



SOCIETY OF ACTUARIES

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Letters

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And, I fear, at that point the birds may too late realize they worried too much about plumage and too little how they might best serve the forest.

'Tis far better that the birds emphasize what birds are uniquely qualified to do, lest rodents and other creatures over-run the woods. For if that occurs, they can preen all they want, while they squawk and eventually vanish.

Bartley L. Munson

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Too Many Old People

Sir:

Arthur Pedoe has contributed yet another interesting and informative note entitled "Too Many Old People" in the December issue of *The Actuary*. I believe that a few additional facts might enlarge the future demographic picture.

Mr. Pedoe states that the proportion of the population in the United States aged 65 and over is 10%, and it is increasing. He also points out that almost half of the population may be assumed to be non-productive because they are under age 20 or over age 65, and implies that this will be an increasing burden in the future.

According to the latest population projections made by the Bureau of the Census (*Current Population Reports, Series P-25, No. 601*), the intermediate estimate based on improving mortality and ultimate fertility at "exact replacement" level shows that the aged population will increase slowly from 10.5% at present to 11.9% in 2010, and then rapidly until reaching a level of 16.5% in 2030 and thereafter. At the same time, however, the population under age 21 will decrease relative to the population at the working ages. The ratio for those aged 20 and under and those aged 65 and over to the total population will actually decrease from the present 47.4% to a low of about 42% in 30 years, and then will rise slightly to an ultimate level of about 45%.

In the other two projections of the Bureau of the Census, which bracket the

intermediate estimate, the proportions of the population at the non-working ages are not too different. Thus, where very low fertility is assumed, the ultimate proportion is about 44%, whereas when very high fertility is assumed, it is about 48%. Accordingly, there seems to be not so much of a problem of increased dependency over the long-range future as some might imagine when they consider only the aged population.

Robert J. Myers

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UNDERWRITING THE FELINE RISK

A true test of one's actuarial ingenuity Will be found in the pricing of a feline annuity.

The cat, you see, lives nine times over; Man lives but once, but generally dies older.

How many lives has the critter been through?

And once you find out, what then do you do?

You must be certain that you have the facts

Relevant to your given class of cats.

If the annuity is to be soundly underwritten

You'll need the cat's history from the time it was a kitten.

From said report, which the vet has supplied,

You'll know how often this feline has died.

Many an actuary has become very confused

When faced with calculating the feline q 's.

Try as he might, the formulas refuse

Until he discovers the feline μ 's.

The resulting curve is that of a helix

Appropriately named the Curve of Felix.

Once you've got everything commew-tated

You'll no doubt be pretty damn frustrated

A trivial exercise and nothing more?

True, but more than likely, it'll be on Part 4.

J. G. Hubbell

Riskfree Selection

Sir:

I feel no discussion today among actuaries of problems in predicting future mortality among annuitants could be complete without considering the research of C. D. Sharp, FIA. The following report on that research appears in JIA Vol. 103, Part II.

Loren G. Logan

"Mr. C. D. Sharp was reminded that a number of years ago he had been very much concerned with the mortality of annuitants and had wondered whether it would be practical for the insurance company to sort annuitants into the good lives and the bad lives. Just at that time he was in Hawaii and met an American lady (to whom he referred as Mrs. G.) who was a graphologist. He was much impressed by her abilities and he was even more impressed when she told him that she could diagnose disease from handwriting. Half jestingly, he had asked if she could estimate longevity from handwriting, to which she had replied that she could. The speaker was so impressed by the lady that on returning to London he had arranged for a statistical test.

"One hundred cases, all male lives who had effected annuities at age 65, were taken, 50 of whom had died and 50 of whom were still living. The lady was asked to examine their signatures and indicate whether the people were likely to be short-lived or long-lived. Mr. Sharp quoted from the notes made at the time: 'Reverting to the first experiment carried out in London, on the 100 cases where she was asked, among other things, to select those annuitants likely to live longest, it will be seen that there was only 1 death in 25 cases.' She was remarkably accurate in the way she sorted out the short-lived and the long-lived. Obviously their data were small and perhaps there was some special reason, so they ran another test. Of the 35 cases where Mrs. G. had indicated a short expectation, 29 were dead, and of the 25 where she indicated a long expectation only 1 was dead. In some cases she had been doubtful and those had been treated rigorously as errors. Mr. Sharp did not think on the statistics he had given he could claim any great breakthrough, particularly as he was not altogether clear how he would use the results even if further experiment established the validity of the approach. Perhaps some young actuary who wanted to spend an entertaining few months of his professional life could be given some material to work on!"

Editor's Note: Mr. Sharp should not give up. The following appeared in a recent issue of "The Economist."

Handwriting Analysis

by Consultant Graphologist advising Companies, Banks Management Consultants and private individuals internationally. Confidential reports on character and potential of prospective personnel and associates . . .