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The Actuary

A MESSAGE FROM OUR PRESIDENT

It is obvious that the long-term status of the actuarial profession and its significance in society, as well as the day-to-day functioning of the Society, depend crucially on the dedication of time and energy by the people who serve on Society committees.
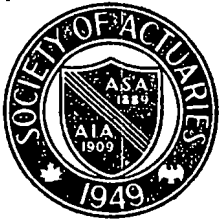
I want to use this notice in *The Actuary* to express my appreciation and that of the Board of Governors and the members and students of the Society of Actuaries to those individuals whose volunteer work enables the Society to carry out its mission of service to the actuarial profession and the public.

I wish it were practical for me to write a letter of thanks to each individual listed in the committee roster section of the *Year Book.* However, with close to 850 people involved in committee work on behalf of the Society, this is impossible. The fact that there are so many people involved in this way is surely one of the great strengths of the Society.

Julius Vogel

PROF. POLLARD'S MORBIDITY-MORTALITY TABLE

by Louis Levinson

A "morbidity-mortality table," as conceived by Prof. A. H. Pollard, F.I.A. of Australia, is a multiple-decrement table akin to the familiar combined mortality and disability table. But, while the conventional double decrement table is the result of an investigation that takes account concurrently of the pair of decrements revealed by a single study, the decrements in the morbidity-mortality table come from independent, though doubtless properly comparable, sources.

The morbidity-mortality table has been set forth in Prof. Pollard's paper, *The Interaction Between Morbidity and Mortality.* It was submitted to the Institute of Actuaries this year, and is expected to appear in J.I.A. Vol. 107.

THE SOCIAL SECURITY DISABILITY AMENDMENTS OF 1980

by Bruce Schobel

On June 9, 1980, President Carter signed into law the Social Security Disability Amendments of 1980. This article covers only the Disability Insurance program changes (there are many others), which fall into two major categories: (1) benefit amounts, and (2) program administration.

Benefits

Under previous law, the five years of lowest indexed earnings were excluded in caculating average indexed monthly earnings (AIME). Consequently, benefits to workers disabled at younger ages were based on a more favorable proportion of their earnings than those to older workers. The 1980 Amendments specify which years are to be excluded, starting

"PROJECT UPDATE"

by Harvey Halpert

On March 19 the Actuaries Club of New York heard a report by Messrs. Dale R. Gustafson and James J. Murphy on the sweeping change in coverage on old policies that Northwestern Mutual Life, is offering its policyholders.

The Problem

The U.S. 1959 Income Tax Act fails to treat holders of participating policies within a single company evenhandedly in respect of the amounts that must be charged against their dividends to provide for the portion of the tax that is levied against the company's investment income. This is partly because the tax base is the excess of investment income over the policy reserve interest requirement, and partly because the "'Menge formula" (10-to-1) rule used for adjusting for differing interest rates within a portfolio of policies develops serious inaccuracies when the difference between earned, and reserves interest rates is as large as it has recently become. This injustice among policyholder groups has been specially troublesome in the speakers' company because more than half their policy reserves are on a 2% or a 2¼% interest rate. New policies since January 1978 are valued at 4% interest.

The Solution

It was decided to offer policyholders a choice between (i) having their policy face amount increased, reserves and cash values henceforth to be at 4% interest, or (ii) keeping their present policy just as it has been. The premium would be the same in either event. This means equating the current policy reserve (and the cash value*) for the old face amount

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*To keep before-and-after cash values as well as reserves the same, requires special treatment to keep what used to be called the "surrender charge" unchanged.

Morbidity-Mortality Table

Origin of the Idea

The seed of this analytical system had been in the author's mind for more than thirty years. The current stimulus for the paper was the formation of a committee on factors affecting mortality and length of life by the International Union for the Scientific Study of Population, which committee was ushered in with a comment that

"the traditional demographic and actuarial approach to mortality produces diminishing returns...(and) closer links with other biomedical disciplines, with genetics or biology, are essential if we wish as demographers to improve our contribution to the study of mortality."

Advantages Cited

Prof. Pollard sees his system as productive of numerous useful measures, notably: the chance at birth of incurring a specified disease during any subsequent period; the chance of dying from the disease; the relative survival rate: the percentage of the population afflicted by the disorder; the incidence of the disease per 100,000 of total population; the death rates from the disease; the median age of incurring the ailment and the average subsequent survival; the expectation of life free of the disease, etc., etc.

In justifying the unconventional approaches employed, the author points out that demographers have used various mixes of data for estimating longevity in countries handicapped by inadequate statistics. By applying to diverse material the ratios and empirical formulae found to apply universally, demographers, it is asserted, have been able to obtain satisfactory results.

Table Format

The author's tables, displayed for illustration in his paper, require eleven columns to exhibit numbers living, numbers incurring the disease being studied, and deaths from the disease and from other causes. Of major interest is the combining, as already mentioned, of material from different sources. In the examples presented, experience of the total 1976 Australian population is fitted with experience of cancer incidence and mor-

ELIZUR WRIGHT'S DAUGHTER LUCY

Lucy Jane Wright (1842-67), rather than Emma Warren Cushman (February issue), might have become the actuarial world's first Lady Fellow. Eduard H. Minor, who remembered reading about her in T. O'Donnell's book of the 1930's, *History of Life Insurance in Its Formative Years*, and Stephen L. Smith, who had his company's records perused for details of her life in Maine, combined to supply the story for this sketch.

As Mr. O'Donnell recounted, Elizur Wright put his daughter Lucy, and his other children, to work on his actuarial calculations. Thus Lucy, in 1858-66, learned the rudiments and more of actuarial science.

On May 2, 1866, Miss Wright was appointed actuary of Union Mutual Life Insurance Company of Portland, ME. From the pages of that company's history (*A Maine Heritage*, George Stuyvesant Jackson, 1964), we learn that she had an impressive background: "By the time she was 15, she had not only mastered college mathematics (without ever going to college) but was well versed in civil and mechanical engineering." And yet "she was no solemn young mathematical prodigy . . . but . . . a born mimic and master of impersonations, a talented artist and amateur playwright . . ."

Sad to report, onslaught of tuberculosis forced Miss Wright to resign after seven strenuous months as an actuary. She died on May 26, 1867—22 years before the Actuarial Society of America was founded. To her goes the honor of having been the first North American woman actuary.   ☐

tality compiled by the New South Wales Cancer Registry for 1972. Morbidity embracing other diseases came from the Intercontinental Medical Statistics International, formed in U.S.A. 1954 and since extended to other countries.

Comment

The author's analytical procedure strikes this observer as being thoroughly worthy of study by actuaries on this continent.   ☐

BOOK REVIEW

For our readers who relish satire and hilarity at the expense of people like ourselves, it seems safe to recommend that you risk a year's subscription to this *Journal* so you can find out whether its contents tickle your funny-bone as they do this reviewer's.

The *Journal's* editorial staff is impressive, consisting of people in 38 disciplines. To draw a sample, #1 is Astronomy, #11 Genetics, #21 Neonatology, and #31 Psychology. The actuarial profession is not represented on the current list of Associate Editors. Assuming that the numbering is to be taken seriously—it is hard to know when one's leg is being pulled—the magazine is in its 26th year, and has been a quarterly for seven of these years.

Its major content is of three kinds. There are derisive descriptions, some of them ribald, of pseudo-research, bearing titles such as:

> *A Refutation of the "Proof" Th*
> *Heaven is Hotter Than Hell*
> *The Rational Number Shortage*
> *A Model of Secrecy*
> *Predictive Documentation by*
> *Computer*

Then there are quotations from serious articles and speeches that, at least when quoted out of context, range from whimsical to uproarious. And there are tongue-in-cheek Letters to the Editor.

Each issue's cover, of the three we have seen, displays a caricature of some scientific object.

The moving spirit, who is said to publish it at a negative profit out of his laboratory, is George H. Scherr, Ph.D. To describe the product, as one reviewer has, as a ray of sunshine to lighten one's despair, seems fitting.

E.J.M.