as indicated, but Dr. H. B. Boyd.

What can be said about the book as a whole? It is evident that Roll has painstakingly unraveled the tangled skein of the Combined Food Board's activities and skillfully rewoven the main strands into a meaningful pattern. In so doing, he has produced what appears likely to be the standard reference on the Combined Food Board for some time to come. This does not mean that he has resolved all questions concerning the operations and accomplishments of the Board as a wartime agency. This could hardly be expected. The precise accomplishments of most of the war agencies in the United States are still matters of controversy. Persons intimately concerned with the activities of such agencies as the War Production Board, the Board of Economic Warfare, the War Food Administration, and the Office of Price Administration still hold divergent views as to the effectiveness of various programs, the contribution of these programs to the war effort as a whole, and the reasons why some efforts fell short of their mark.

To take just one example, Roll appears to make the effectiveness of the Board largely a function of the organizational ups and downs of the United States food agencies. This, of course, is an important part of the story, but by no means all. The dominant position of the United States as a food supplier contrasted with the relatively small quantitative claims of the British against American supplies certainly helped to create an inherent difference of viewpoint within the Board.

Personally, I am inclined to attribute some of the difficulties to a more fundamental situation, namely, the totally dissimilar position of the United States and the United Kingdom with respect to civilian requirements and supplies. For many civilian goods, United States wartime supplies exceeded prewar levels; hence civilian supplies frequently appeared as large residual items that could be further reduced if military needs demanded. Only a relatively few items became so short that they had to be tightly controlled and allocated with the same severity as munitions. In Britain the reverse was true. An extensive array of civilian goods had to be rationed below prewar levels. Given the shipping situation, the problem of civilian supplies became of the greatest concern, and the connection between civilian supplies and the British war effort was abundantly clear.

To be more specific, a 2- or 3-percent change in food supplies per person in the two countries had a totally different significance in each, so far as the conduct of the war was concerned. This fundamental difference could hardly fail to have unfortunate effects on the joint food-planning effort.

James P. Cavin

The Marketing of Livestock and Meat. By Stewart H. Fowler. The Interstate Printers & Publishers, Inc., Danville, Illinois. 1957. 622 pages

AS THIS BOOK WAS WRITTEN by an animal husbandryman who has had considerable experience in marketing, it is apparently intended primarily for producers, livestock extension specialists, and undergraduates majoring in animal husbandry. Nevertheless, as the first new or revised book on livestock and meat marketing to come forth in 16 years, it will be examined with interest by many livestock and meat-marketing economists. A thorough and up-to-date text in the livestock and meat field has been a pressing need for some time.

Organization of the book, including chapter headings and subheadings, closely parallels the last text by Dowell and Bjorka. But the description of handling methods, operating procedures, and physical facilities for most of the marketing institutions is considerably more detailed. This new book is also more readable and is replete with photographs and advice to the producer. It is more concerned with "how to do" as well as "what is done." But it contains less historical discussion of the economic development of marketing institutions and is considerably less analytical than the older book.

Chapters on the meatpacking industry, market agencies, shrinkage and feeding of livestock, and livestock losses appear to be particularly well done. Three chapters on topics not treated in earlier books in the field are included. One is concerned with preparation of livestock for shipment; another deals with byproducts of the meatpacking industry; and the selling of purebred livestock is discussed in the third.

Documentation follows the style of texts in the basic sciences. In discussing the controversial subject of direct marketing and selling by carcass weight and grade, the author skillfully used the technique of liberal citations. The student is taken on a somewhat nondirective course through the controversies, a course that nevertheless leads toward rather sensible thinking.

This technique becomes more labored in a chapter on seasonality of marketing and prices, where 18 separate references are cited to the point that livestock marketings tend to be concentrated in the fall. Most economists would have been content to go to statistics of the Department of Agriculture on this point, or perhaps to a single publication that would provide the best source for illustrative charts.

In other parts of the book, the author might have been more liberal with both quotation marks and citations. Some researchers may feel a certain strange familiarity with particular passages for which no citations appear.

It seems unfortunate to this reviewer that the author did not seek out an agricultural economist to coauthor his book. Apparently he realized his limitations with respect to demand and consumption economics and price analysis. Sections and chapters of the book dealing with these topics are scanty in coverage and elementary in nature. At some points, economic terms are used improperly. The section in chapter II that deals with the factors affecting demand and the chapter on livestock prices, particularly, are inadequate for a general text on livestock and meat marketing. The chapter entitled, "Determining the Value of Livestock and Meat," actually deals only with some of the factors, mainly grades, yields, and classes of livestock and meat, that affect prices received by producers.

Dynamics of marketing is not adequately appreciated. For if there is one central fact in livestock marketing, it is that marketing institutions, marketing patterns, and marketing practices are constantly changing. The author tends to arrive at generalized conclusions from temporally and spatially heterogenous bits and pieces of evidence without due regard to growth and change in the marketing system.

Some of the most recent and important developments that affect all segments of the livestock and meat industry have taken place at the wholesale and retail levels. Many of these are barely touched upon in the book. The author disposes briefly of wholesale and retail meat distribution in one catchall chapter that contains five additional major subdivisions.

At least three other texts in this field are known to be in preparation. (Several other starts have been abandoned. This is not said to discourage any other budding textbook writers.) No doubt,

this book will perform a useful service and provide a valuable text at academic institutions where livestock marketing is taught in animal husbandry departments. Most teachers who are trained in the discipline of agricultural economics, however, will probably agree that there is room for another text.

Willard F. Williams

The New Revolution in the Cotton Economy. By James H. Street. University of North Carolina Press, Chapel Hill, N. C. 251 pages. 1957. $5

COTTON PRODUCTION is a farm industry that has been late in mechanizing. As Street points out, mechanization of cotton production actually started with the invention of the cotton gin late in the 19th century, but after this invention there was little progress toward the ultimate goal until after World War II. Street analyzes the causes of the lag in mechanization and its social implications from the time of the invention of the cotton gin until the early fifties. His analysis has many social as well as economic implications.

Street begins his analysis by tracing the influence of the cotton gin on the expansion of cotton production through the use of slave labor. He then describes the institutions that developed after the War Between the States to provide for hand labor after the slaves were freed, and shows how these institutions tended to keep cotton production on a hand-labor basis. These included, among others, sharecroppers, credit arrangements, and size of farms. During the depression of the 1930's, Government programs tended to preserve the use of hand labor in production of cotton.

Next, Street traces the development of equipment needed to mechanize cotton production. He points out that, aside from the tractor, mechanized equipment used to produce other crops has not been adequate for cotton production. He traces the rather long history of the attempts to develop mechanical cottonpickers. He then points out that the successful development of the mechanical picker came at a time when new methods of cultivation, such as check rows, were applied to cotton production. Also, new methods of weed control were being developed.

Street then indicates the effect of World War II on the cotton industry and points out the "pull" influences associated with the postwar boom on the movement of farm population away from cotton farms, indicating the stimulus provided for the adoption of mechanized cotton production. At the end of the book he looks into the future, indicating that once mechanization has been adopted, it is difficult to return to the old system of hand labor. Developments in mechanized equipment and techniques are now on the threshold, and he believes that a continuation of the pull factors on farm population will probably cause further mechanization of cotton production.

The book skillfully relates the institutional factors that have affected the development of mechanized cotton production with the technological difficulties of developing adequate equipment and techniques. Students of the cotton industry will find the book interesting and refreshing in its approach. Economists will find it an excellent case study of the development of more efficient production in a specific agricultural industry.

Frank Lowenstein

The World Fertilizer Economy. By Mirko Lamer. Stanford University Press. Stanford, California. 715 pages. 1957. $12.50

PROFESSIONAL WORKERS and general readers concerned with questions of fertilizer technology, production, consumption and trade, will find *The World Fertilizer Economy* a useful reference tool. Much emphasis is placed on these problems as influenced by World War II.

In examining the contents of the different chapters, one is impressed by the large amount of information covering the many aspects of the subject. The book is perhaps better reviewed under several broad topics rather than in chapter order. These topics, with relevant chapter numbers, are

as follows: 1. Basic Information on Fertilizer Production and Use (chapters 1 to 5, 9, and 21); 2. Consumption in Various Countries (chapters 6, 22 to 28); 3. Wartime Problems as Influenced by Organization of the Industry, Trade Practices, Prices, and Changes in Supply and Demand during the War Period (chapters 8, 10 to 20, 29, 30, and 31); 4. Production Potential and Outlook for Consumption (chapters 7 and 32).

The value of the book as a reference and for general reading purposes would have been enhanced had the different chapters been grouped along these lines.

Basic information on fertilizer production and use.—Some basic information is summarized regarding the nature of fertilizers as plant growth stimulants, fertilizer production processes, the influence of environmental factors on response to fertilizer, and the nature of the response function. The chapter on origin and classification of fertilizers outlines the historical development of fertilizer and is based largely on the works of De Suassure, Boussingault, von Liebig, Lawes and Gilbert, and others. This chapter outlines the processes used in the manufacture of different fertilizer materials. Technicians may find a few minor errors in the description of some of the manufacturing processes.

The presentation of the basic considerations concerning yield response to fertilizer represents a valuable addition to the subject, particularly for readers whose experience has not brought them in touch with this aspect of fertilizer economics. An interesting note introduced is the clash of the principle of diminishing marginal productivity with the official Communist line, as reflected in Soviet policy. The author points out, however, that Russian scientists recognize operation of the principle. Lamer also discusses the diminishing returns principle in both "point in time" and longer time terms, including in the latter, consideration of the effect of general improvement in agricultural methods on the whole position of a productivity function.

The chapter on competition among fertilizers is a mixture, which includes the question of economic substitution of nutrients in crop production and the competitive aspects of the industry with respect to production of the different principal plant nutrients. The first of the problems might well have been included in the discussions of yield responses; the second would have been better in a separate chapter that could have followed the chapter in which production processes are discussed.

The comparison of inorganic fertilizers with manures as suppliers of plant nutrients (chapter 21) appears to belong early in the book, where the relative availability of nutrients in fertilizers and manures is discussed.

Consumption of fertilizer in various countries is introduced in chapter 6. Here the subject is discussed in relation to the development of agriculture, population, and other factors. The later chapters that deal with this subject present data on the extent and intensity of use, togther with some discussion of factors that influence use in the different countries. Information on application of fertilizer to different crops is included. Discussion of fertilizer use in the Soviet Union is of particular interest because of the author's familiarity with that country, and the dearth of information regarding the Russian economy. Other countries included in the discussion of fertilizer use are the United States, the British Commonwealth, Germany, Japan, Egypt, and Switzerland.

Wartime problems.—The main purpose of series of some 20 volumes, of which this book is one, as stated in the preface, is "to illuminate the complex aspects of food and agriculture, and World War II. Wartime problems in use of fertilizer are exhaustively treated. International trade in fertilizers is traced through four periods, (1) before World War I, which is characterized as a period of natural monopolies during which natural deposits comprise most of the important sources of inorganic fertilizers; (2) the interwar period, when, after rapid development of new chemical processes, and pressure of fertilizer supplies, world production and trade became united under collective agreements; (3) the World War II period, which was characterized by dissolution of international cartels and individual government controls; and (4) the postwar period, during which a seller's market largely prevailed, at least up to the time the book went to press.

Wartime fertilizer prices are discussed, along with changes in supply and demand during and following World War II, and dissolution of Ger-

man and Japanese national monopolies and international cartels after the war.

The wartime fertilizer pattern, with phosphate supplies mainly in the hands of the Allies, European potash supplies chiefly in the Axis orbit, and the activities of the Combined Food Board in fertilizer allocations, is discussed in detail. About 40 pages are devoted to fertilizer resources in the Soviet Union. Understandably, there is less discussion of wartime management of the fertilizer problem there than in most of the other important countries involved in the war.

Production potential and outlook for consumption.—Chapter 7 treats briefly the potential fertilizer production, based on reserves of phosphate and potash mineral deposits and on industrial capacity for synthetic nitrogen. Chapter 32, Fertilizers in the Future, consists of only about two pages. These two chapters might well have been brought into sequence and expanded, particularly the latter, in order to present a more thorough picture of the probable role of fertilizers in the future.

In résumé, the book is to be commended for the wealth of material it contains, but its organization could have been made more effective. Each chapter is followed by an exhaustive reference list. Many additional details are included in appendix tables.

D. B. Ibach

A World Geography of Forest Resources. Edited for the American Geographical Society by Stephen Haden-Guest, John K. Wright, and Eileen M. Teclaff. Thirty-five contributors. The Ronald Press Co., New York. 1956. 736 pages, illus. $12.50

ANY COLLABORATIVE EFFORT that seeks to treat comprehensively a subject as broad and complex as world forest resources within the confines of a single cover is likely to have shortcomings, and this work is no exception. Yet, despite its deficiencies, the book constitutes a most welcome and valuable addition to forestry literature. It helps to fulfill the need for an up-to-date appraisal of the world's forest resources at a time when the demands for forest goods and services are rapidly expanding, and when political, economic, and technological changes are markedly altering the world pattern of forest development and use.

The approach employed in this study of forest geography is essentially regional. Twenty-five of its 31 chapters, accounting for upward of 500 pages of the text, are devoted to a review of the forest situation in individual regions and countries. Primarily descriptive rather than analytical, they deal with such subjects as forest areas and types, commercial timber species, exports and imports, timber volumes and growth, forest policies and programs, and forest industries. Preceding this regional section are five general chapters that serve as an introduction. They cover, respectively, the importance of forests to man, the forests of the past and present, forest influences, principles and practices of forestry, and the forest-products industries of the world. A concluding chapter summarizes the work, emphasizing primarily the outlook for the world's forests and their chief products.

Taken as a whole, it is the regional section that is the least satisfactory. Prepared by 29 contributors of varying experience and competence, and in the apparent absence of a uniform outline, it suffers from faulty organization and imbalance in subject-matter coverage. The reader finds it difficult, and often impossible, to make comparisons between regions or countries in terms of specific elements of their respective forestry situations.

Although more complete planning in advance relating to the type of material to be included and its order of presentation would have served to improve these chapters substantially, not a small part of their imbalance in coverage is obviously the result of the wide degree of variation that exists among countries in the status of forestry development. This is evidenced by the appraisals presented for the advanced forestry nations of Europe and North America, for instance, which in general are considerably more comprehensive than those offered for most of the industrially underdeveloped areas.

The principal value of this book will perhaps stem from the fact that it brings together a wealth of the most recent data and information available on the world's forest resources and their use. A large part of the statistical and descriptive ma-

terial given in the regional section has previously appeared in printed form, but in such a widespread array of specialized reports, books, bulletins, and the like that it could be accumulated only at the expenditure of much time and effort. The value of the book as a general source is further enhanced by bibliographic references at the end of each chapter and a bibliographical note and botanical index in the appendix.

Educators, research workers, and public officials who require ready access to basic world forestry statistics and information are thus likely to find the book most useful. However, its introductory and concluding chapters should prove of interest to everyone, professional or layman. Prepared by men especially well qualified for the task, they are clearly written and provide a refreshing insight into what forest resources are, how they contribute to the support of man and his activities, and how they have fared under his stewardship.

Charles C. Larson

Selected Recent Research Publications in Agricultural Economics Issued by the United States Department of Agriculture and Cooperatively by the State Colleges [1]

ALLEGRI, T. H., AND HERRICK, J. F., JR. MATERIALS HANDLING IN PUBLIC REFRIGERATED WAREHOUSES. U. S. Dept. Agr. Mktg. Res. Rept. 145, 119 pp., illus.

Report describes food handling in warehouses. It points out how costs of handling foods in many public refrigerated warehouses can be reduced substantially by changing to carefully planned methods and equipment.

BALL, A. G., HEADY, E. O., AND BAUMANN, R. V. ECONOMIC EVALUATION OF USE OF SOIL CONSERVATION AND IMPROVEMENT PRACTICES IN WESTERN IOWA. U. S. Dept. Agr. Tech. Bul. 1162, 91 pp., illus. June 1957. (Iowa Agr. Expt. Sta. cooperating.)

Using three case farms in western Iowa, the writers worked out a crop program and eight livestock programs for each farm for 1952 to 1957, inclusive. It was assumed that prices would remain steady at the 1952 level, that they would decline from the 1952 level to a level of 225 percent of 1910–14 prices by 1958, but would remain steady thereafter. With steady prices, it would take a minimum of 4 years for a soil conservation plan to provide a higher annual net farm income than extension of the present plan. At 1952 prices, it would take a minimum of 7 years for accumulated net farm income under a conservation plan to exceed accumulated net farm income under the present plan.

BECKLER, R. I. A SUMMARY OF SELECTED RECENT STUDIES ON BROILER FINANCING AND CONTRACTING. U. S. Dept. Agr. AMS–183, 16 pp. June 1957.

Many studies of broiler financing and production contracts have been made in parts of the United States in recent years. These studies have been published individually by many research agencies. This report brings them together in summary form. It is limited to a review of selected publications released since 1951.

BREWSTER, J. M., AND CLARK, S. P. CONVERSION OF SMALL HYDRAULIC COTTONSEED OIL MILLS INTO HIGHER OIL-YIELDING MILLS. U. S. Dept. Agr. Mktg. Res. Rept. 187, 73 pp., illus. July 1957.

Report gives findings in detail of the costs and operations of five oil mills of differing sizes. It compares the relative advantages and disadvantages of converting small hydraulic cottonseed oil mills into screw-press or prepress-solvent mills. Changes in equipment and methods required by conversion are described.

BURCH, T. A., AND BUTLER, C. P. ECONOMIC ANALYSIS OF ANNUAL ADJUSTMENTS IN DEVELOPING GRADE A DAIRY IN THE PIEDMONT AREA OF SOUTH CAROLINA. S. C. Agr. Expt. Sta. Bul. 442, 57 pp., illus. March 1957. (In cooperation with Production Economics Research Branch.)

Dairying appears to be a profitable alternative for some of the low-income cotton farms in the Piedmont area. It would take about 7 years, with about the same level of living as in 1954, to liquidate the debts for the additional investment needed. But capital can be accumulated fairly rapidly, and after the 7 years of adjustment, net cash receipts would be about $8,900. Net returns to the operator for his labor and management would be around $7,000 at prices slightly lower than in 1954. Results are based on reorganization of the farming system and on changes in production practices to permit higher yields and more efficient production.

CORTY, F. L. IN COLLABORATION WITH MEMBERS OF THE SOUTHERN REGIONAL DAIRY MARKETING COMMITTEE. THE POSITION OF DAIRYING IN THE SOUTH. A Southern Regional Dairy Marketing Project Report. Southern Coop. Series Bul. 46, 46 pp., illus. September 1956.

Report answers such questions as, "What proportion of all farms (in nine-State area) keep milk cows? How many of these are dairy farms? Is the South now a milk surplus or deficit area?" An analysis of these and other questions sheds light on the position of dairying in the South.

[1] Processed reports are indicated as such. All others are printed. State publications may be obtained from the issuing agencies of the respective States.