

**TRANSACTIONS OF SOCIETY OF ACTUARIES
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BOOK REVIEWS AND NOTICES*

* Charles L. Van House, Sr., F.L.M.I., and W. Rogers Hammond, D.B.A., C.P.A., *Accounting for Life Insurance Companies*, pp. xi, 512, Life Office Management Association, Richard D. Irwin, Inc., Homewood, Illinois, 1969, \$10.00.

This well-written LOMA text is an introduction to life insurance company bookkeeping, to the Association Blank, and to the Canadian Life Blank. It is an introduction to these subjects, because all topics which require a knowledge of or even a familiarity with compound interest theory, life contingency mathematics, or the calculus either have been treated lightly (though, in most cases, very expertly) or have been excluded entirely. The policy reserves, which are such a significant part of every life insurance company's operations, are covered in only two pages of this book. Perhaps this vital subject could have been examined more fully.

The book would have been clearer and more helpful to the LOMA student if it had described life insurance bookkeeping directly without reference to general commercial accounting practices. Following the first three well-conceived and well-executed chapters, the text switches to the bookkeeping for sales, inventories, cash, bank balances, and fixed assets in the context of general commercial accounting. In the opinion of this reviewer, the pertinent material in these chapters could have been described in those chapters of the book which already examine a wide variety of life insurance company transactions (chapters 10-19). If this had been done, the student would study these subjects in their natural context. Furthermore, in chapter 8, in an introduction to life insurance accounting, a great deal of emphasis is placed on those features of life insurance bookkeeping, which tend to be unique. This chapter will only serve to confuse the neophyte. This material should have been tucked away in a final chapter or covered in a footnote. These differences between life insurance accounting and general commercial accounting are largely due to the industry's failure to modernize its Association Blank and the rules governing its preparation. The objective of this text should be to describe the fundamentals of life insurance bookkeeping. That can be achieved best by a direct exposition of generally accepted practices.

Three other minor imperfections are present in this admirable volume. Some of those in company management are apt to misinterpret the following sentence, which appears on page 382: "In the life insurance business, there is relatively little that company management can do to control claim, commission, or tax costs." The content of the section entitled "Summary of Life Insurance Accounting Fundamentals," found on page 165, does not measure up to its heading. Fi-

* 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*.

nally, there are several references in the book to an appendix containing a chart of accounts. The chart does not in fact appear in an appendix; it is found on pages 93-98.

In conclusion, the authors are to be congratulated for writing an excellent and long-needed elementary textbook on the subject of life insurance accounting.

JOSEPH C. NOBACK

* Albert P. Islsant and Paul V. Joliet, *Accidents and Homicide*, Harvard University Press, 1968, \$5.00.

Accidents and Homicide is the first in a new series of Vital and Health Statistics Monographs sponsored by the American Public Health Association. Each of the seventeen volumes to be published in the series will present an analysis of one or two causes of morbidity and mortality in the United States based upon statistics from 1959 to 1961 so as to utilize 1960 census data. Sources of data for this volume are the National Center for Health Statistics and the National Health Survey.

The book is introduced by a statement about the increasing significance of accidents as a cause of morbidity and mortality. Accidents are now the leading cause of death among young people in the United States and the third leading cause of death for all ages. The authors then discuss the epidemiology (study of distribution and determinants) of accidental injuries under three broad categories: host (person killed or injured); agent (type of accident); environment (place and physical and environmental factors). There could be overlapping among these three categories, but the authors assign each factor to one specific category; for example, social factors are considered under host but not under environment.

A chapter is spent analyzing statistics under host factors, which include age, sex, race, color, place of birth, marital status, socioeconomic factors, psychological factors, physical and medical conditions. Another chapter is devoted to agent factors, which include such accident types as railway, motor vehicle, motorcycle, aircraft, drowning, poisoning, falls, machinery, electric current, burns, and several others. Environmental factors are examined in another chapter. These include home, farm, industrial premise, place of recreation or sport, resident institution, geography, season, and weather.

After dealing with these three categories, the authors then analyze the statistics by the nature of the injury.

Homicide, being discussed in only one chapter, received much less weight than accidents.

The authors conclude with a discussion of how this knowledge can be put to use and whether it is really helpful in reducing accidents.

FRANKLIN E. PETERS

* Thomas A. Keith, III, M.D., *Prognosis: Clinical Factors in Risk Appraisal*, pp. 272, National Underwriter Co., Cincinnati, Ohio, \$12.50.

The author, a specialist, certified by the American Board of Internal Medicine, serves as medical director of a life insurance company, continues an active teaching assignment in the University Hospitals, and is well qualified to present his views on insurance medicine from the viewpoint of a clinician.

In *Prognosis: Clinical Factors in Risk Appraisal*, he has undertaken an ambitious task. There has been a need for a text of this type, but the reader will be disappointed if he expects it to be an updating of Dingman's *Risk Appraisal*. The author's stated purpose is to enhance knowledge of diseases and longevity for home office and field underwriters.

It is asserted that the home office underwriter has long considered risk selection as his own bailiwick, and that he tends to dismiss the value of an informed and conscientious field underwriter's report. A more vital role in risk selection and a better understanding of the "complex underwriting consideration in home office underwriting" will result from additional training of field underwriters. The premise appears worthy if not wholly unassailable.

An examination of the role of the home office and field underwriter in selection of risks points up separate and distinct differences, though the ultimate goals coincide. Despite similarities in title, it is clear that the primary function of the field underwriter is sale of the product. The essential function of the home office underwriter is selection, evaluation, and classification of the risk.

That the field underwriter's selection of risks largely determines the quality of business written is not debated. He accomplishes this task by seeking his clients from among successful people in apparent good health, whose needs for his product he can demonstrate. Since the primary function of the field underwriter is the sale of the product, any activity which does not directly promote the achievement of this goal lessens his effectiveness. Will a program for training in medical subjects and a knowledge of diseases increase his effectiveness as a salesman? Should it be of the same kind and as extensive as that of the home office underwriter?

A knowledge of general medical terminology may assist him in conducting negotiations with his prospect when a medical impairment may have an important impact on the company's underwriting action. Since he will under most circumstances have incomplete information, he may be ill advised to attempt a medical evaluation of the risk. Given a set of priorities involving the field underwriter, it will be difficult to justify the effort and expense of a program providing more than an elementary knowledge of medical terms.

Dr. Keith's book is the product of a great deal of study in which he attempts to present the clinician's viewpoint on the underwriting of life insurance risks for laymen. He has chosen to organize his presentation in sections, beginning with diseases of the circulatory system and continuing through the various systems, respiratory, digestive, and nervous disorders, and others in the same fashion as

most medical texts. Within these categories he has discussed briefly the anatomy, physiology, diagnosis, and treatment of the disorders contained in the system.

Included within the discussion of individual impairments, especially the more common ones, is an attractive and useful feature listing the important factors for evaluating an impairment. For example, in elevated blood pressure, listed considerations are level of blood pressure on examination, levels reported by the family physician, history of blood pressure therapy, type of drugs used and effects, age and sex of applicant, family history, presence of complicating factors, and disorders such as overweight, diabetes and renal disorders, which exert an adverse effect.

Some criticisms suggest themselves. First of all, the title refers to prognosis, usually defined as the forecast of the probable result or outcome of an illness. The author has provided instead a probable underwriting action, leaving it to the reader to deduce the prognosis.

The scope of the book is extensive. In his quest for completeness more than twenty-five syndromes are included. A syndrome is a set of symptoms occurring together characterizing the condition commonly named for the individual initially describing it. These and other rare conditions are seldom encountered in examinations or in reports.

The value of the text is diminished for lay readers by the technical vocabulary used. Many terms unfamiliar to persons not schooled in technical jargon—poly-peptides, transcapillary exchange of gases, labyrinth of intermediary metabolism acyanotic, arrhythmia, ambient pressure are examples found in the text. It is not an easy book to read, and only the more experienced and sophisticated underwriter will obtain maximum benefit from it.

Abbreviations for medical terms are useful for avoiding repetition of terms and to conserve space. But, in this book, the author accomplishes this at the expense of the reader's comprehension. The term to which the abbreviation refers is frequently buried in a preceding paragraph, undistinguished by italics or capitalization; in one instance two pages separate the antecedent term from the abbreviation used.

A bibliography is included, consisting of thirteen medical texts. Notably absent are references to a wealth of significant mortality studies in various industry publications.

Underwriting actions suggested are in general terms and for the most part appear to be moderately conservative. Ultraconservative is the approach to several impairments. All applicants with valvular heart disease should be considered initially on an informal basis. In another instance, it is stated that all heart murmurs should be examined by specialists. In an even more common impairment, the author suggests that the writing agent submit, on an informal basis, an application for a known hypertensive, presumably for securing home office authority to arrange an examination. Desirable as these actions may be from a clinical viewpoint, in practice this is not always feasible or necessary with a reasonably capable panel of examining physicians.

From a clinical viewpoint and from an author who is a well-trained cardiologist in a large medical center, it would seem desirable to include in such a book some discussion of the effect of recent advances in medicine and surgery—for example, discussion of the mortality effects in individuals with artificial heart valves, the use of pacemakers for maintaining heart rhythms, new treatments for hypertension, the use of nylon and other plastic replacement material for damaged arteries and veins. How can these be considered and under what conditions? These and similar problems, though admittedly rare, are appearing with increasing frequency.

The stated purpose of this text is to enhance the knowledge of disease and longevity for lay underwriters. With high admiration for the intelligence of these dedicated people, it must be concluded that only the more experienced and gifted lay underwriter is likely to read this book with profit. It is much better suited for the physician embarking upon a career in life insurance and for an examining physician who desires to acquaint himself with the elements of underwriting life insurance risks.

FRANK A. WARNER, M.D.*

Richard Barfield and James Morgan, *Early Retirement: The Decision and the Experience*, pp. 293, Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor, Michigan, 1969, \$6.00.

The Survey Research Center of the Institute for Social Research at the University of Michigan has, over the years, explored various aspects of retirement. The latest study, on the decision-making involved in early retirement, first suggested itself in the fall of 1964 when substantially liberalized early retirement benefits were negotiated by the UAW with various companies in the automobile and agricultural implement industries. This monograph reports the findings from the first three years of this study, and a supplemental report which is to be forthcoming in 1970 will discuss results of a planned reinterview with the same autoworkers sample that was interviewed in 1966 as the basis for this study.

The monograph shows the results of surveys conducted on a national sample group, as well as more extensive interviews on early retirement conducted among autoworkers.

The major finding of the study, borne out by both the national and the autoworkers sample data, is that financial factors—primarily the expected retirement income—are of principal importance in the retirement decision, with attitudinal variables having far less influence. For both the national and autoworkers samples, there was found to be a “threshold” level of retirement income which most people seemed to consider necessary to ensure a reasonably adequate postretirement living standard. The threshold level discovered in the survey was in the range of \$4,000 per year. If the expected private pension plus social security amounted to a greater figure, then the individual actually did exercise a fair-

*Dr. Warner, not a member of the Society, is Vice-President and Medical Director of the John Hancock Mutual Life Insurance Company.

ly free choice as to whether to retire or not, whereas below that level retirement appeared restricted to those in poor health, those laid off, and so forth. It is noted that the threshold level is not an absolute figure but one which reflects a current consensus about the minimum income necessary to provide reasonably comfortable living after retirement, so that it may shift upward over time as living standards and price levels gradually rise. Other economic aspects of retirement having some effect on retirement plans were the number of dependents expected at retirement age, the presence of equity in home ownership, and expected income from any other assets.

Among the situational variables, only subjective evaluation of health was found to be substantially correlated with the planning of early retirement. Employees who viewed their health as relatively declining were more likely to express plans for early retirement. Actually, about half of those who elected to retire early did so for reasons of health, and health was perhaps the prime reason for those cases of unexpected early retirement.

As to various attitudinal variables, the survey results seem to suggest that there is no detectable correlation between the decision to retire early and the individual's occupation, education, socioeconomic status, whether his wife is working or not, his attitude toward coworkers, any employer pressure to retire, a view of work as a drudgery, personal control over the work pace, or travel time to work. Some modest correlation with the decision to retire was found on grounds of opinion on health, whether the individual has an active hobby, and union pressure to retire.

Among the extensive tables included in the report, the vast majority seems to concentrate on trivia. On the other hand, the basic observation that early retirement decisions relate to the absolute amount of benefits is one which the actuary must, of course, take into account in estimating the cost of any early retirement provision or liberalization thereof. For this reason, the serious student of the pension scene will find the University of Michigan survey a worthwhile addition to basic source material.

PAUL H. JACKSON

* C.F.A. Research Seminar (Esmond B. Gardner, ed.), *Pension Fund Investment Management*, pp. 141, Richard D. Irwin, Inc., Homewood, Illinois, 1969, \$5.50.

This is a rather short monograph covering the proceedings of a seminar sponsored by the Chartered Financial Analysts Research Foundation in September, 1968. One of the participants was Geoffrey Calvert, F.I.A., A.S.A., while the rest were, for the most part, senior executives of major banks. The actual proceedings were apparently taped and then edited so as to avoid reference to specific banks or employers. The topics covered included the restrictions found in trust agreements, the effect of level of funding or actuarial assumptions on investment, investment objectives including various observations on risk, the

selection of appropriate securities, the measurement of investment performance, and various ethical questions relating to fiduciary standards.

The material is presented in the form of back-and-forth dialogue, approximately as it occurred. The level of presentation is thus conversational, and one's first impression is that the treatment of many subjects is rather shallow. In fact, however, the discussions get into a good many areas of vital interest to the actuary and offer an informal and unexpurgated commentary from the investment point of view. For example, comments on trust restrictions get into the allocation of the basic responsibility for investment between employer, trustee, and investment counsel, the desirability of splitting a fund among multiple trustees, and the propriety of investment in employer stock. Investment performance is considered from the viewpoint of the performer, with observations as to the time span over which performance should be measured, the risk taken on in possible fluctuation in value or deterioration or loss of value, the choice of appropriate equity ratio, and the effect of inflation. Types of securities considered include municipal bonds, mortgages and real estate, mutual funds and pooled funds, over-the-counter and short-supply items, and fixed-dollar obligations with equity overrides. All in all, the tapestry is so broad that in-depth analysis would have been impossible, but the monograph does successfully present a good overview of the problems facing pension fund investment managers.

All pension actuaries will find this monograph well worth the time required to read it.

PAUL H. JACKSON

* C. W. Vennell, *Tower of Strength: A Centennial History of the New Zealand Government Life Insurance Office, 1869-1969*, Wilson & Horton, 1969, pp. 240.

This book recounts all the major events in the hundred-year history of government life insurance in New Zealand. It begins with the British background and proceeds to describe the major events and personalities that have contributed to the rapid progress of the program.

The narrative is lively and the illustrations eye-catching. An appendix lists the chief executive officers, including the actuaries, who were associated with the program since its inception.

A. M. NIESSEN

Bureau of Public Health Economics, School of Public Health, The University of Michigan, *Medical Care Review*, Vol. 26, No. 10, Ann Arbor, November, 1969.

Published monthly (except September), *Medical Care Review* provides "news of current happenings and abstracts of significant publications relevant to medical care planning, organization and administration." Its subscription brochure claims that the staff "scans more than 200 periodicals and journals from the United States and foreign countries. It receives regularly the pamphlets and publications of governmental and major private agencies."

Each issue has three sections—News, Abstracts, and Recent Publications.

The News section contains quotations from newspapers, press releases, magazine articles, and other publications, such as the *Congressional Record*. The November, 1969, issue included the President's social security message; articles on Medicare, Medicaid, and OEO health programs (under the heading "Government Programs"); items on Blue Cross and Blue Shield (under "Insurance" and "Drugs"); and several reports on the Washington, D.C., General Hospital (under "Facilities").

The Abstracts section contains reviews and summaries of relevant publications. These are similar to the shorter abstracts in the *TSA Book Reviews and Notices* section. In the November, 1969, issue, they were organized under six headings: General Materials, Basic Data, Personnel, Facilities, Organization of Payment, and Organization of Services.

The Recent Publications section is a bibliography of books, articles, and reports.

Neither the News nor the Abstracts section contained any discernible editorial opinion. As a digest of record in its field, *Medical Care Review* may be a useful reference periodical for a company's medical or actuarial library. Subscriptions cost \$10.00 per year.

JEROME M. STEIN

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

* Thomas Crocker, Harry Sarason, and Byron Straight, *xy %_o: The Actuary's Pension Handbook of Optional Annuity Factors*, Pension Publications from the Sarason Publishing Company, 1966.

The tables included in this set of books are designed to provide the actuary with reference material from which he can develop rapid and accurate solutions to pension plan problems involving joint life annuities, temporary annuities, annuities with a certain period, and option factors.

Age combinations available in the tables are 40-89 for annuitants and 20-99 for beneficiaries. All the tables are based upon the 1951 Group Annuity Table for males and females. A separate handbook is published for each of 3, 3½, 4, and 4½ per cent interest.

LIFE INSURANCE AND ANNUITIES

A Study of Canadian Pension Plans (3d ed.), pp. 247, National Trust Company, Limited, Toronto, 1969.

This study presents in tabular form the major provisions of 136 pension plans of 113 employers. It sets out to trace the changes which have been made in the pension plans

surveyed in the second (1961) edition of this work, and the details are presented in such a manner as to distinguish between those provisions which have not changed since the last survey and those which have.

Of the plans surveyed in the second edition, a relatively small number are no longer in existence; the balance make up the material for the current survey. On this occasion, there was thus no new selection of plans; the 1961 criteria were the importance of the industry to the Canadian economy, the size of the company within the industry, and representation on a geographical basis.

As was true of the earlier edition, the book includes a number of short articles contributed by well-known Canadian pension consultants covering areas of current interest in the pensions field and occasionally touching upon other employee benefits. A new feature of the present edition is a very succinct summary of any group life insurance and long-term income continuance insurance plans maintained by employers whose pension plans are included in the survey.

HEALTH INSURANCE

Health Insurance for the Aged: Amounts Reimbursed, by State and County, 1968, ii, 62 pp.

Office of Research and Statistics, Social Security Administration, Washington, November, 1969.

This statistical compilation presents enrollment and reimbursement dated by state, county, and other pertinent jurisdictions in hospital insurance, supplementary medical insurance, and combined categories for calendar year 1968. Legal provisions of both parts of the program, the sources and limitations of the data, and definitions of the terms used are included in a brief introduction to the tables.

Louis S. Reed, *Private Health Insurance, 1968: Enrollment, Coverage, and Financial Experience*, Social Security Bulletin, December, 1969.

The article presents detailed statistics on coverage, premiums, and benefit payments during 1968, including time series for some of the principal items. For all private plans combined, the 1968 premium income was \$12.9 billion and the benefit expenditures \$11.3 billion. The private insurance benefits met nearly 36 per cent of all consumer expenditures for personal health care during that year.

SOCIAL SECURITY

* Department of National Health and Welfare, Canada, *Characteristics of the Population Covered under the Guaranteed Income Supplement of the Old Age Security Program Canada, 1967*, pp. v, 14, Ottawa, February, 1968.

Effective January 1, 1967, the Canadian Old Age Security Act was amended to provide for a guaranteed income supplement in addition to the basic old age pensions, subject to an income test. "This Research Memo is the first of a series which will report on the income status and other characteristics of the old age security pensioners who are receiving the guaranteed income supplement."

The population characteristics analyzed are age, sex, marital status, income status, and average income.

R. J. Myers and F. Bayo, *Long Range Cost Estimates for Old-Age, Survivors, and Disability Insurance System, 1969*, Actuarial Study No. 69, September, 1969, Social Security Administration, Washington, pp. 51.

This is the latest in a series of actuarial studies reporting the results of valuations of the OASDI system. According to this report, the OASDI system was overfinanced by

1.16 per cent of payroll. In addition to a brief description of the methodology used in the estimates, the study presents various projections of future covered workers, beneficiaries and their average benefits, total benefit payments, and size of the trust funds. Comparison is made with previous cost estimates.

It should be noted that, on the basis of this report, Congress approved a 15 per cent increase in social security benefits, effective January, 1970, thus using up the entire actuarial surplus.

Ralph M. Thurlow, "An Inside View of the Great Medicare Conspiracy," *Medical Economics*, January 5, 1970.

Social security's chief actuary explains his contention that "expansionists" seek to broaden federal benefits to provide full economic security, including health care for almost everyone.

Wayne G. Vroman, *Macroeconomic Effects of Social Insurance on Aggregate Demand*, 95 pp., Staff Paper No. 2, Office of Research and Statistics, Social Security Administration, Washington, July, 1969.

This study analyzes the impact of social security on the national economy. The programs included in the study are OASDI, Medicare, and state unemployment insurance. The analysis focuses attention on how changes in contribution rates, the taxable maximum per employee, and amount of benefits affect the level and stability of aggregate demand.

Robert J. Myers and William C. Hsiao, *Actuarial Cost Estimates for Hospital Insurance Program*, Actuarial Study No. 71, February, 1970, Social Security Administration, Washington, pp. 38.

This study presents the latest cost estimates for the hospital insurance part of the Medicare program. For a twenty five-year valuation period, the new cost figure is 2.76 per cent of taxable payroll under the present limit of \$7,800 per year. The study includes sections on methodology and on comparisons with previous cost estimates.

OTHER TOPICS

* *Transactions of the Actuarial Society of South Africa*, Vol. I, Part I, 1969.

With this volume the actuaries in South Africa have commenced publication of the papers and discussions presented at meetings of their society, a valuable addition to the growing list of regular actuarial publications. Papers included in this first volume are "The Distribution of Profits Arising from Equity Investments," "Some Ethical Problems Arising in Connection with Equity-Linked Contracts," and "A Method for the Approximate Calculation of Premiums Which Can Be Applied to Any Pattern of Mortality," a list not unlike that contained in our own *Transactions*.

Saul Waldman, *Tax Credits for Private Health Insurance: Estimates of Eligibility and Cost under Alternative Proposals*, Staff Paper No. 3, 82 pp., Office of Research and Statistics, Social Security Administration, Washington, October, 1969.

The paper analyzes five alternative methods of providing credits against individual income taxes to offset, in whole or in part, the cost of private health insurance protection for the under-age-65 population. The proposals include two illustrative plans suggested by the American Medical Association and three other plans.

All the plans provide credits against the federal income tax on a sliding scale, with

the largest credits going to the poor and a lesser credit or none at all given as income rises. The cost of these proposals would range from \$3 billion to \$14 billion a year. The low estimate of \$3 billion is for a plan that would give tax credits (or vouchers) only to the poor. The plan costing \$14 billion would provide at least a small credit for everyone, including the aged.

Alfred M. Skolnik and Sophie R. Dales, *Social Welfare Expenditures, 1968-69*, Social Security Bulletin, December, 1969.

This article, which is an annual feature of the *Bulletin*, presents facts and figures on cash benefits, services, and administrative costs of all programs that are of direct benefit to individuals and families. These programs include those for income maintenance through social insurance and public assistance and the public provision of health, education, housing, and other welfare services.

Rising social welfare expenditures are accounting for an ever larger proportion of the gross national product: the ratio was more than 14 per cent in 1969. When the private-sector spending for social welfare is included, the proportion of GNP devoted to these purposes is 20 per cent—up from 17.9 per cent in 1965.

REVIEWS FROM "THE JOURNAL OF THE INSTITUTE OF ACTUARIES"

Reviews in Vol. 95, Part II, No. 401

B. Benjamin, *Demographic Analysis*, pp. 160, George Allen & Unwin, Ltd., London, 1968.

K. G. Lockyer, *An Introduction to Critical Path Analysis*, 2d ed., pp. x+134, Pitmans, London, 1967.

R. J. Nicholson, *Economic Statistics and Economic Problems*, pp. 399, McGraw-Hill Publishing Co. Ltd., Maidenhead, Berkshire, England, 1969.

C. G. F. Simkin, *Economics at Large*, pp. xii+211, Weidenfeld & Nicolson, London, 1968.

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."

