The Actuary

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EDITORIAL
"RENDER THEREFORE TO ALL THEIR DUES"
- Romans 13:7

At the Actuarial Society's 40th anniversary in 1929, Archibald A. Welch F.A.S., then president of Phoenix Mutual Life, ended his reminiscences of early actuaries thus:

> "I should like the historian of our Society forty years hence to choose (as his text) when he is describing you, the active members of our Society today: Genesis, sixth chapter, fourth verse: "There were giants in the earth in those days."

In hindsight, what Biblical text the actuaries of that generation merit is a matter not considered here. But we do believe they deserve better treatment than has been accorded them in the Society's 1984 Speaker's Kit (announced elsewhere in this issue).

A section of that kit labeled "Important Dates In The Development Of Actuarial Science", gives one listing for 220 A.D. (Ulpian's table of life expectancies), five listings for the 17th century and seven for the 18th. Apart from dates of formation, merger and dissolution of actuarial bodies, one finds five listings for the 19th century, the latest being 1875, *and none at all in the 20th century.*

Surely the thought that there have been no worthy developments in our profession since 1875 is a staggering one for our members and a source of material discouragement to high school and college students who might consider joining us.

We had occasion recently to invite views on the achievements of the 1900-1929 era from some of today's veteran actuaries. Our correspondents easily identified original thinkers in that thirty-year period, linking, for instance, Franklin B. Mead with the science of underwriting and pricing of substandard life insurance, M. Albert Linton and O. J. Arnold with innovations in agency compensation, and several professors with fostering actuarial courses in U.S. and Canadian universities.

And the years since 1929 have witnessed pioneer actuarial work on such subjects as unemployment and social insurance, nonforfeiture benefits, forecast tables for life annuities and effective use of computers in actuarial operations. The dates to be attached to some of these might well be the publication dates of Society papers or committee reports that deeply influenced thinking and subsequent actions.

Let us make sure that young people realize that our profession did not pass its final frontier in 1875.

E.J.M.

REFLECTIONS ON "ACTUARIAL MATHEMATICS, VOL. 1"

by John M. Boermeester

Ed. Note: Learning that the author of the 1956 Society paper "Frequency Distribution of Mortality Costs" has reviewed our new life contingencies text, we asked him what he would say about it to an imaginary group of actuaries able to stay with him for but a few fleeting minutes. This is the result.

Greetings! You may be described as a motley group of actuaries — but surely only in the sense that your activities embrace a wide variety of pursuits. You achieved Society membership after studying life contingencies according to Jordan, or perhaps Spurgeon; you also met the requirements of your generation in probability, statistical theory and numerical methods. What is it that unites your "motleyness"? The oustanding bond is that you are recognized as authorities in measuring the impact of contingent events on diverse types of financial security plans.

Because of this, you have become responsible for conveying to one or more of your many publics what the effects of randomness in any of these plans might be. And this implies responsibility to use the best available statistical tools for analyzing the effects of randomness in the elapsed times to death, disability, or retirement and in other elements such as salary scales, interest and inflation rates. The effects of randomness are often too significant to be left out of consideration.

Neither Jordan's nor Spurgeon's text explored uses of statistical tools to analyze the effects of, say, random time till death on premiums and reserves. Yet, ability to use such tools flows naturally from statistical theory that nowadays is taught in undergraduate courses offered in many of our universities. In effect, the new Society text brings us, perhaps belatedly, into a new era in the study of life contingencies.

Some Illustrations

Let's examine a few possible applications suggested by formulas developed in the text.

First item: What is the premium for a whole life policy such that 95% of the time this premium will cover random mortality fluctuations? The answer will not be the expected value obtained from a formula in Jordan. If the premium

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