

BOOK REVIEWS AND NOTICES

*Giant Brains or Machines That Think.* By Edmund Callis Berkeley. John Wiley & Sons, Inc., New York. Chapman & Hall, Limited, London, 1949. Pp. 286.

For several years, there has been need for a book which would serve as a non-technical introduction to the field of high-speed computers and allied equipment or, in slightly broader terminology, the field of automatic machinery for handling mathematical and record data. Mr. Berkeley's book in large measure fulfills this need.

The book has been divided into twelve chapters and three supplements but the subject matter of the book proper falls into a number of separate sections. The first part, consisting of the first three chapters, is devoted to a general introduction of the subject and an attempt to present, in a popular way, the notions of language in general and machine language in particular. It also leads slowly to a definition of a "mechanical brain" in a broad sense, and points out that while machines which handle information have existed for more than 2,000 years, the two new things which have been added and which make it possible to regard them as mechanical brains are, first, the ability of such machines to automatically move information from one part of the machine to another, and second, their ability to proceed automatically through a long series of operations without requiring human instruction at each step of the way. The electromagnetic relay and the vacuum tube are mentioned and explained, but in no great detail; the concept of counting in binary form is clearly shown. These ideas and devices are then used to introduce a hypothetical computer of very simple form, which is called "Simon." The tracing of the manner in which Simon is developed supplies an effective tool for the introduction of much of the rationale behind computing machines in general. To many readers, this tracing will be both informative and stimulating.

The second part, comprising chapters 4 through 8, is devoted to an explanation of machines which were operating at the end of 1947. With the exception of chapter 4 which contains an excellent, concise review of punch-card machines and principles, each chapter is devoted to one of the large scale sequence calculators which had already been operated effectively at that time. Taken up in turn, with short historical explanations of their development, are the M.I.T. Differential Analyzer, the Harvard Mark I, the ENIAC and the Bell Laboratories Relay Calculator. Brief coverage is given to the types of devices employed in each, the reliability of operation, the class of problems they were directed toward, cost and other aspects in such a way as to furnish a good picture of what these machines do, without delving into how it is accomplished.

Chapter 9 is best considered by itself as a separate part. It is devoted to another type of computer—the Kalen-Burkhart Logical-Truth Calculator—and to a discussion of Logical-Truth Calculations and their practical use. The use of

computers for logical operations (*i.e.*, to apply rules) is a very important feature of these machines and promises to make them extremely useful for business purposes.

The remainder of the book is concerned with matters of the future. Chapter 10 deals with computers under construction at the beginning of 1948 (most of these have now been completed) and includes a discussion of ideas and devices which were then being incorporated. The following chapters delve further into the future by offering conjectures as to the impact of this type of development on our social, economic and political life—which may be succinctly described as “Crystal Gazing in Brief.” The supplements include a number of interesting mathematical tricks which are utilized in various machines, and an extensive bibliography.

All in all, the book does a good job. Some may feel disappointed that it was written for popular interest instead of for a more restricted class of readers. This, however, doesn't detract from the book's merit as a source of ready information for the uninitiated. The author has invariably developed his subject matter from simple concepts, but it is so sectionalized that those parts which constitute familiar ground are apparent and can be conveniently skipped with no loss of meaning or continuity. When the reader finds himself on unfamiliar ground, he will welcome this approach and probably find that it provides handy tools for associating the underlying principles involved.

MALVIN E. DAVIS

*Statistics, An Intermediate Textbook, Volume I.* By N. L. Johnson & H. Tetley. Cambridge University Press, London, England, 1949. Pp. 294.

This, the first of two volumes on statistics, is another in the series of textbooks published under the authority of the Institute of Actuaries and the Faculty of Actuaries, and designed to meet the needs of students preparing for the British actuarial examinations. It is intended to correspond with the requirements of Part 1 of their examinations and to be studied along with Freeman's *Mathematics for Actuarial Students* covering finite differences and the theory of probability. The second volume, yet to be published, will be a continuation of the first, to be studied side by side with the compilation, analysis and graduation of mortality and other actuarial statistics, in connection with Part 2 of the examinations.

The first four chapters deal with descriptive statistics—graphs, charts, index numbers, central and dispersion measures and correlation and linear regression. The next four chapters discuss probability theory. The problem of statistical inference is defined and concepts such as expected values, random variables and probability distributions are introduced. In the last two chapters the theoretical results previously obtained are applied to practical problems.

The material on descriptive statistics is at a much lower level of difficulty than the later chapters, and in places goes into much greater detail than would seem to be necessary or desirable in a text prepared for actuarial student level. This may be in a good measure a consequence of the fact that the authors hoped

that, although designed primarily for use in connection with actuarial studies, the text might be of interest and use outside of actuarial circles as well.

Probability theory is introduced with a brief discussion of various approaches to the subject intended to give the student an appreciation of the broader background of the subject. The authors make quite a point of the fact that they have chosen to follow the definition of J. E. Kerrich which is based on the observed tendency of relative frequencies, as exemplified in coin and die tossing experiments, to reach a more stable value as the number of observations is increased. The significance of their choice can hardly be clear to the beginning student who reads only this volume, but may become apparent when the second volume is studied. The separation into two volumes is somewhat unfortunate since ideas are included in the first volume that will not be developed at length until the second. This makes the student's reading of the first volume more difficult than would otherwise be the case.

As compared with this work, American texts are built more on the mathematical theory approach to probability. A mathematical function is defined at the outset which has the properties of observed probabilities, and the theory developed mathematically therefrom. Such an approach increases the logical coherence of the theory, which these authors point out.

Problems are included at the end of each chapter which in some instances appear to go beyond the scope of the material covered. Probably the small number of problems included presupposes that additional problems are available to the student from prior actuarial examinations and other texts.

The Institute and Faculty are to be complimented upon the earnestness with which they are going about the task of producing textbooks written especially for actuarial students, and Messrs. Johnson and Tetley are to be commended for their contribution to that end.

Unfortunately, we will not find this work on statistics suitable for our students. Our examinations are designed to permit the use of any text on probability and statistics that may be the basis of an undergraduate course on these subjects. In addition, the texts referred to in the syllabus for students who may not have had a college course in probability and statistics cover the subject more satisfactorily for our purposes, especially the excellent work by S. S. Wilks.

MORTON D. MILLER

#### OTHER RECENT PUBLICATIONS

##### MATHEMATICAL, STATISTICAL, AND ACTUARIAL TABLES, TEXTBOOKS, ETC.

Campagne, Dr. C.; De Jongh, Dr. B. H.; Smit, Ir J. N.—*Bijdrage tot de Wiskundige Theorie van de Bedrijfsreserve en het Eigenbehoud in de Brandverzekering* ("Contribution to the mathematical theory of the stabilization reserve and the net retention in fire insurance"). 'S-Gravenhage/Rijksuitgeverij 1947. Pp. 131.

This is a very thorough mathematical treatment of the extension to fire insurance of the problem of the calculation of the stabilization reserve required for the equalization of deviations of risk in life insurance mathematics. This is of course associated with the net retention policy of companies. The book includes parallel translations in English.

*Life Insurance Ownership among U.S. Families—1949.* Survey Research Center, University of Michigan, December, 1949. Special Tabulations of Life Insurance Data prepared for *The Institute of Life Insurance* from data collected in the 1949 Survey of Consumer Finances conducted for the Federal Reserve Board by the Survey Research Center of the University of Michigan. Pp. 35.

#### OTHER ACTUARIAL AND INSURANCE PUBLICATIONS

Bryson, Jr., Winfred Octavus. *Negro Life Insurance Companies.* College Offset Press, 148-150 No. 6th St., Philadelphia 6, Pa. 1948. Pp. 118.

The author of this book has prepared an interesting comparative analysis of the operating and financial experience of negro legal reserve life insurance companies. The book deals with the development of the companies, the benefits offered, their growth and the geographical distribution of insurance in force.

He then discusses the mortality and lapse experience and the expense rate. A chapter is devoted to earnings on investments and the types of investments made. In conclusion the author makes some recommendations which he feels would improve the relative position of negro life insurance companies in the life insurance industry.

Falls, Lawrence E. *Introduction to Insurance.* Insurance Institute of America, 80 John Street, New York 7, N.Y. 1949. Pp. 94.

A small "volume intended to provide an outline of a business that affects all other businesses and that touches the lives of nearly every individual. It has been prepared primarily for workers who have recently entered the business and for those who have been longer employed but without opportunity to learn the scope and function of the business as a whole."

Gregg, Davis W. *An Analysis of Group Life Insurance.* University of Pennsylvania Press, Philadelphia, Pa. 1949. Pp. 285.

This is the second volume of a series of volumes of research known as the "Huebner Foundation Studies" to be published by the S. S. Huebner Foundation for Insurance Education. It was prepared by Dr. Gregg in partial fulfillment of the requirements for a Ph.D. degree when he was studying for an insurance educational career under a Huebner Foundation fellowship grant.

The book is an authoritative and up-to-date treatise on the subject of group life insurance, its development, characteristics and costs. A thorough analysis of the contract, both the master and the individual, is also made. Chapters are devoted to the problems involved in marketing, underwriting the risk and administering the groups.

The final chapters are devoted to some of the problems created by group insurance, the important trends and changes in the structure and type of contract, the social significance of group insurance, and some of its limitations and defects.

Appendices are added showing legal definition, specimen master policy, employees' certificate and application.

This book is a worth-while addition to the books which have been written dealing with various specialized phases of life insurance coverage.

Kelsey, R. Wilfred and Daniels, Arthur C. *Handbook of Life Insurance.* Institute of Life Insurance, 60 East 42nd Street, New York 17, N.Y. 1949. Pp. 87.

This is the second edition of a small book designed to answer the most frequently asked questions about life insurance. It contains a brief outline of the fundamentals of

life insurance. Since everyone in this country has an interest in what the life insurance business means to the welfare of the nation these aspects have been mentioned in the book. This second edition contains several major revisions in the presentation and arrangement of material. Also new material has been added.

Mehr, R. I. and Osler, R. W. *Modern Life Insurance*. Macmillan Co., 60 Fifth Ave., New York, N.Y. 1949. Pp. 769.

This book is a practical up-to-the-minute source book of life insurance information plus a history of the business and a discussion of the principles motivating present practice. It includes such topics as technical and legal aspects of the business, policy forms, variations among companies, and how to choose the best policy to fit specific life insurance needs.

The book is divided into six parts as follows: Introduction; The Product; The Cost of Life Insurance; The Market; Life Insurance Companies; The Life Insurance Industry. Each part is then broken into various chapters. It will be useful as a reference book for the student, the life insurance man and his potential clients.

Robinson, C. C. and Osler, R. W. *Guide to Life Insurance*. Rough Notes Co., Inc., Indianapolis, Indiana. 1949. Pp. 211.

This is a complete and up-to-date revision of a former book entitled *The Life Agent's Qualification Handbook* originally published in 1936. The primary purpose of the original book was to classify for convenient study the minimum information needed by prospective agents who were required by law to pass qualification examinations in order to solicit life insurance.

As a result of the Guertin legislation it became necessary to revise the book completely. At the same time it seemed desirable to include much new material in view of the use of the book as a reference book by established agents, and to change the title to describe more adequately its nature.

*Watson's Compound Interest and Annuity Loan and Valuation Tables*. Weld Book Company, Limited, 358 Adelaide Street, W., Toronto, Canada. 1949.

This is a reprint of these tables which have been published since 1884. The book contains tables as follows:

Table I, present value of *one* due at end of any month from one to 240, interest computed yearly and half-yearly; also due at end of any half-year from 40 to 90 half-years, interest computed half-yearly; and due at end of any year from 20 to 70 years.

Table II, present value of a monthly instalment of *one* payable at end of each month from one to 240.

Table III, present value of a quarterly instalment of *one* payable at the end of each quarter from one to 80 with first instalment becoming due at end of first, second or third month and successive instalments due three months later respectively.

Table IV, same as Table III except instalments are payable half-yearly.

Table V, same as Table III except instalments are payable yearly.

Table VI, instalment required to repay a loan of \$1,000 when instalment is payable monthly, quarterly, half-yearly or yearly; and the monthly, quarterly, half-yearly or yearly annuities which \$1,000 will purchase, interest compounded yearly and half-yearly.

Table VII, amount of *one* increased by interest, (1) at the end of any half-year from one to 50, interest compounded half-yearly; (2) at the end of any year from one to 50, interest compounded yearly.

Table VIII, amount of an annuity of *one* for same periods and rates as Table VII.

There are 44 rates of interest involved proceeding by halves from  $1\frac{1}{2}\%$  to  $12\%$  and the results of these rates compounded yearly and half-yearly.

#### PENSION FUNDS AND SOCIAL INSURANCE

Bomar, Fleming, and others. *Handbook for Pension Planning*. The Bureau of National Affairs, Inc., Washington, D.C. 1949. Pp. 368.

This is a very up-to-date and authoritative book on the most recent developments in pension planning. It leads the reader through the various phases of designing a plan, qualifying the plan from a tax and legal aspect, financing the plan, and estimating the costs.

After the plan is established chapters are devoted to amending or terminating the plan, taxation of the benefits paid to employees, bargaining on pensions and selling the plan to the employees.

There are several appendices. These contain a glossary of pension terms, the text of a pension plan, a model explanatory booklet for employees, with questions and answers, a trust agreement and negotiated pension provisions.

Cavan, Ruth Shonle; Burgess, Ernest W.; Havinghurst, Robert J.; Goldhamer, Herbert. *Personal Adjustment in Old Age*. Science Research Associates, Inc., Chicago, 1949. Pp. 217.

This discussion of an effort to measure aptitudes, interests, education and adjustments to old age tells how the guinea pigs came to be chosen, how the techniques were developed, checked and analyzed. The work was done largely on retired Methodist ministers, their widows, retired teachers, the alumni of a certain college more than 50 years out of college, and recipients of Old Age Assistance. The aim was to find life histories and current attitudes, when people faced or succumbed to "loss of status," loss of income, reduced usefulness and the loss of their own homes. Obviously there is some evidence that the means tests of Public Assistance are less satisfactory to the recipient than other pensions "as a right," or than living on personal savings. The loss of job or spouse are major crises in old age—shocks to more vigorous young people—more serious to those over 60. With the book can be secured the "score-sheet," "Your Activities and Attitudes." The completion of this form shows the reader of the book what the objectives of the study are. The use of these reports represents a promising extension of our knowledge of old age. Superficially the study seems to argue for social budgeting rather than the arbitrary division into the three categories of Assistance, Insurance and no benefit. To the authors the retention of work status on into old age seems the most satisfactory treatment. Childhood conditioning is also recognized as a potent determinant of old-age attitudes. The literature on gerontology grows both in volume and in quality.

Meriam, Lewis; Schlotterbeck, Karl; and Maroney, Mildred. *The Cost and Financing of Social Security*. Brookings Institution, Washington, D.C. 1950. Pp. 202.

The brief preface by President Moulton says that Congressional proposals—particularly for old-age and survivors insurance—must be viewed in the light of other governmental cash requirements. He quotes the authors' conclusions as to the inadvisability of using certain concepts of private voluntary insurance and their recommendation of a true pay-as-you-go system for those who are incapable of self-support—looking in each generation to the linkage of current revenues with current needs.

The introduction of four pages and the 15 pages of conclusions outline the swelling cost, the magnitude thereof and the competition for funds among the general social security measures and the other governmental activities. The added complexity following dollar-value-shrinkage is noted. The dilemma following the effort to use private insurance concepts for a public system is outlined. The reserves arising from the deferment are proportionally so small as to say to posterity: "We do the promising. You do the paying." Four alternatives are suggested: (1) Means test benefits; (2) Level, small benefits; (3) A double decker—small minimum, plus extras carefully limited to recognize status; (4) Double decker, small minimum, but larger recognition of earnings and perhaps periods of contribution. The authors' preference is for (1), then (2) and then (3)—with disapproval of (4).

For financing they favor a net income tax on all income at a flat rate—and no exemptions for low pay. They argue that the present is the time to make the change, when OASI has not got out of hand. The Conclusions of the authors on compulsory health insurance show a "choice of evils."

The ten chapters between the Introduction and the Conclusions deal with OASI (and disability), UC, Medical Care, Public Assistance, the Needy, Veterans Benefits, Private Pensions and Retirement Systems—and for the Over-all Security Systems, Summary of Benefits and Costs, methods of financing and "fiscal complications." The problem of what to leave out and what to include faces every writer on these subjects. The authors have made their choices practically—though the reader familiar with some of the mythology of this area will be surprised to see so many "boners" simply ignored rather than explained away.

Lewis Meriam has just presented the book and its essential points—so far as the time allowed him to present them—to the Senate Finance Committee in the last week of their hearings on Social Security. While the authors are aware of the collectivist dangers, little time is spent discussing them. It deals rather with many of the factors that influence costs, and uses without very much discussion figures prepared in the Office of The Actuary, Social Security Administration. There is a saving of padding, perhaps, but in taking a very different tack from the defenders of the "little-pay-little-go" system, the treatment is on the spare side. Many claims are simply questioned and not too rigorously presented. The authors may have erred on the side of overtolerance—but Mr. Merriam's and the Hoover Commission's previous work rounds out the treatment.

New York State Advisory Council on Placement and Unemployment Insurance, *Report for the Year 1949*. New York City. January 27, 1950. Pp. 47, 3 tables and 3 Appendixes.

This is undoubtedly the forerunner of many more attempts to rationalize the increasing costs of Social Security in OASI, Public Assistance and Unemployment Compensation. The employment conditions of 1949 are much superior to those of 1938, but the UC benefits of 1949 are some four times the amount in 1938. There are more beneficiaries, larger weekly benefits, longer periods of payment. The withdrawal of further rate credits in 1950 will hardly result in taking in enough contributions to meet the rising benefits, yet this withdrawal of credits represents a heavy increase in net contributions. The report does not deal quite adequately with the fact of the wearing off of selection, and the education that has taken place in claim-making. The legislative recommendations to go down to 1 worker from 4, of "equalizing contributions" and of legal representation of claimants in courts are all efforts to reduce discrimina-

tion between citizens. The ideal of minimizing inconvenience to the unemployed man is but hesitatingly laid aside. When dependents benefits are recommended, there is no suggestion to reduce the too high benefits to single lives. Not yet has the Sam Lewisohn recommendation to stress the catastrophic cases by a 6 or 8 weeks waiting period been rediscovered. Later reports will deal much more realistically with these problems.

*Social Security Legislation throughout the World.* Federal Security Agency, Social Security Administration, Division of Research and Statistics. Bureau Report No. 16. Pp. 180.

Five charts summarizing the principal legislative provisions of 57 countries have been prepared by Carl H. Farman and Veronica Marren Hale. Oscar Ewing has a very brief foreword, Isidore Falk a brief Preface and the authors 5 pages of introduction. By countries in alphabetic order, with the dates of the first and current laws, the tabulations cover coverage, source of funds, benefits, and administration. Should be excellent for reference.

*Social Security Revision.* Hearings before the Committee on Finance, United States Senate, Eighty-first Congress, Second Session on H.R. 6000. Parts 1 and 2. Testimony and Recommendations by the Social Security Administration and other Testimony and Statements. United States Government Printing Office, Washington 1950. Pp. 1130.

The first Part presents the official recommendations of the Social Security Administration for further extension of the Social Security Act—many charts and tables—and the familiar implication that the American citizen is essentially helpless—save as ever greater government expansion into his personal responsibilities takes place. The second Part reinforces the position of the Administration by underscoring the great needs everywhere through testimony from the State and local administrators of Assistance and Relief. Then come the reinforcement of the Advisory Council members and some ex-employees of the Social Security Administration. There is a beginning of reports from "Labor," and from Social Security Committees, and from what can be called the disinterested citizen. A further third volume of 1400 more pages is expected to appear early in April. Together with the 2500 pages of the Hearings before the Ways and Means Committee, this total of 5000 pages is a virtual treasure trove of history in the making—the matching of the collectivist doctrines and the more rugged individualist approaches, and all shades of opinion in between. "True pay-as-you-go" is gaining headway, not only among the Townsendites and the Social Budgeting advocates, but from Insurance men, employers and others. The facts that the Social Security Administration were "unregistered lobbyists," and that words like phony, flop, fraud and hoax are more freely used—see page 564 as illustrative—begin to register the need for study recommended by Curtis of Nebraska. So far we have an unfinished story in politics.

*Systems of Social Security: New Zealand.* International Labour Office, Geneva, 1949. Pp. 66.

"The present publication is the first of a series of handbooks on national systems of social security prepared by Governments according to a plan drafted by the International Labour Office. It is appropriate that this initial handbook should describe the New Zealand system, since the Act of 1938 creating that system has, more than any other law, determined the practical meaning of Social Security, and so has deeply influenced the course of legislation in other countries."

So starts the preface to this Report. The program has had a significance to the United States, since it borrowed "social security" from us, and it is more than any other law influential at the Brookings Institution in orienting Mr. Lewis Meriam in his thinking about the wisdom of the level benefits—as a floor—with a considerable use of needs tests, and the flat percentage basis for the earmarked tax. It is New Zealand too, which has elected a Conservative government, which does not hope to swing away from the cradle-to-the-grave governmental direction of its citizens' lives. It is New Zealand with its excellent mortality, its increasing basis for old-age pensions, and its potential heavy cost advance.

Like the Bureau Report on *Social Security Legislation throughout the World*, there is little critical appraisal for the Americans of what these programs are apt to mean in collectivist advance, in restricting the area of free enterprise, in monotony and loss of incentives. The New Zealand plan is unique in making fully clear that the impact of taxation is on the large salaries, and profits generally—in marked contrast to the method of presentation in England where the leveling has been more effective, and less straight-forward.

#### ACTUARIAL AND OTHER ARTICLES OF INTEREST IN RECENT PERIODICALS

In compiling this list, the Committee on Review has included only those papers which from their titles would appear to be of possible interest to members of the Society of Actuaries; and, in so doing, the Committee offers no opinion on the views which the various articles express.

References to only a limited number of papers on mathematical statistics and allied subjects are included. For a more complete list of such papers reference should be made to "Mathematical Reviews," sponsored by the American Mathematical Society and the Mathematical Association of America. Numerous articles on social insurance are listed each month in the "Social Security Bulletin" of the Social Security Board; and various articles are listed each month on social security, unemployment insurance, workmen's compensation, pensions, and health insurance in the "Monthly Labor Review." "Population Index," published quarterly by the School of Public Affairs, Princeton University, and the Population Association of America, lists numerous articles published throughout the world on mortality, fertility, marriage, divorce, and migration and on statistical methods of interest in such questions. "Statistical Methodology Index" in the *Journal of the American Statistical Association* should also be consulted.

#### JOURNAL OF THE INSTITUTE OF ACTUARIES Vol. LXXV, Part 1 (1949)

Address by the President—Sir G. H. Maddex.

The Distribution of Sickness—L. E. Coward.

The Dissolution of a Superannuation Society—R. C. B. Lane.

The Relation between the Distribution of Sickness and the Effect of Duplicates on the Distribution of Deaths—R. E. Beard and Wilfred Perks.

Hospital and Medical Care Coverage in the United States of America—Arthur Hunter.

An Investigation Into the Mortality of Diabetic Patients Attending the Diabetic Clinic of King's College Hospital—A. J. Steeds.

The Recent Trend of Mortality in England and Wales—W. S. Hocking.

## TRANSACTIONS OF THE FACULTY OF ACTUARIES

Vol. XIX, Part I, No. 170 (1949)

Inaugural Address by the President—A. R. Davidson.

Insurance against Inflation—G. H. Recknell.

Notes on Constant and Increasing Extra Mortality—S. C. Keppie and A. C. Stepney.

## JOURNAL OF THE INSTITUTE OF ACTUARIES STUDENTS' SOCIETY

Vol. VIII, Part 4 (April, 1949)

Discrete Random Processes.

Medical Examination for Contingent Assurances—H. Nagler.

The Nomographic Estimation of the Influence of Substandard Mortality on the Policy Value—G. Wünsche.

Vol. IX, Part 1 (July, 1949)

British Life Assurance Overseas—C. D. Sharp.

The Stock Exchange in Practice—H. G. Asbury.

The Apportionment of a Trust Fund by Mutual Consent of All the Beneficiaries—  
W. P. Goodchild.

The Measurement of Mortality and Fertility—R. H. Daw.

Part 2 (November, 1949)

Some Investment Implications of Changes in Companies' Capital and Structure—  
J. B. H. Pegler.

The Comparison of Salary Scales—M. T. L. Bizley.

Demography—Elfryn Jones.

## SKANDINAVISK AKTUARIETIDSKRIFT

Parts 3-4 (1949)

Maximum Likelihood Estimation of the Parameters of a Normal Distribution Which  
Is Truncated at a Known Point—A. Hald.Contribution to the Study of Grouped Observations. Application of the Method of  
Maximum Likelihood in Case of Normally Distributed Observations—N. F.  
Gjeddebaek.

On the Technical Functions of Invalidity Insurance—J. F. Steffensen.

Approximate Values of Premium Return Assurances—S. J. Bjoraa.

Sampling Distribution from a Compound Normal Parent Population—Hannes Hy-  
renius.

Mortality Data and the Binomial Probability Law—H. L. Seal.

## BULLETIN—ASSOCIATION ROYALE DES ACTUARIES BELGES

No. 55 (1949)

Sur le Schéma de Pólya-Eggenberger à deux variables aléatoires ("On the Pólya-  
Eggenberger Scheme of Sampling in Two Dimensions")—R. Consael.Note relative aux tirages contagieux ("Note on Connected Drawings from an Urn")—  
R. Risser.L'enseignement actuariel aux Pays-Bas ("The Actuarial Courses in Holland")—Alting  
von Geusau.

INSTITUT DOS ACTUARIOS PORTUGUESES, BOLETIM  
(1947)

Sur des limites pour les probabilités des décès, en fonction des données empiriques  
("On the Limits for the Probabilities of Death, a Function of Empirical Data")—  
R. Campeao.

PROCEEDINGS OF THE LIFE INSURANCE ASSOCIATION OF AMERICA  
(December, 1949)

Life Insurance and Freedom—H. E. Stassen.  
1949 Record of Life Insurance Investments—J. J. O'Leary.  
Association's 1949 Legislative and Legal Activities—E. M. Thoré.  
1949 Report of the Manager—B. E. Shepherd.  
The Policyholder's Stake in Sound Economics—A. V. Call.

PROCEEDINGS OF THE AMERICAN LIFE CONVENTION  
(1949)

President's Address—W. E. Bixby.  
Charged with a Public Interest—D. A. Forbes.  
The Penalty of Prominence—G. A. White.  
Report of the Actuary—A. N. Guertin.  
Reinsurance Sidelights—J. H. Oden.  
The Trend toward Cheaper Money and Its Significance to Life Insurance—C. L. Benner.  
Economic Strength through Life Insurance—L. A. Lincoln.  
The Trends and Future of Capital Formation—Stahl Edmunds.  
The American Century—W. W. Williams.  
Soundness of the Oil and Gas Industry—L. W. MacNaughton.

LEGAL SECTION OF THE AMERICAN LIFE CONVENTION  
(1949)

The Documents for a Sale and Lease-Back Transaction—Vincent Keane.  
Binding Receipts—Three Decades Later—W. L. Wilkinson.  
Doctrine of Foreseeable Danger as a Defense under Double Indemnity Provisions—  
W. B. Cozad.  
Highlights of Legislation and Litigation in 1949—R. H. Kastner.  
Insurance Settlements and the Marital Deduction—L. M. Bregy.  
Review of Corporation Pension Plans as They Affect Life Insurance—G. B. Gose.

PROCEEDINGS OF THE LIFE OFFICE MANAGEMENT ASSOCIATION  
1949 Annual and Special Conferences

Some Problems Involved in Establishing a Group Insurance Department—W. A. Milliman.  
Recent Developments in Life Office Planning—H. A. Finley.  
Recent Developments in Life Office Planning—G. C. Boddiger.  
Area of Productive Office Cost Research—George Aitken.  
Development and Use of a Manual of Organization and Operations—P. C. Buford.  
Budgetary Control of Home Office Operations—J. D. McSpadden.  
The Planning Function in a Small and Medium Size Company—G. C. Boddiger.  
Elimination of the Premium Receipt—G. W. Skilton.

ASSOCIATION OF SUPERINTENDENTS OF INSURANCE OF THE  
PROVINCES OF CANADA  
(1949)

Reports of Committees on Valuation of Securities, Annual Statement Blanks, Life Insurance Legislation, Fraternal Societies, Bailees Insurance, Licensing and Regulation of Agents, Automobile Insurance Assigned Risk Plan, Automobile Insurance Legislation and Forms, and Insurance Law Revision.

PROCEEDINGS OF THE LIFE INSURANCE INSTITUTE OF CANADA  
(1948-1949)

Life Insurance on the March—A. G. Nairn.  
Office Organization in a Life Insurance Company—G. E. Brown.  
Mortgage Investments—L. S. Davis.

YEAR BOOK OF THE CANADIAN LIFE INSURANCE OFFICERS ASSOCIATION  
(1948-1949)

Remarks of the President—W. M. Anderson.  
Report of the General Counsel—R. L. Foster.  
What's Ahead for Life Insurance Sales Management?—W. R. Jenkins.  
"I Believe"—Don Henshaw.

PROCEEDINGS OF THE INSURANCE ACCOUNTING AND STATISTICAL ASSOCIATION  
(1949)

Check Writing and Bank Reconciliation Using Punched Card Equipment—Karl Freytag.  
Policy Loan Accounting—Joe Hughes.  
Use of the Electronic Calculating Punch for Insurance Calculations—J. T. Hoyt.  
Persistency Records in Accident and Health Insurance—R. B. Savage.  
Inclusion of Accident and Health Accounts in Life Insurance Annual Statements—E. H. Minor.  
Proposed Combined Fire and Casualty Annual Statement—E. C. Fay.

JOURNAL OF THE AMERICAN SOCIETY OF CHARTERED LIFE UNDERWRITERS  
Vol. IV, No. 2 (March, 1950)

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