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Book Reviews and Notices*

*B. Benjamin and H. W. Haycocks, *The Analysis of Mortality and Other Actuarial Statistics*, pp. 392, Cambridge University Press, London, 1970.

This text is the principal reference in the syllabus for Subject 6 of the Intermediate Examination of the Institute of Actuaries, and it is also used by the Faculty of Actuaries in Scotland. (The Intermediate Examination, leading to Associateship in the Institute, consists of eight papers on seven "Subjects"; Subject 6 covers, broadly, the topics—other than risk theory—included on Part 5 of the Society of Actuaries examinations.) This book (completed by Benjamin after the death in 1967 of Haycocks) is sufficiently broad in its scope that—supplemented by three chapters of a demography text and some readings from important British mortality tables and investigations—it covers the entire scope of the Subject.

Benjamin makes it clear in his preface that much of the material in the book has been drawn or adapted from prior work by other authors, but this book is by no means simply a compilation. The authors have succeeded in bringing to their topics not only a common style but, more important, a common point of view; in fact, the book's most notable virtue (among many) is that it presents discussions of demography, graduation, and construction of tables not so much as separate subjects but rather as different views of the same subject—as different tools whose common purpose is the analysis of actuarial data. By the same token, the various tables and investigations discussed in the book are seen not simply as a catalogue but as examples of this analysis.

The chapters dealing with construction of tables emphasize the application of basic principles to a small number of examples, each of which is worked out in detail with a full explanation. The approach is effective but sometimes wordy; it seemed to me that the verbal explanations of the computations of the exposures, and of the different effects achieved by using different tabulating rules, could have been shortened considerably and with no loss of understanding had more use been made of diagrams and tables.

The chapters in which the authors turn their attention to demographic problems are particularly effective, since they focus on the principles and the common-sense aspects of the subject rather than on such matters as the mechanics of data collection. In the discussion of forecasting, the stress is on the "generation" approach rather than the "calendar year" method used with recent annuity tables in this country. The authors note, however, that the effectiveness of the "generation" method has been reduced with the passage

* Books and other publications noted with an asterisk (*) may be borrowed from the library of the Society of Actuaries under the rules stated in the *Year Book*.

of time and that the results it produces when applied to modern data are not so satisfactory as those exhibited by Derrick in his research forty-five years ago. Here, as elsewhere, the authors caution against precision of method—*any* method—as an end in itself or as proof of the validity of the results obtained. They observe, for example, that "precision in the *method* of extrapolation does not necessarily increase the likelihood that the past trend will be maintained" (authors' italics).

More space is devoted to graduation than to any other topic in the book, and here more than in any other aspect (except for references to particular tables) is the difference between British and American emphasis apparent. Modified osculatory formulas are mentioned only in passing, and Whittaker-Henderson difference-equation formulas are not, as such, mentioned at all. On the other hand, summation formulas receive extensive development and analysis, including discussion of the characteristics of a good many historical examples. Although, with the advent of computers, these formulas are generally applied term by term rather than in summation form, the text shows clearly the value of the summation operators in analyzing the effect which one can expect from a particular formula.

I would judge from this book (and from a glance at a couple of recent examination papers on this Subject) that this portion of the Institute's syllabus is at about the same level of sophistication as the Society's Part 5 syllabus in all topics except graduation, in which considerably more is expected from the British student than from his American counterpart. Although an extensive treatment of summation formulas would probably be out of place in an American syllabus, the kind of analysis which the authors bring to their subject is most welcome. If such material (as well as the kinds of examination questions which it implies) is thought to be beyond the level of the Part 5 student (as perhaps it is), then we ought to consider introducing some material of this sort into the syllabus of one of the more advanced examinations, possibly disguised under some such innocuous title as "The Analysis of Mortality and Other Actuarial Statistics."

The sensibleness of the authors' approach is perhaps best demonstrated in a little chapter captioned, simply, "Selection." It does *not* deal with selection of risks (which is not covered in the book), nor does it deal with select and ultimate tables in any conventional way (this is done elsewhere in the text). It discusses, in six brief pages, the notion that apples must be compared only with other apples and not with oranges or pears. The discussion is—despite its necessary generality—a gem of analytical writing (and I mean *writing;* there is scarcely a mathematical symbol in the chapter). The authors summarize the discussion in part by noting: "One should never accept statistically significant differences in rates without asking the question 'statistically significant of what?' " The book is devoted not only to the techniques of applied mathematics which will help students ferret out the statistically significant differences but also to the techniques of thought which will help to determine just what that significance is, and it should serve the Institute's students well. For American actuaries the book's value is considerably lessened by its understandable stress on British tables and on techniques used more in Britain than here, but it is still well worth reading.

D. J. McCarthy, Jr.

*A. Pedoe, *Life Insurance, Annuities & Pensions* (Canadian Text; 2d ed.), pp. xi, 489, University of Toronto Press, 1970, $12.50.

This book deserves detailed discussion as being unique and for some time likely to remain a single and convenient source of information on life insurance and the operation of the life insurance industry in Canada.

The introduction states the objective of the volume—"to provide a comprehensive narrative of the history, development, status and practice of life insurance, annuities and pensions in Canada. The close relationship is stressed to similar developments in the United States and to a lesser degree to developments in Britain"—and describes those to whom it is primarily addressed as "employees and officials of life insurance companies engaged in the specialized work of administration, accounting, law, medicine, finance and investment, and sales."

To achieve such an objective at this sophisticated level is a prodigious task indeed, but the author has done so—and handsomely. In the circumstances it would indeed be surprising were his success completely uniform throughout, and it seems appropriate to refer to the relative strengths and weaknesses of the book before considering its detailed contents.

When so many aspects of the subject must be considered, detail is of necessity limited; nevertheless, the general effect of the historical description is satisfying. In analyzing almost any current principle or practice, the reader will find himself provided with the historical framework desirable for cogent consideration. There is, however, frequently a somewhat cavalier choice of years for which statistics are provided, so that the irregular time intervals clearly illustrate trends but not so obviously the rate of development. Also, in a volume directed to a specialist audience, the use of linear rather than logarithmic scales for graphs depicting changes in, for example, consumer price and common stock indices is indeed regrettable.

For its coverage of current theory and techniques the volume is admirable, and it is for this part of its content that it is likely to prove of greatest continuing value. From level annual premiums to underwriting, from policy provisions to investments, the book is a mine of lucid, clear exposition of all that is involved in creating a life insurance policy. In fact, while knowledge of past developments establishes a valuable framework, the inclusion of so much historical reference may perhaps be an incubus, just as too elaborate a setting may diminish the radiance of stones; certainly the explanation and analysis of the technical structure outshine much that serves as preamble.

It is in the discussion of practice that the author's personal opinions are most in evidence and that one may most readily take issue with him. He writes as he speaks—graphically and directly, with blacks and whites and few grays. Thus, in describing practices, he either supports or rejects categorically, with little effort to present the reader with a balanced opportunity for choice. This is to be regretted, for some of his strongly held views, definitively expressed, are certainly open to challenge; since the introduction states that this book "should prove of value to those who would wish to continue further with their specialities," one would have expected more willingness to leave some current developments and practices as not yet fully tested rather than as already damned. To the author the long-established traditions are beyond question, so that throughout the book the past success and inevitable destiny of level annual premium guaranteed cash-value life insurance is extolled ad infinitum as a credo. Only a seer should hazard how this will date the volume for future readers.

As to the detailed contents, in the first two chapters the early origins of life insurance are traced from a twelve-month contract effected in 1583, through the founding of the Equitable Assurance Society in Britain in 1762 and the establishment of some of today's leading Canadian and United States life companies in the nineteenth century, to the important industry of today. The history and background of North American legislation and supervision of the industry are also described.

Chapter 3 is devoted to a consideration of life insurance in modern society. The author's personal views are somewhat strongly indicated here, especially in the comparison of the capital created by domestic life insurance with the "complications introduced by the foreign ownership of means of production, industrial plants, mines and oil wells." One would have expected better from so professional an author, just as one looks in vain for some discussion of the real meaning of "savings" compared to the mere monetary accumulations extolled throughout the volume.

Chapters 4–7, dealing with mortality, types of policy, premium calculations, and policy reserves, are admirable and provide as concise and lucid an explanation as any reader can hope to find. Chapter 8 provides, for the most part, a sound refutation of frequent criticisms of the life insurance business, while chapters 9 and 10 deal effectively with company structure and organization.

Chapters 11–14 describe life insurance plans, annuities, and settlement options, while chapter 15 contains a clear presentation of surplus and dividend distributions, in which one can almost hear the author speaking such phrases as "to estimate what the dividends will be forty or fifty years hence is not work for an actuary but for a soothsayer." Chapter 16 relates the structure of the policy contract to insurance legislation.

In chapter 17 the author describes nonforfeiture values, gross premium calculations, asset shares, and other subjects. One particular comment on the incidence of expenses is perhaps defensive and is certainly of dubious validity: "as the whole foundation of level premium life insurance is the distribution of risk over the duration of the policy there is much justification for treating expense in this way also"!

Chapter 18 discusses taxation as it relates to life insurance and pensions, and chapters 19 and 20 relate to sickness and accident benefits as part of the life insurance business.

Chapters 21–24 lead from a further consideration of mortality to selection of risks via underwriting. The general principles are admirably expressed, the description of the operation and functions of various organs of the body being exemplary—rarely has this been achieved so succinctly—but some of the detailed views propounded in the chapter on medical underwriting are, to say the least, not universally accepted. Unfortunately, the author again leaves the impression that his views prevail throughout the industry.

Chapter 25 is concerned with group life business—an able description through which one stumbles over the author's personal opinions. How else to explain the inclusion in principles to be followed in establishing a group plan of the assertion that "every life . . . should be covered without . . . proof of insurability except that of being at work" or "there should be recognition that the plan is . . . no substitute for regular life insurance purchased by the employees as individuals"? Certainly the author appears to frown on association group insurance except in very limited situations, the apologia for this stand being summed up in the following sentence: "The costs of individual life insurance are necessarily high and no plan can be devised which can give the same service as individual life insurance and avoid this cost." Surely a rather omniscient pronouncement, having regard to the cost currently involved in maintaining marketing organizations!

Chapters 26 and 27 cover pension plans and their funding. This is a clear and well-written section, although one would have wished for the absence of such generality as that describing deposit administration funds—"to which the life insurance company credits a rate of interest based on its earnings on its entire portfolio"—which ignores a myriad of variations from this pattern.

Chapter 28, describing government supervision and company statements, is very informative, while chapter 29 on investments is also delightfully simple to read. Chapter 30 explains well the causes of inflation, but the lack of distinction between monetary and real investment is noticeable and mars the discussion on countering inflation.

The volume concludes with descriptive chapters on industrial life insurance, fraternal life insurance, and social insurance/welfare, in which the author avoids all considerations which may appear to have any possible political overtones. Provincial legislation relating to private pension plans is also found here rather than in chapter 26.

In conclusion, one cannot read this book without appreciating the broad knowledge and deep conviction of its author. It is indeed a fine volume, well compiled, and must surely find its place in any library of Canadian life insurance.

D. J. LEAPMAN

*Carl H. Fischer, *Vesting and Termination Provisions in Private Pension Plans*, pp. 39, American Enterprise Institute for Public Policy Research, Washington, 1970, $2.00.

INTRODUCTION

During the past several years private pension plans in the United States have been the object of considerable scrutiny and proposed legislation. Much of this activity has been focused in the areas of fiduciary responsibility. Other areas of concern have been vesting, portability, and the "insuring" of adequate funding.

The Griffin-Trowbridge study published in 1969 reported on the distribution of vesting provisions in private pension plans and the level of funding under these plans. The study prepared by Dr. Fischer probes the relationship of vesting provisions with the asset allocation rules in termination of plan provisions. This study, which was made in mid-1969, was based upon a sample of 320 pension plans whose provisions were obtained from data filed with the Department of Labor as required by the Welfare and Pension Plan Disclosure Act.

The author summarizes the results of the study on page 31:

> In a majority of the plans studied there was little correlation between the conditions for a deferred vested benefit and the conditions for a high priority in the distribution of asset values following plan terminations . . . , in most instances there is no certainty that if a pension plan terminates a participant who had met the requirements for a vested deferred benefit would receive the full value of his vested accrued benefit even though the plan had assets fully equal to the total value of all vested accrued benefits. If the vested participants do not realize this they will have a rude awakening if their pension plan should terminate.

This conclusion pertains to those pension plans where the benefit security ratio is less than 100 per cent. Where the benefit security ratio exceeds 100 per cent, the discrepancy in plan provisions is less relevant. It is probably most traumatic in those instances where a pension plan has fully funded its vested benefits but not all its accrued benefits. In accordance with *Accounting Principles Board Opinion No. 8,* the full funding of vested benefits would be noted in the company's annual statement; yet, if this plan should then terminate, some fully vested terminated employees or active employees who had fulfilled vesting provisions typically would not receive a vested benefit. Of course, there would be some other employees who would receive benefits which they did not expect, because the assets of the plan, in compliance with Internal Revenue Service regulations, have to be allocated in some prescribed manner toward providing benefits for the plan participants.

CONTENT

In this study the findings are frequently summarized for the following categories of pension plans:

Insured versus Trusteed
Contributory versus Noncontributory
Bargained versus Nonbargained
Single Employer versus Multiemployer

Chapter 1 is an introduction and summary of results. Chapter 2 is a discussion of vesting provisions. It includes descriptions of typical vesting provisions, summarizes the reasons for inclusion of the provision in pension plans, and points out that a vesting provision costs something and therefore competes for plan dollars with the other features of the plan. In Fischer's study 93.6 per cent of the plans included had vesting provisions. These plans had roughly the same distribution of vesting provisions as did the plans covered in the Griffin-Trowbridge study.

Chapter 3 describes provisions for termination of pension plans and indicates causes that lead to plan dissolution. The chapter divides termination-of-plan provisions into two classes: pro rata allocation to all participants of the previously unallocated assets and allocation to classes to fund their accrued benefits in order by assigned priorities until the assets are used up. Under the latter method the highest priority class is the current pensioners. Other classes are assigned priority in a manner which may or may not be related to the vested benefit provision. Table 7 (p. 24) shows the distribution of the termination-of-plan provisions. The most common termination-of-plan provision (31 per cent of the plans sampled) gives top priority to pensioners and allocates to other employees by age and service criteria. Ten per cent of the plans studied had vague provisions or no provisions.

Chapter 4 measures the correlation between the vesting provision and the termination-of-plan provision. It points out that there are two types of termination-of-plan provision in which there is potential conflict with vesting provisions if the benefit security ratio is less than 100 per cent. The type 1 termination-of-plan provision provides for a pro rata allocation of assets to all covered employees. Here the vested pensioner will receive the same pro rata share of his accrued benefit as will other employees. The type 2 termination-of-plan provision establishes priority classes that are in conflict with the vested benefit provision. For example, if vesting is based upon years of service and the termination-of-plan priority classes are determined only by attained age, the young vested employee may lose out to the older nonvested employee.

Over 10 per cent of all plans could be classified as type 1, and 68 per cent were of type 2, so that in nearly 80 per cent of all the plans studied the vested pensioner runs the risk of receiving less than he has accrued, if the plan's benefit security ratio is less than 1, even though the vested benefit security ratio exceeds 1.

The appendix indicates the source and construction of the sample of the pension plans studied. The primary source was the Name Index of the looseleaf service of the "Employee Benefit Plan Review Research Reports." A 25 per cent sample was made therefrom.

REVIEWER'S OPINION

The reviewer believes that this study has highlighted an inconsistency of pension plan design which creates a contingency applicable to vested employees that has not been summarized before. The situation may pale before the problems associated with inducing adequate funding, vesting provisions, and fiduciary responsibility; nevertheless, this study indicates a defect in the design of pension plans which in certain situations may lead to unhappy misunderstanding.

Of course, in some instances, the "conflicting" plan provisions may be the intention of the designers of the plan, who may feel that different priorities and allocation of the fund should follow when the plan is terminated as opposed to the priorities regarding employees who happen to terminate while the plan continues. Also, when a plan terminates, it is often possible to amend the termination-of-plan provisions so that the inconsistency with vesting provisions can be relieved. Finally, under the deferred annuity and individual policy funding vehicles the vested benefit of a long-service employee in the initial years of the plan's operation may be illusionary until his past-service annuity benefits are purchased or until the vested cash values of his policies have accumulated over time. Despite these mitigating circumstances, but especially when some public concern and perhaps misunderstanding exist over the state of the private pension plans, it seems that the suggestion for a better-co-ordinated plan design indicated in this informative study would be most reasonable.

HENRY N. WINSLOW

*Howard Raiffa, *Decision Analysis: Introductory Lectures on Choices under Uncertainty*, pp. xxiii, 309, Addison-Wesley, Reading, Mass., 1968, $5.25.

In the past few years actuaries have been exposed to the term "decision theory," used to describe a new branch of the mathematical sciences concerned, in essence, with the problem of rational choice. For actuaries wishing to learn what decision theory is about, this book is excellent. It presupposes no mathematics beyond high-school algebra but does rely on the type of quantitative thinking for which actuaries are well known.

The basic tools in decision analysis are subjective (or Bayesian) probability and utility theory. With these, Raiffa sets out a scheme for organizing and systematizing our thinking when we are faced with making a decision under uncertainty. This book outlines a methodology which is both reasonable and practical.

Chapter 1 introduces the prototype of a decision-making problem using the familiar urn with an unknown proportion of red and black balls. As decision maker, you know that the urn was selected from a population of urns with a known division of urns into two types, Type I and Type II, each with a different but known mix of red and black balls. When asked to guess which of the two types of urns this particular urn is, you have three possible courses of action: to guess that the urn is of Type I, to guess that it is of Type II, and to refuse to play. You also know the payoffs, depending on the type of urn, of each course of action. Before guessing, you may conduct one of several experiments in which, for a certain cost, you may select one or two balls from the unidentified urn or select one ball and, depending on its color, choose or not choose a second. Abstractly, this prototype decision problem is defined by a list of the possible terminal acts (the possible guesses), a list of the states of nature (the two types of urns), a list of the potential experiments, a list of the outcomes of these experiments, and the probabilities of the underlying state of nature (that an urn selected at random will be of a given type). In chapter 2 the author analyzes this problem in detail.

In the subsequent chapters various complicating features of this problem are introduced. Chapter 3, for example, discusses cases in which the monetary payoffs are unknown or the sampling costs are unknown or the experimental outcomes are reported inaccurately. Chapter 4 introduces utility theory to help the decision maker who has an aversion to risk; it also considers nonmonetary payoffs, or intangibles. Chapters 5 and 6 discuss the case of vague probabilities, describe how to use subjective probabilities, and consider whether to introduce them at the start or at the end of the analytic process.

In chapter 7 the author considers very practical questions about the economics of sampling and shows how an individual can scale his judgments about the unknown basic probabilities and how these judgments should be modified after sampling information is available. Chapter 8 discusses the problems of risk-sharing and group decision-making. These areas are of particular interest to actuaries, especially as regards their application to analyzing reinsurance markets.

Chapter 9 considers the art, rather than the science, of decision-making. Here the author touches on practical adjustments to the theory needed to cope with real and complex problems. An interesting example is the application of decision analysis to medical diagnosis and treatment.

In chapter 10 the author gives an interesting discussion of the different schools of probability theory, a general overview of statistics, and some observations on related topics such as games theory and operations research. There is also a short annotated bibliography.

The style of the book is informal throughout, and readers wishing a formal treatment may refer to *Applied Decision Theory* by the same author in collaboration with Robert Schlaifer (noted in Select Current Bibliography, TSA XXI, 179).

Howard Raiffa is Frank P. Ramsey Professor of Managerial Economics (a joint chair in the Business School and Economics Department) and a member of the Graduate School of Public Administration at Harvard University. He was a principal speaker at the 1969 Actuarial Research Conference in Boston sponsored, in part, by the Society of Actuaries Committee on Research.

PAUL MARKHAM KAHN

*Hans Bühlmann, *Mathematical Methods in Risk Theory,* pp. xii, 210, Springer-Verlag, New York, Heidelberg, Berlin, 1970.

Dr. Bühlmann recently left the Swiss Reinsurance Company to take the chair in actuarial mathematics at the Federal Institute of Technology in Zurich. He has chosen to make available his treatise, Volume 172 of the famous Springer series "Die Grundlehren der mathematischen Wissenschaften," in English to secure a wider audience, a decision the actuaries on this side of the Atlantic must surely applaud.

This latest addition to the literature of risk theory is a masterful work of synthesizing many different strands of recent actuarial research into a comprehensive and beautifully designed whole. In this field the last forty years have seen major developments, particularly in Europe, based on new ideas in probability theory and mathematical economics. The bringing together of these ideas to solve the technical problems of all branches of insurance is the main thrust of the present book. Its concern is ultimately with the operational problems of an insurance company. This development has been stimulated in large measure by problems in nonlife insurance, and it will probably see its most vital flowering in this area. Life actuaries are increasingly concerned with casualty-type questions, however, particularly as regards guarantees in equity-linked products, and there is much here of importance to them.

The book is in six chapters and two parts. Bühlmann derives in Part I the theoretical model of an insurance enterprise and in Part II the operational theory which flows from it. Chapter 1 is a summary of as much probability theory as is required for the rest of the book.

In chapter 2 Bühlmann describes the risk processes by analyzing its two components: the claim-number process and the accumulated-claim process; the first concerns the frequency of claims and the second the amount of these claims. He gives a sophisticated analysis of the concept of operational time. He presents the basic claim process in a framework not requiring the traditional independence assumption, often criticized as unrealistic.

Chapter 3, "The Risk in the Collective," introduces the idea of a "collective of risk," by which is meant a set of risks each of which is associated with a parameter describing its characteristic quality. The author imposes on this collective a structure function which furnishes the probability that a risk taken randomly from the collective belongs to a particular subset. He introduces this idea in order to study nonhomogeneous risk situations because he feels that the traditional models based on homogeneity of risks are not practical.

Chapter 4, "Premium Calculations," sets out four principles of premium calculation: the expected value, the standard deviation, the variance, and the zero utility. The principle of expected value is the traditional one of life insurance, in which the premium is equal to the expected value of claims plus a loading proportional to the expected value. In the standard deviation and variance principles, the premium is the expected value loaded by a percentage of the standard deviation and variance, respectively. Under the fourth principle, the premium is such that the expected utility of the excess of premiums over claims is equal to the utility of zero. Bühlmann strongly favors the variance principle and applies it in a very interesting and practical section on credibility premiums.

In chapter 5, "Retention and Reserves," Bühlmann discusses the relative and absolute retention limits for both proportional and nonproportional reinsurance. In the section on relative retention he gives a method of de Finetti from a 1940 Italian paper. Although these ideas appear to be of great use and are known widely in Europe, we are indebted to Bühlmann for making them available in English.

In many respects chapter 6, "The Insurance Carrier's Stability Criteria," is the heart of the book. Bühlmann introduces the three decision variables which can be manipulated to achieve certain operational results: the loading level, the retention level, and the amount of initial free reserves. He sets forth three different stability criteria or rules which allow management to define an optimum policy in terms of the three decision variables. These stability criteria are the probability of ruin, due to Lundberg and Cramér; the dividend policy, due to de Finetti; and the utility criterion, due originally to von Neumann and Morgenstern but known in actuarial literature through Borch. In this chapter Bühlmann summarizes many of the results of ruin theory and considers different management strategies in terms of these three stability criteria.

Bühlmann brings to this treatise insight and style. He has written a superb book on the mathematics of insurance. It must be allowed, however, that a student approaching it with any degree of confidence must have the high mathematical skills required to study it. Although Bühlmann summarizes the necessary elements from the theories of probability and random processes, the reader to whom these ideas are new may find the rest of the book rough going. Elegant it is; simple it is not. There remains a need for a translation from theory to practice if the ideas in this book are to enter the actuary's kit.

Inevitably this book must be compared with the recent ones on risk theory by Seal and by Beard, Pentikäinen, and Pesonen, reviewed in the *Transactions*, Volume XXI. Seal's book is an erudite survey of the literature on risk theory; the book of Beard *et al.* is a fairly accessible introduction. Bühlmann's book is less of a bibliographic excursion than Seal's but is no less sophisticated. It is certainly more demanding than Beard's. The author points out that he includes no descriptions of statistical estimation techniques helpful in measuring the parameters which occur in the models because these techniques are touched on in the other books. In this reviewer's opinion there is gold in Bühlmann's book, but it does not lie on the surface.

PAUL MARKHAM KAHN

Michael E. Schiltz, *Public Attitudes toward Social Security, 1935–1965,* Office of Research and Statistics, Social Security Administration, Washington, November 1970, $1.00.

This book analyzes and summarizes the results of several public opinion polls pertaining to social security. These polls were conducted by nationally known polling organizations during the period 1935–65, although practically all surveys pertaining to social security proper (OASI) took place more than twenty years ago. The study was conducted by the National Opinion Research Center under a special grant from the Social Security Administration, and the author of the book was associated with the NORC at the time the study began.

The findings of the study are hardly startling, since strong popular support for some form of "old age pensions" could have been expected from a priori considerations. There are, however, certain findings which could not have been anticipated. Among these are (1) the small difference in attitudes toward social security by social class, sex, or age and (2) the much weaker support for unemployment compensation than for old age pensions.

Public attitudes toward social security are no less important today than they have been in the past. The author tells us that survey research on matters as complex as social security ought to be approached with great caution, and the results of such surveys must be carefully analyzed before any conclusions are drawn from them. This is where the contemporary significance of the book lies. New surveys on current issues in social security (expansion of the system, socialized medicine, government subsidies, actuarial soundness, and the like) will have to be quite different from the old ones before great credibility can be attached to their findings.

In discussing the "vicissitudes of survey research," the author acknowledges that it is "quite reasonable to be skeptical of a method that purports to represent accurately the opinions of 100 million adults by the sampling of 3,000 representative cases." He then goes on to say that, even if the statistical techniques used could assure representativeness, there are still two other problems which cause great difficulties. These are (1) the problem of truth and consistency between the responses and the actual feelings and (2) the complexity of the matters covered by the survey and the strong likelihood that the respondents had no clear understanding of what was involved.

The book is well written and should be easily understandable to persons with little or no background in social security and/or problems of survey research. The discussion of the shortcomings of public polls is certainly a matter of general interest; the remainder of the book would be of interest mainly to students of social security and perhaps also to persons charged with the responsibility of making decisions in that area.

A. M. NIESSEN

Harry E. Blagden, F.S.A., *Early Retirement Benefits—Panacea, Purgatory or Palliative,* 1970. Monograph available through the Council on Employee Benefits.

This monograph undertakes the subject of early retirement in its entirety and presents a great deal of material regarding plan provisions, chronological histories, and employer experiences that is simply not available elsewhere. The monograph was prepared through the sponsorship of the Council on Employee Benefits, and many members of the council contributed factual information or comments to the author on behalf of their companies and their plans that could not have been obtained by any individual researcher. While the scope of subject matter and the size of the project were ambitious, the end result is an excellent coverage of the many currently pressing problems in the early retirement area. The workmanship was painstaking and careful, and the final product represents a significant contribution to the literature or pension plans.

Chapter 1 goes into basic considerations with respect to why pension benefits should be provided at early retirement and compares various alternatives, such as changes of work assignments, from the employer's point of view, the employee's, and that of a trade union.

Chapter 2 deals with the considerations an employer would take into account in the determination of the appropriate amounts of benefit to provide and the various formulas that can be devised to develop these amounts. Sample factors are shown on the basis of actuarial equivalents and simplified percentage reductions. A number of benefit illustrations based on specific pay histories are then included. The matter of disability retirement and its relation to the area of early retirement is explored in some detail, including the problems of definitions of disability, rehabilitation, and recovery and temporary and long-term disability benefits outside the pension plan.

Chapter 3 covers other benefits included in the fringe-benefit program and how to handle them for employees who retire early.

Chapter 4 goes into cost considerations. Here the author recommends that the cost of early retirement benefits should be compared with the actuarial reserve that would have been held for the employee's account had he remained an active employee, on the assumptions that there are no terminations of service following qualification for early retirement and that the employee will retire at normal retirement date, as based on an interest rate that reasonably reflects then-current conditions, up-to-date mortality, realistic salary-scale factors, and a level premium method of funding. It is on this latter point that a number of actuaries may take issue and suggest that, instead, a comparison of the value of the immediate early retirement benefit with the value of the vested normal retirement benefit is the more proper comparison, since it is independent of funding methods. Certainly it is difficult to justify the ascribing of no cost to the decision to grant greater than actuarially equivalent benefits at early retirement solely on the grounds that conservative funding has put sufficient extra money into the pension fund that more is not required.

Chapter 4 includes extensive tables of salary-scale factors, active life reserves, accrued benefits under various plans, and the amount and value of various early retirement benefits, together with the costs developed on the basis proposed by the author. Following these tables, the author takes pains to note that, in considering alternative early retirement provisions, "it is not enough to calculate the cost of individual retirements by the methods discussed. It is necessary also to estimate the extent to which early retirement will be availed of." While it is no doubt true that the actuary is not calculating but rather is guessing as to the likely effects of early retirement changes, by the same token there is no one better qualified to make such guesses, and management, in its consideration of the various alternatives, must have some indication of the possible costs in order to reach a logical decision. This matter of utilization is not of mere theoretical interest, but rather may constitute 50–80 per cent of the cost increase reported to management for a particular early retirement change. Chapter 4 ends with various model-office developments and cost calculations that will be of particular interest and value to actuaries.

Chapter 5 goes into various outside constraints on early retirement benefits, such as Internal Revenue Service requirements, restrictions upon discrimination either for highly compensated employees or because of sex, the specific impact of early retirement benefits on IRS integration requirements, other federal government restraints, and the requirements of various state laws. The possibility of providing benefits outside the qualified retirement plan is also explored.

Chapter 6 cites various other studies and offers commentary on advance preparation for early retirement, such as employee counseling; on postretirement employment; on other activities of the retired employee; and on the special situations likely to exist in various countries or with special employers.

The appendixes include the plan provisions of three major pension programs, examples of prejudicial employment clauses, excerpts from long-term disability plan provisions, a clause covering "restoration of retired employees to service," and the chronology of early retirement benefits in half-a-dozen or so companies. The appendixes also include a brief summary of the University of Michigan's Study of Early Retirement and the University of Oregon's Survey of Early Retirement Policies. The text closes with a brief bibliography.

It would be misleading to indicate that this monograph on early retirement reaches conclusions in every area that every actuary can agree with. In a number of respects, individual actuaries may take exception to some of the conclusions drawn or to the point of emphasis. In the final analysis, however, the monograph has been carefully prepared by an outstanding actuary who has devoted his career to the retirement field and who has now made yet another valuable contribution to the literature. Even Sir Francis Bacon would hold that, at this stage, Harry Blagden is no longer a debtor to his profession but rather has truly been a help and ornament thereto.

PAUL H. JACKSON

Mark R. Greene, H. Charles Pyron, U. Vincent Manion, and Howard Winklevoss, *Early Retirement: A Survey of Company Policies and Retirees' Experiences*, pp. 89, Graduate School of Management and Business, University of Oregon, Eugene, 1969.

This study, conducted with the financial support of the United States Department of Health, Education, and Welfare, attempts to establish on a nationwide basis what the company policies and pension plan options are in relation to early retirement and how the early retirees have fared in retirement.

The first objective of the research related to corporate practices and benefit provisions, and survey questionnaires were sent to a stratified, random sample of six hundred companies. The objective was to give a nationwide overview of company policies concerning early retirement, specific pension plan provisions, and the actual incidence of early retirement relative to retirement at normal age. The survey found early retirement to be quite extensive, with almost one-half of all retirees retiring before mandatory retirement age. The majority of companies reported significant improvement in their early retirement provisions in the last ten years.

The study found that the minimum age for early retirement is most typically age 55 (67 per cent), with age 60 (21 per cent) a distant second, but, despite the fact the survey was taken in 1968, 6 per cent of the companies reported that retirement was permitted as early as age 50. Presumably, this percentage will increase as a result of the "30-and-out" benefits recently agreed to by the auto industry.

The study revealed that most companies neither encourage nor discourage early retirement, although more than half offer some sort of financial incentive in the form of a benefit greater than the actuarial equivalent or a temporary social security makeup benefit. Of the companies which have early retirement provisions, about half were found to impose some type of restriction on the re-employment of early retirees, the most prevalent being a restriction on the right to re-employment by the retiree's company. The survey disclosed that less than half the companies had no restriction whatever against re-employment, and the authors were surprised by this, since it seemed to indicate that the over-all economic policy issue of removing the older employee from the work force was not a major consideration. Equally surprising was the fact that only 36 per cent of the companies had any re-employment restrictions on their salaried employees against being rehired by competitors. The authors thus speculated that the major reasons for companies instituting early retirement must have been either as something expected by the employee or seen as a reward for the employee, or as a means of eliminating older employees from their own companies' work forces.

As the early retirement option age decreases from 62 to 55 and possibly eventually to 48 or perhaps even lower, it would be surprising if this matter of re-employment restriction were not to become of far greater importance than it appears to be currently. One of the primary conclusions reached in this study was that

> with the surprisingly limited number of companies that prohibit the retiring employee's re-employment in another organization, this growing trend toward early retirement may simply be a wise economic decision for the older employee. In other words, not only is he able to draw retirement benefits from his former employer, but he is able to secure employment and additional income from a new employer, so that his total income after early retirement is significantly greater than it would have been had he continued in the same company. This is probably compounded by the often-reported observation of the older employee that beyond the age of 50–55, he is no longer considered for either advancement or for meaningful pay increases. Thus, for the older employee, taking the risk of retiring early and seeking re-employment in another firm may be one way of compensating for his lack of promotion opportunities with a former organization.

The survey of companies also revealed great concern and interest on the part of company executives regarding these early retirement issues.

The second major portion of the study was a survey of over two thousand early retirees, intended to investigate their characteristics in terms of financial, health, and social aspects; work-leisure attitudes and activities; the nature of their retirement decision (voluntary or involuntary); and attitudes and experiences with regard to preretirement planning and counseling. The study presents the results of this survey, with the individual responses tabulated and presented in summary form in the text and in extensive detail in various tables appended thereto.

The conclusion reached by the study is that there is a definite emerging trend toward earlier retirement. Most of the companies provide the option, and more employees are electing the option. The majority of companies do not encourage or discourage the employee in his decision, and few companies use the provision as a means of work-force control. Company managers are concerned about the short-range effects of early retirement on the firm and its work force, as well as the long-range effects upon the economy.

The appendixes contain samples of the questionnaires sent to companies and to the early retirees, along with the summarized responses question by question. Appendix H consists of a review of the literature on early retirement, which, together with the appended bibliography, provides a thorough overview of current research into the matter of early retirement. The early retirement provisions in most major union pattern plans are also included in this appendix, along with commentary as to the degree of utilization found in various industries.

The University of Oregon study is both timely and thorough. No doubt it will be followed up in future years with further studies. The actuary faced with the problem of assessing the likelihood of early retirement under various conditions will find the current study most useful.

PAUL H. JACKSON

*Dan M. McGill, *Guaranty Fund for Private Pension Obligations*, pp. 190, Richard D. Irwin, Inc., Homewood, Ill., 1970.

This book presents a thorough discussion of the thorniest of the proposals for pension "reform" legislation. It is an expanded version of a paper prepared by the author in 1967 for the Joint Economic Committee of the United States Congress, one of many responses to a paper published by Dr. Nelson McClung, then a staff member of that committee. Dr. McGill did his customary painstaking and competent job in preparing the original monograph, and the book is of the same caliber.

The author first discusses the nature of the obligations undertaken by an employer who establishes a pension plan as being either to set aside funds of specified amount or to provide benefits as defined by the pension plan. If the employer's obligation is defined in terms of contributions, the employer is deemed to have completely fulfilled his obligations to the plan after these contributions have been made.

In the second type of plan, where the commitment is in the form of defined benefits, there is the hazard that accrued benefits may not be paid in the event of plan termination. The resulting loss of expected benefits can be of dramatic proportions, even where funding has proceeded on a conservative basis. It is this problem that has given rise to some pressures for the establishment of a guarantee fund for pension obligations.

McGill considers a pension guarantee fund to be essentially an insurance arrangement and discusses a set of criteria to be met for the arrangement to succeed. According to his tests, there must be:

1. A large number of homogeneous risks
2. An objective determination of the occurrence of a loss and the amount of the loss
3. A random occurrence of loss among the exposed risks (or at least a definition of benefits such that the occurrence of the loss is less advantageous financially than the nonoccurrence of the loss)
4. A low probability of loss
5. An amount of loss significant enough to be a financial burden
6. A hazard not capable of producing catastrophic loss to the insuring agency

The author examines relevant precedents, first in the United States and then in Sweden and Finland. He finds that analogies between deposit insurance provided to banks by the Federal Deposit Insurance Corporation and a pension guarantee program are largely invalid. The FDIC insures a given number of dollars that are in existence and currently available to the depositor. A pension guarantee fund would insure a promise to some future benefits, the right to which is contingent on survival to a specified age. The FDIC insures existing assets against loss, while a pension guarantee program would provide protection against anticipated assets failing to materialize. Other state and federal guarantee programs in the field of mortgage insurance, automobile insurance, and workmen's compensation have some attributes in common with a pension guarantee fund.

In the field of private insurance, the closest parallels are found in performance bonds and in insurance indemnifying business firms for bad-debt losses above a level considered normal for the business involved. Under the performance bond, the insurer may move against the defaulting party to recover the amount of the loss payment—a principle that some people have suggested should be incorporated in any pension benefit guarantee program.

A pension guarantee program was established in Sweden in 1960, and a similar program was established in Finland in 1962. The Swedish program was established through negotiations between labor unions and an employers' association in response to pressures for a supplement for hourly workers to the national pension plan, which was established in 1913. Shortly after the national pension plan was established, employers had set up an insurance company to write pension plans covering salaried employees only. The 1960 agreement required employers to provide additional pensions to hourly employees. These pension benefits could be purchased from the insurance company providing pensions for salaried employees. Alternatively, the additional pensions for hourly employees could be provided on a pay-as-you-go basis, if the employer (1) sets up a proper liability on his balance sheet; (2) registers the account with a central registration agency; and (3) obtains insurance from a mutual credit insurance company established by the employers' association. This credit insurance is rather carefully underwritten, and firms that are too small or too unstable may not adopt the pay-as-you-go alternative.

The plan adopted in Finland is roughly similar to the Swedish plan. However, in Finland the employer can provide required pension benefits through an insurance company, by establishing a trust, or by participating in a pooled pension fund. If an insurance contract is purchased, the employer may borrow back the premium through an interest-bearing loan repayable in equal instalments over twenty years (or faster). To obtain such loans, the employer must secure credit insurance from a company established by the law to provide such insurance and to perform other functions, including registration of the plan. The credit insurance company also insures the difference between the actuarial values of accrued benefits and assets in a trusted pension fund. The credit insurance company must accept all applicants but varies the premium charged to reflect the risk involved.

Although both plans operate in very different economic and political environments from the United States—and in countries with much smaller populations—the author feels that their experience is worthy of study.

The most useful section of the book for people concerned with the possibility of establishing a pension guarantee program in the United States is the discussion of issues to be resolved. The author discussed the possibilities of establishing a government pension guarantee fund, a private pension agency specially created for the purpose, or some combination of the two approaches.

The difficulty of defining the event to be insured against is discussed. From the viewpoint of an individual employee, any plan termination resulting in loss of benefits is as disastrous as any other. However, to make a pension benefit guarantee fund workable, it seems clear that some types of pension plan terminations should not be permitted to result in a claim. The author suggests that the problem could be simplified by making the employer legally responsible for the cost of benefits covered by the guarantee. The guarantee fund would then be faced with a claim only if a pension plan is terminated and the employer or successor corporation does not have assets sufficient to meet his obligations. This approach might make the establishment of pension plans less attractive to employers.

McGill suggests two alternative methods of defining the obligation of the guarantee fund. Either ultimate payment of guaranteed benefits could be assured, or the liability of the guarantee fund could be limited to completion of the employer's funding program for covered benefits. Neither approach is without disadvantages.

In discussing the question whether all pension plans should be covered by a guarantee program, the author concludes that the answer must be yes. Otherwise, antiselection might make the costs of the program unmanageable. Worse, companies in unstable financial situations might elect to stay outside the program, with resulting losses of pension benefits by employees.

After discussing a number of other issues, the author develops a minimum program that might be workable—"without taking a position for or against the proposition." The minimum program would be administered by a federal agency with a pool of private insurers underwriting the guaranteed benefits of terminated pension plans. The guarantee would be limited to complete plan terminations where the firm goes out of business. In the case of sale or merger, the surviving company would be required to assume accrued pension obligations, to the extent that such obligations were guaranteed. A funding schedule would have to be met, and all vested benefits would be guaranteed (up to $500 per month for an individual employee). All pension plans that wished to "qualify" under IRS regulations would have to participate. The program would be financed by annual premiums levied on the basis of the unfunded accrued liability for guaranteed benefits. Some of these ideas have been paralleled in bills introduced in Congress.

A fairly lengthy set of appendixes is included, containing excerpts from some of the bills providing for a pension benefit guarantee program introduced by Senators Hartke, Javits, and Yarborough. Also included are statements made by representatives of labor and by representatives of employers, either at Congressional hearings or in published papers, and excerpts from statements made by members of Congress and administration officials.

The book is a relatively short one, and there are aspects of many of the problems discussed by the author which a reader might wish to consider at more length. However, the author has certainly succeeded in fulfilling his intention, which was, "to clarify the contemporary confusion over the definition of the event insured against and the obligation that would be undertaken by the guaranty institution."

RICHARD V. MINCK

Richard E. Barfield, *The Automobile Worker and Retirement: A Second Look,* pp. 56, Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor, 1970.

This paper reports the results of a resurvey of auto workers conducted in late 1969 to early 1970 as a continuation of the Survey Research Center's study of decision-making on early retirement (see review of *Early Retirement: The Decision and the Experience,* in *TSA,* XXII, 57).

The chief findings from this second look were that most auto workers who were planning early retirement actually did retire early, that few of the retired auto workers returned to work or regretted their decision to retire, and that most auto workers are satisfied with the retirement experience. Early retirees who had passed age 65 and thus lost their early retirement supplement were not significantly less satisfied than those younger retirees who still received the full supplemental allowance.

The 1969–70 resurvey contacted 943 auto workers who had been included in the 1967 survey. Of those who were retired in 1967, this resurvey uncovered only two persons who had, apparently for financial reasons, decided to forgo retirement and return to work. While the number would probably be small in any event, considerable underreporting could be expected in this area because of the forfeiture of supplemental allowance benefits when earnings exceed the limits permitted for receipt of social security benefits.

The 1967 survey noted a "threshold" or breaking point at the $4,000 level in both the national and auto workers samples—that is, where total expected retirement income including social security fell short of $4,000, early retirements were restricted to more or less involuntary cases arising out of factors such as poor health and geographic moves. The 1969–70 resurvey indicates that this "threshold" or breaking point has moved up to $5,000.

Satisfaction with retirement continues at a high level among auto workers, with 67 per cent satisfied with retirement, 19 per cent reporting mixed feelings, and only 12 per cent reporting dissatisfaction, with about half the latter group pointing directly to health problems as the primary cause of their dissatisfaction. There has been little dissatisfaction with the cessation of the supplemental allowance at age 65, and the resurvey ascertained that almost all the early retirees realized that the supplemental allowance would end when they became 65. The 1969–70 resurvey reveals that about 90 per cent of all retirees had elected to receive social security benefits before age 65, despite the fact that at the time of original negotiations it was expected that the workers would elect to withdraw unreduced OASDI benefits at age 65 in order to replace the supplemental allowance ceasing at that time, so that the workers could look forward to an approximately constant income stream from the time of early retirement.

The paper notes that special conditions may have obtained in the auto industry which have contributed both to the response to the availability of the early retirement option and to the widespread feeling of satisfaction at leaving the job. Cited are problems that have arisen recently from intergenerational and interracial conflict, which may have induced some older workers to retire who might otherwise have continued to work. On the other hand, the paper concludes that the expression of satisfaction in retirement on the part of most workers cannot be ascribed primarily to simple relief at having escaped a bad situation but rather that, for many people, the satisfactions of a life free from the demands of work are both pervasive and abiding.

PAUL H. JACKSON

U.S. Department of Labor, *The Pre-retirement Years,* Manpower Monograph No. 15, Manpower Administration, U.S. Department of Labor, Washington, 1970.

This report was prepared by the Center for Human Resource Research of the Ohio State University on behalf of the Manpower Administration, United States Department of Labor. Volume I presents the description of the research design and conceptual framework, together with the summarized results of the 1966 survey, including demographic and economic characteristics, variations in labor market participation, incidence of unemployment, mobility and job adjustment, the propensity to retire, and work attitudes. The entire study is contemplated as a five-year longitudinal study of the labor market experience of men 45–59 years of age, "The Pre-retirement Years." Similar studies are under way regarding the labor market experience of women aged 30–44, young men aged 14–24, and young women aged 14–24.

The study concentrates on the special problems of older men as reflected in the longer-than-average duration of their unemployment when it occurs and in the continuous decrease in their annual income after they pass their mid-forties. The general objective of the study was to uncover the complex of economic, social, and psychological factors that are associated with successful adaptation by individuals to the labor market. A good deal of the material consists of demographic factors and attitude analyses relating to employment among the surveyed group. Some of the statistical results will provide valuable source material for actuaries—for example, length of service in current job, proportion having tenure of ten years or more in current job by selected employment characteristics, and proportion with five-year tenure.

Chapter 6 covers the propensity to retire and explores the variations in an attitudinal index purporting to measure an individual's "propensity" to retire with various factors. The chapter covers the transition from work to retirement, the extent of pension coverage, the prevalence of requirements for compulsory retirement at some age, generally 65, and the correlation of the "propensity"-to-retire index with the following factors: age, current occupation, race, pension eligibility, family net assets, rate of pay, length of service, class of worker, work attitudes, health, number of dependents, and nationality. While essentially factual in nature and merely presenting the results of the survey, questions are raised such as "Should retirement be compulsory or be based on an individual's functional capacity?" and "To what extent does technology diminish the employability of older workers and encourage early retirement?"

It was found that nearly two-thirds of all men in the age cohort 45–59 were eligible for some type of pension benefit other than social security or railroad retirement, with almost half these men facing compulsory retirement. In addition to interracial differences, a high propensity to retire was correlated positively with greater pension eligibility, higher family assets, longer service, poor health, and few dependents. There is also evidence that blue-collar workers and government employees have higher propensities to retire than do white-collar and private-sector employees, respectively.

Volume II of this longitudinal study presents its extension one year and summarizes some of the findings of the second round of interviews with the original 45–59 cohort. This second round of interviews was conducted in mid-1967, and the primary purpose was to discover the magnitude and pattern of change occurring in the labor market status of the survey group during the twelve-month period between the first and second surveys. More intensive analysis of the data is to be made at a later date. This volume presents changes in selected personal characteristics over the year, such as health and physical condition, training, marital status, and family income in relation to the poverty line; changes in labor and employment status correlated with age, occupation, marital status, and health; variations in rates of interfirm movement and geographic movement by occupation, length of service, and job attitude; and the roles of health and racial differences.

PAUL H. JACKSON

Bankers Trust Company, *1970 Study of Industrial Retirement Plans*, pp. 313, Bankers Trust Company, New York, N.Y., 1970.

This is the ninth in a series of studies of industrial retirement plans to be completed by the Bankers Trust Company. Eight previous editions covered retirement plan practices from 1943 through mid-1965. The current study outlines the important provisions of long-established pension plans as well as of certain pension plans adopted since June, 1965, the date of the latest previous study. Amendments to established pension plans made within the 1965–70 period are summarized, and the key provisions of plans are compared with those of the prior study in a detailed statistical analysis.

The 1970 study included plans covering approximately 7,800,000 employees, about one-fourth of all employees currently covered by pension plans of employers in private industry. The plans have been broken down into 71 different industry classifications, and the plans of 201 companies, ranging from as few as two hundred employees to several hundred thousand, are covered.

The first portion of the study covers trends in retirement plans as to eligibility requirements, employee contributions, vesting, early retirement, disability retirement, preretirement death benefits, postretirement death benefits, age and service requirements, benefits at normal retirement, minimum and maximum pensions, and the method of funding.

Section 2 of the study covers amendments to retirement plans in the years 1965–70, and considerable detail is given by company as to the specific changes made.

Section 3 includes a tabulation of certain provisions of the plans of the 201 companies in the study, providing easy reference to such items as year established, method of funding, age and service requirements, contributions, qualifications for vesting, benefit provisions at normal retirement, early retirement, disability retirement and death, and the approximate pension, including primary social security based on thirty years' future service, as a percentage of average annual compensation.

This study, like the previous studies in the series, provides an extremely useful compendium of fact for the pension practitioner.

PAUL H. JACKSON

Symposium on Private Pensions, *Private Pensions and the Public Interest*, pp. 253, American Enterprise Institute for Public Policy Research, Washington, 1970.

This volume contains the proceedings of a symposium held in Washington, D.C., in May, 1969. The Institute's purpose in arranging such symposia is to present responsible discussion of important public policy matters. Since the public interest in private pension plans has grown considerably in recent years, the public policy issues have become a matter of ever widening interest on the part of business, labor, the academic community, and government, and representatives of each of these major areas participated in the deliberations. The emphasis of the symposium was directed to current views on the respective roles of the public and private pension systems, the current tax, vesting, and funding status of private pension plans, and the public policy issues involved in legislative proposals for broader government regulation of the private pension plan structure.

Four formal papers were presented: "The Role of Private Pensions" by

Charles A. Siegfried, F.S.A.; "Government and Pensions" by Robert J. Myers, F.S.A.; "Private Pension Funding and Vesting—Where Do We Stand Today?" by Charles L. Trowbridge, F.S.A.; and "Tax Treatment of Private and Public Pension Systems" by Raymond Goetz. Each of these papers was the subject of panel discussions, and the published proceedings include not only the papers and panel discussions but also the questions and comments from the floor on the part of the invited participants.

Although this symposium did include several individuals noted for their attention-getting pronouncements, the balance achieved is such as probably to preclude its receiving much publicity or having any decisive influence on legislation. On the other hand, as a fairly well-balanced presentation of the major issues on the part of a broad and representative group, most actuaries active in the pension field will find it both of interest and of value.

PAUL H. JACKSON

SELECT CURRENT BIBLIOGRAPHY

In compiling this list, the Committee on Review has digested only those papers which appear to be of direct interest to members of the Society of Actuaries; in doing so, the Committee offers no opinion on the views which the various articles express. The digested articles will be listed under the following subject-matter classifications: 1—"Actuarial and Other Mathematics, Statistics, Graduation"; 2—"Life Insurance and Annuities"; 3—"Health Insurance"; 4—"Social Security"; 5—"Other Topics."

ACTUARIAL AND OTHER MATHEMATICS, STATISTICS, GRADUATION

B. Benjamin, *Social and Economic Factors Affecting Mortality,* pp. 74, Mouton & Co., The Hague, Paris, 1965.

This book is Volume V in a series edited by the International Committee for Social Sciences Documentation. The series, "Confluence," is intended to publish surveys of current research on special subjects, chosen because of their interdisciplinary character. By choosing subjects that are of several social sciences or that warrant a multiple approach, the committee hopes to contribute to the strengthening of relations between the various disciplines.

The International Committee for Social Sciences Documentation was formed in 1950, with the support of UNESCO. It is an international nongovernmental organization, gathering some twenty scholars of the various social sciences and specialists of bibliographical work. Its members work in close co-operation with the International Social Science Council and the various specialized international associations. "Social and Economic Factors Affecting Mortality" deals with the difficulties of making any transition from statistical association between mortality changes and changes in cultural or economic factors to any precise formulation of hypotheses about causation. The study is concerned with a broad spectrum of elements which determine man's interaction with external conditions: his resistance to the inimical forces of nature, his approach to the economic struggle to supply himself with living needs, his position in society, his participation in group behavior, and his attitude toward social mores. The author regards this whole process of adaptation to external stresses as reflecting health, and failure to adapt as reflecting ill health. The focus of the book is upon this process as the superficial mechanism of mortality variation.

L. H. Longley-Cook, *New Math Puzzle Book,* Van Nostrand Reinhold Company, 1970, $4.95. Reviewed in *The Actuary,* November, 1970.

G. H. Hardy (with a foreword by C. P. Snow), *A Mathematician's Apology,* Cambridge University Press, Cambridge, 1967, $2.95 cloth, $1.45 paperback. Reviewed in *The Actuary,* January, 1971.

Life Insurance and Annuities

*Roger A. Steinharter, *Variable Annuities and Separate Accounts: An Annotated Bibliography,* pp. xiii, 89, McCahan Foundation, Bryn Mawr, Pa., 1970, $2.00.

The annotated bibliography provides a central reference source for the articles, papers, reports, and books that were written during the five-year period from 1965 to 1969. Certain books published prior to 1965 are also included. Each annotation is designed to afford a brief but descriptive indication of the content of a particular writing.

The bibliography is separated into fourteen major categories, most of which are further segmented into subcategories. There is a good deal of topical overlapping, but the cross-referencing in the Subject Index is designed to make all discussions on a specific topic readily accessible.

Health Insurance

U.S. National Center for Health Statistics, *Estimation and Sampling Variance in the Health Interview Survey,* pp. 28, Public Health Service Publication No. 1,000, Series 2, No. 38, Washington, June, 1970.

This report presents a method for computing variances of estimates derived from the Health Interview Survey (HIS). In addition, it gives a brief description of the HIS sample design, a detailed account of how the estimator for health statistics is constructed, and an iterative method for fitting a curve to a set of variance estimates to obtain approximations that can be used for several different types of estimates derived from survey data.

The variance estimator is an adaptation of one initially developed by Professor Nathan Keyfitz. In applying the method to the HIS, difficulties arise because certain fundamental assumptions are not met. The report tells how these problems were resolved, develops the theory which applies to the complex HIS estimator, and discusses some aspects for programming the procedure for the computer.

U.S. National Center for Health Statistics, *Development of the Design of the NCHS Hospital Discharge Survey,* pp. 29, Public Health Service Publication No. 1,000, Series 2, No. 39, Washington, September, 1970.

This report contains a detailed description of the survey design, estimating techniques, and quality-control devices employed in the National Center for Health Statistics continuing Hospital Discharge Survey. Thus it is an account of the technical structure of the undertaking. It is also the story of how that structure was put into place: the initial purposes and objectives, the available resources, the theoretical experimentation and exploration, the determination of unit costs, the balancing of contrasting requirements, efforts to optimize the sampling plan, including use of some new patterns of controlled selection, and a scheme for gradual introduction of an increasing number of hospitals and items of data into the sample.

U.S. National Center for Health Statistics, *Height and Weight of Children in the United States, India, and the United Arab Republic,* pp. 51, Public Health Service Publication No. 1,000, Series 3, No. 14, Washington, September, 1970.

This report presents and analyzes data on standing height and on weight of children aged 6 through 11 years in the United States, India, and the United Arab Republic (Egypt). Data for all three countries come from representative national samples and present the first opportunity to compare data from several countries that are broadly representative of the respective populations of children. The present data provide basic norms which have long been needed.

The variability of height and weight with age and with sex is very similar in each of the three countries. The level of the values, however, is clearly different in each of the three. The means and the percentiles for both height and weight are markedly higher for children of the United States than for children of the other two countries. Indian children had the lowest mean values, and the heights and weights of children of the United Arab Republic fell between those of the other two countries, but somewhat closer to those for India.

Heights of children have increased during the past half-century. While no truly comparable national data exist for earlier periods, it is of interest that the available but limited data on height of children of the United States around the turn of the century are slightly lower than the current data for children of Egypt and are slightly higher than those for children of India.

The report presents information on the samples in the three countries and discusses the sampling error and measurement errors in the data.

U.S. National Center for Health Statistics, *Persons Injured and Disability Days Due to Injury, United States, July 1965–June 1967,* pp. 72, Public Health Service Publication No. 1,000, Series 10, No. 58, Washington, March, 1970.

Statistics are presented on persons injured and on disability days attributable to injury, showing annual estimates for the civilian, noninstitutional population derived from sample data collected during the period July, 1965–June, 1967. These estimates are based on data collected in household interviews for the Health Interview Survey. The statistics are shown by class of accident, place of accident, and selected demographic characteristics of the population. Earlier reports presented health data for United States civilians based on interview material collected during the period July, 1959–June, 1961. In effect, the present report updates and supplements the earlier data.

During the period covered in this report, an average of 48.5 million persons per year sustained injuries requiring medical attention or causing restriction of activity for a day or more, an incidence rate of 253.1 persons injured per 1,000 persons per year. The number of days of restricted activity per 100 persons per year due to injury was 290.9, and the number of days of bed disability was 75.1. The rates for all types of short-term disability associated with injuries were higher for males than for females, and the rates increased consistently with age. Young adults 17–24 years of age experienced a high rate of injury due to moving motor vehicle accidents (51.4 per 1,000 persons); more persons sustained injuries at home than in any other place of accident (42.1 per cent of all persons injured).

U.S. National Center for Health Statistics, *Changes in Cigarette Smoking Habits between 1955 and 1966,* pp. 33, Public Health Service Publication No. 1,000, Series 10, No. 59, Washington, April, 1970.

Comparative data are presented on the cigarette-smoking status of persons 18 years and older in the civilian, noninstitutional population for the years 1955 and 1966. Data basic to the estimates for both years were collected in supplements to the Current Population Survey conducted by the Bureau of the Census.

Changes in smoking habits that occurred during the interval 1955 through 1966 are measured in terms of persons who have ever smoked (current smokers and former smokers) and those who have never smoked. Further comparisons are made by maximum cigarette-smoking rate attained, present consumption rates among current smokers, and age at which persons started smoking regularly.

Estimates shown for the two years indicate that during the interval there was a decrease among men in the proportion of current cigarette smokers with the decline primarily concentrated among those under 55 years of age. The proportion of current smokers among females increased during the interval, with the percentage of change increasing appreciably with advancing age.

U.S. National Center for Health Statistics, *Current Estimates from the Health Interview Survey, United States—1968,* pp. 57, Public Health Service Publication No. 1,000, Series 10, No. 60, Washington, June, 1970.

In this report provisional statistics based on data collected in household interviews for the Health Interview Survey during calendar year 1968 are presented: the incidence of acute illnesses and injuries and associated disability days; the percentage of the civilian, noninstitutional population with limitation of activity due to chronic conditions; the number of persons injured and associated disability days; the number of hospital discharges and length of stay; the number of persons with hospital episodes during the year; the frequency of dental visits and of physician visits; and the percentage of persons with hospital and surgical insurance.

A section of this report presents provisional findings on cigarette-smoking habits in the civilian, noninstitutional population aged 17 years and older. These data were collected as a supplement to the August, 1968, Current Population Survey conducted by the United States Bureau of the Census.

U.S. National Center for Health Statistics, *Selected Symptoms of Psychological Distress,* United States, pp. 44, Public Health Service Publication No. 1,000, Series 11, No. 37, Washington, August, 1970.

Findings are presented on rates of positive response to twelve questions concerning symptoms, which have been used in other studies as indicators of psychological distress. The rates are presented by sex, race, age, and nine other selected demographic variables. The data for this report were obtained from Cycle I of the Health Examination Survey (HES). This survey was conducted in 1960–62 on a probability sample of 7,710 persons selected to represent the 111 million adults in the United States civilian, noninstitutional population aged 18–79 years. Of these, 6,672 adults, or more than 85 per cent, were examined.

Symptom rates by sex, race, and age are presented for each of the twelve self-report items. Symptom rates by sex and race for each of the selected demographic variables were evaluated for statistically significant differences between actual and age-adjusted expected rates, for general symptom patterns or trends of higher- or lower-than-expected rates for the twelve symptoms, and for consistency among the four sex-race groups of white and Negro men and women.

Significant differences and/or trends in symptom rates were found not only by sex, race, and age but also by the other demographic characteristics. The most significant differences were with sex and age. Women had higher rates than men for all twelve symptoms, and seven symptoms varied significantly by age. Findings of particular interest were that higher symptom rates were reported by the relatively lower-educated and lower-income groups, as could be expected on the basis of other studies. Lower rates were reported by never married individuals, particularly among white women compared with their married, divorced, separated, or widowed cohorts; by working men and women compared with retired men and women housekeepers, respectively; and by residents of metropolitan areas compared with residents in other urban and rural areas.

Reported rates of having had a nervous breakdown varied widely by sex, age, and education, with a rate for lower-educated older women of 14.6 per cent down to a rate of less than 1.0 per cent for higher-educated younger men and women. The over-all percentage reporting that they had had a nervous breakdown was 4.9, and an additional 12.8 per cent reported having felt an impending nervous breakdown, for a combined rate of 17.7 per cent, or almost one out of five, with an estimated twenty million adults having experienced such severe psychological distress.

U.S. National Center for Health Statistics, *Visual Acuity of Children, United States,* pp. 35, Public Health Service Publication No. 1,000, Series 11, No. 101, Washington, February, 1970.

This report contains national estimates based on findings from the Health Examination Survey in 1963–65 on uncorrected monocular and binocular visual acuity levels of children 6–11 years of age.

For this part of the survey a nationwide probability sample of 7,417 children was selected to represent the roughly twenty-four million noninstitutionalized children 6–11 years of age in the United States. Of these, 7,119, or 96 per cent, were examined.

U.S. National Center for Health Statistics, *Hearing Levels of Children by Age and Sex, United States,* pp. 51, Public Health Service Publication No. 1,000, Series 11, No. 102, Washington, February, 1970.

This report contains estimates of hearing levels for children 6–11 years of age in the United States as determined in the second cycle of the Health Examination Survey, conducted in 1963–65. A probability sample of 7,417 children was selected to represent the twenty-four million children 6–11 years of age in the noninstitutional population of the United States. Out of the 7,417 children selected in the sample, 7,119, or 96 per cent, were examined.

U.S. National Center for Health Statistics, *Arrangements for Physician Services to Residents in Nursing and Personal Care Homes, United States, May–June 1964,* pp. 42, Public Health Service Publication No. 1,000, Series 12, No. 13, Washington, February, 1970.

In this report statistics are presented on arrangements made with physicians by the nation's estimated 17,400 nursing and personal care homes for the care of their 554,000 residents or patients. These statistics are based on a 1964 survey in which personal interviews were conducted with the homes' administrators or other responsible staff.

The nursing and personal care homes are classified in this report by type of service, size, ownership, geographic region, and extent of nursing coverage. Data for residents of the homes include sex, age, mobility status, number of chronic conditions, level of care, and time last physician was seen.

U.S. National Center for Health Statistics, *Motor Vehicle Accident Deaths in the United States, 1950–67,* pp. 39, Public Health Service Publication No. 1,000, Series 20, No. 9, Washington, December, 1970.

This is a study of mortality from motor-vehicle accidents, showing trends for 1950–67 and differences by age, color, sex, geographic characteristics, mileage driven, and marital status. The number of deaths from motor-vehicle accidents rose almost every year from 1950 to 1967. The motor-vehicle death rate, however, did not rise steadily; it reached its lowest point in 1961 and its highest in 1966.

Males had higher age-adjusted motor-vehicle death rates than females, while persons other than white had higher rates than white persons. Differences between the sexes, however, consistently exceeded those between the color groups. In 1950 males had rates as high as 3.4 times those for females.

In 1967, 54.4 per cent of all motor-vehicle fatalities occurred to persons under 35 years of age. The age group with the highest motor-vehicle death rate was 15–24 years. This age group and those 25–34 years of age showed the largest increase in motor-vehicle death rates from 1950 to 1967. Motor-vehicle death rates for males and females differed most in the two age groups.

Southern and mountain states had the highest age-adjusted motor-vehicle death rates and the highest mileage death rates, while northeastern states had the lowest. The standard metropolitan statistical areas with the highest fatal motor-vehicle accident rates were in the West and South, the lowest in the Northeast. Nonmetropolitan counties had higher motor-vehicle death rates than metropolitan counties. Mileage death rates in the 1960's were lower than in 1950. Among the marital-status groups, married persons had the lowest death rate from motor-vehicle accidents, while divorced persons had the highest.

U.S. National Center for Health Statistics, *Natality Statistics Analysis, United States, 1965–1967,* pp. 38, Public Health Service Publication No. 1,000, Series 21, No. 19, Washington, May, 1970.

Important features of statistics for births in the United States during 1965–67 are presented and interpreted. The statistics are based on information obtained from microfilm copies of the original certificates of live birth.

In 1965 the annual number of births fell below four million for the first time since 1953, and by 1967 it had dropped to 3,521,000. Continuing its decline from a peak of 25.3 in 1957, the birth rate fell to 17.8 in 1967.

The recent decline in fertility was due, in part, to changes in the age pattern of childbearing. Women who had relatively high birth rates of younger ages in the 1950's were having relatively low birth rates at older ages during the 1960's. Declines in fertility at younger ages (under 25 years) may have been due to postponement of marriage and childbearing or to a reduction in the number of children couples want to have all together. At present it is impossible to determine which of these explanations may be more important, but both factors have probably been operating to some extent.

The decline in the annual number of births may end in the near future. The number of women in the childbearing ages is growing rapidly and will increase by about 30 per cent by 1980. Unless fertility rates fall well below their present levels, this increase in the number of women will raise the annual number of births. When the fertility of white women is compared with that of all other women combined, the latter is higher. Both groups reached peak levels of fertility in 1957 and since then have shown declines in their birth rates. The birth rate of most states and large metropolitan areas declined during the 1965-67 period.

More than 98 per cent of all live births in 1967 were classified as having been delivered by physicians in hospitals. The differential in the rate of medically attended hospital deliveries by color has narrowed considerably in recent years. In 1967, 99 per cent of white births and 93 per cent of all other births were delivered by physicians in hospitals.

Slightly more than 8 per cent of all babies born in 1967 were immature, that is, weighed 2,500 grams (5 pounds, 8 ounces) or less. The proportion immature among white births was 7.1 per cent, and among all other births, 13.6 per cent.

The estimated illegitimacy rate in 1967 was 23.9 illegitimate births per 1,000 unmarried women aged 15–44. Although this rate has changed very little since 1957, the proportion of births classified as illegitimate has increased considerably, from an estimated 5 per cent in 1957 to 9 per cent in 1967.

U.S. National Center for Health Statistics, *Increases in Divorces, United States—1967,* pp. 18, Public Health Service Publication No. 1,000, Series 21, No. 20, Washington, December, 1970.

In this report are described the increases in the number of divorces and annulments that have occurred in the United States. The national divorce total grew from 428,000 in 1963 to 523,000 in 1967, an increase of 22 per cent in four years. Divorces were up much more than could be accounted for by changes in numbers of the married population and its age composition. In recent years, only about one-fourth of the total increase can be explained by changes in the population. Divorces increased in the great majority of states. Since 1963 they have increased not only in the United States but also in most foreign countries.

The divorce rate for states included in the divorce-registration area is negatively associated with median duration of marriage at decree: states that have a high median duration tend to have low rates and vice versa.

The number of children involved in divorces increased about 25 per cent from 1963 to 1967 in spite of a simultaneous decline in numbers of births in the general population.

In 1967 divorced persons comprised 2.1 per cent of all men and 3.2 per cent of all women 14 years of age and over; these percentages showed some increase from earlier years. Separated men and women represented 1.4 and 2.2 per cent, respectively, of the population. Divorced persons tended to have higher death rates and marriage rates than those belonging to other marital-status categories.

Dorothy P. Rice and Barbara S. Cooper, *National Health Expenditures, 1929–70,* January, 1971. Not reviewed.

Marjorie Smith Mueller, *Private Health Insurance in 1969: A Review,* February, 1971. Not reviewed.

SOCIAL SECURITY

Social Security Programs throughout the World, 1969, Social Security Administration, Washington, 1970. Reviewed in *The Actuary,* January, 1971.

National Health Insurance: A Comparison of Five Proposals, SSA Actuarial Study No. 12, 1970. Reviewed in *The Actuary,* January, 1971.

Magnitude and Frequency of Physicians' Fee Increases for Selected Procedures, December 1965–December 1969, SSA Actuarial Study No. 11, 1970. Reviewed in *The Actuary,* February, 1971.

Enrollment and Finances of Blue Cross and Blue Shield Plans, 1968, SSA Actuarial Note No. 22, 1969. Reviewed in *The Actuary,* March, 1971.

Income-Loss Protection against Illness, 1964–68, SSA Actuarial Note No. 23, 1969. Reviewed in *The Actuary,* March, 1971.

Robert J. Myers, *Estimated Amount of Life Insurance in Force as Survivor Benefits under the Social Security Program,* Actuarial Note No. 71, Social Security Administration, Washington, May, 1970. Reviewed in *The Actuary,* March, 1971.

Longevity of Railroad Retirement Beneficiaries, RRB Actuarial Note No. 7-70, Office of the Chief Actuary, Railroad Retirement Board, October, 1970. Reviewed in *The Actuary,* March, 1971.

Daniel N. Price and Robert O. Brunner, "Automatic Adjustment of NASDHI Cash Benefits," *Social Security Bulletin,* May, 1970. Reviewed in *The Actuary,* March, 1971.

Robert J. Myers, *Medicare,* Richard D. Irwin, Inc., Homewood, Ill., 1970. Reviewed in *The Actuary,* November, 1970.

OTHER TOPICS

*J. D. Hammond, *Essays in the Theory of Risk and Insurance,* pp. 257, Scott, Foresman and Company, 1968, $8.95.

This book is a collection of articles by various authors that have previously been published as unrelated individual papers or as parts of larger works. The articles stress the foundations of risk and insurance theory and were selected to provide a starting point for the study of risk and insurance as a single area. Bibliographies at the end of some of the selections are extensive. In the words of the author: "This volume is primarily concerned with the analysis of risk and uncertainty, the technique of insurance (which is essentially a means of redistributing losses), and the relationship between the two. It is not concerned with the operational problems and procedures of the insurance firm except as they relate to basic illustrations of the insurance technique (for example, rate-making); it does, however, consider the meaning of insurance in law. The material it presents should prove useful as a supplement to the study of risk management in the business firm, the study of insurance principles, and the development of basic study in risk and insurance as unified field."

The first part of the book deals with "The Meaning and Measurement of Risk," the second part with "Risk-taking Behavior," and the third part with relationships between "Risk and the Insurance Technique." The final chapter of the book, on the subject of "Government Insurance and Economic Risk," was written by Mortimer Kaplan and Samuel A. Miller.

United States Senate, Special Committee on Aging, *Economics of Aging: Toward a Full Share in Abundance,* pp. 222, December, 1970.

This report, released January 18, 1971, sets forth the staff conclusions, together with minority and supplemental views, covering eight separate working papers prepared for the Special Committee on Aging. One of the papers was "Pension Aspects of the Economics of Aging: Present and Future Roles of Private Pensions," prepared by James H. Schulz. The staff report includes excerpts from the extensive hearings, including those of February 17 and 18, 1970, on pension aspects, which were printed separately as Parts 10(A) and 10(B) of the hearings before the Special Committee on Aging. Generally, the staff report concluded that private pensions were not currently providing enough income to the aged, nor are they likely to provide sufficient income by 1985, to permit the problem of income for the aged to be set aside as essentially a private matter susceptible of private solution in the future. The implications for potential legislation affecting private pension plans are apparent.

*C. M. Beardsley, *New Items in the 1970 Annual Statement for Life Insurance Companies,* pp. 126, $12.00. Available from the author, 613 Wellington Road, Winston-Salem, N.C.

This is the latest in a series of annual works of the same title that began in 1966. They are updatings of the *Life Insurance Annual Statement Handbook,* produced in 1962 by the author, which demonstrated through examples a method of putting the information required for the annual statement into the annual statement format. The current work, aimed at those with annual-statement responsibilities, attempts to simplify the task of assimilating the changes that have been made between 1969 and 1970 in the annual statement instructions prepared by the Committee on Blanks of the NAIC.

G. F. Michelbacher and Nestor R. Roos, *Multiple-Line Insurers—Their Nature and Operation* (2d ed.), pp. 288, McGraw-Hill Book Co., New York, 1970.

This book was formerly published under the title *Multiple-Line Insurance.* It deals with the entire field of insurance outside of life insurance. A great amount of the material of the previous edition has been thoroughly updated or revised to recognize the changes in the internal functions of the multiple-line insurers that have developed since the previous edition was written in 1957.

The book is a discussion of the nature and functions of a multiple-line insurance operation and the management of such an operation. Therefore, some items commonly found in insurance texts, such as contract analysis or risk management, are not discussed in this book. It has been assumed that the reader will have a basic knowledge of insurance principles and contracts. The role of the book is a functional analysis of a multiple-line insurance company.

Several of the chapters are identified as having been written with the help of specific individuals. The chapters on the subject of rate-making were contributed by L. H. Longley-Cook, F.C.A.S., A.S.A., and the chapters on financial statements, reserves, and statistics for management were contributed by Norton E. Masterson, F.C.A.S.

Institute of Actuaries Students' Society, *Actuaries and Financial Planning*, pp. 149, Butterworths, London, 1970. $1.50. Reviewed in *The Actuary*, February, 1971.

REVIEWS FROM "THE JOURNAL OF THE INSTITUTE OF ACTUARIES"

Reviews in Vol. 96, Part II, No. 404

John Munkman, *Damages for Personal Injuries and Death* (4th ed.), pp. xxx, 258, Butterworths, London, 1970. £2.50.

W. P. Elderton and N. L. Johnson, *Systems of Frequency Curves*, pp. viii, 216, Cambridge University Press, 1969. £3.

James Morrell, *Business Forecasting for Finance and Industry*, pp. 136, Gower Press, London, 1969, £5.

Joseph C. Noback, *Life Insurance Accounting*, pp. xxvi, 440, Richard D. Irwin, Inc., Homewood, Ill., 1969, $12.00.

G. M. Phillips and P. J. Taylor, *Computers* (2d Science Paperback ed.), pp. xii, 178, Methuen & Co., Ltd., London, 1969, 20*s*.

NOTE.—The *Journal*, in addition to actuarial papers and discussion, contains digests of articles, papers, and publications of actuarial interest and "Notes on Other Actuarial Journals."