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ACTUARIAL EDUCATION AND RESEARCH FUND (AERF)

Ed. Note: This description is taken from Morton D. Miller's report at the October 1979 Society Annual Meeting.

The Actuarial Education and Research Fund was organized in 1976 to advance knowledge of actuarial science, and to respond to public needs for education and research in our fields. It is managed by 12 directors, two from each of its six sponsoring actuarial bodies. This Board is organized into three subcomittees, to consider projects, respectively, for life and health insurance, for property and casualty insurance, and for pension plans.

A leading achievement so far has been the Fund's role as contracting party on behalf of our profession in launching a major study of public employee pension plans with relation to the issue of universal coverage under Social Security. Also under way are (1) publication of writings of the late Hugh H. Wolfenden, and (2) preparation of a text on loss distributions that will have application to rating and to reinsurance. Several other projects are near the announcement stage.*

AERF has taken over administration of the David R. Halmstad Memorial Fund, income from which is to be used to award annual prizes for estimable actuarial papers.

Obtaining money for the Fund's activities is naturally a matter of continuing concern. Those persons and organizations who desire to further the interests of our profession, and those who have special reason to expect benefits from specific projects, are counted upon to supply unrestricted and specified contributions, respectively.

*One of these is the social insurance monograph described elsewhere in this issue. □

HISTORICAL FRAGMENT

"She was the first woman . . . to be honored with membership in any American or European actuarial society." So reads the obituary of Emma Warren Cushman in Vol. XXIV of our old *Transactions.*

But what were the circumstances that led to Miss Cushman's election in October 1895—when the Actuarial Society was but six years old, and when acceptance of women into male strongholds was by no means easy? We hope that, even 85 years later, some reader will be able to throw some light on this.

The record shows that this pioneer lady had, just a month before her election, been a member of the United States delegation to the First International Congress of Actuaries in Brussels. That autumn the Actuarial Society, meeting in Montreal, elected nine actuaries to Fellowship, among whom Miss Cushman was the only North American. Seven of the eight others were officers of the Institute, the Faculty or the Congress itself. The eighth was Tsuneta Yano, a distinguished Japanese actuary. Was her election in some way a consequence of her attendance at the Congress?

It appears that in Great Britain at that time the door to Fellowship for a woman was firmly closed; we do not know what was the case on the European mainland. It was not until 1919 in London—following action to the same effect a few months earlier by the Faculty in Edinburgh—that the Institute unanimously adopted a resolution as follows:

> That women be admitted to the Institute on the same conditions as men, and that the masculine shall include the feminine in all the Regulations of the Institute.

We would welcome observations from overseas readers on such questions as

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HOSPITAL AND MEDICAL CARE NEEDS —SEEN 20 YEARS LATER

by John M. Bragg

In 1959 I had the honor of moderating a Society panel on Hospital and Medical Care Needs; panelists were Morton D. Miller and W. Sheffield Owen, C.L.U. Now I am in the editor's select group of old-timers asked to say "what we worried about—and what happened". (*Ed. Note: First in this series was in the December* 1979 *issue*).

That discussion majored on a resolution that had been adopted six months earlier by the Health Insurance Association of America. The statement had been described as "probably the greatest forward step in the history of insurance in our time." There was no use being modest! With 20/20 hindsight I can now divide that resolution's recommendations into two groups:

Successes:

1. Cancellations of individual policies must be minimized.

2. Guaranteed renewable policies must be developed (at a "jet-propelled" rate, said Morton Miller).

3. Group conversion privileges must become widely available.

Shortfalls:

1. Substandard A&H coverage without waivers must be developed.

2. Individual coverage over age 65 must be developed and greatly expanded.

3. Groups must cover retired people.

Coverage over age 65 was our dominant theme. This was recognized as *the crucial need*, to head off the "hundreds of bills" before Congress to provide health care for the aged. Insurance people were estimating that, although only 40% of the aged population was covered, this would rise to 90% by 1970.

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Historical Fragment

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what efforts, if any, had preceded this resolution, and when the first lady Fellows were admitted to actuarial bodies outside North America.

Just the smallest of enquiries among today's Society members have shown that few have been able to come even fairly close to identifying 1895 as the admission date of our first lady Fellow. The commonest estimate we heard was the decade of the 1920's, which, as shown in the table on page 5 of the January issue, was correct for the first lady who qualified by examination. (One estimate given us was as late as 1940). Here then is a biographical capsule on Miss Cushman.

In September 1875 at age 28, after having taught school for a time, she was appointed to a clerkship in the Massachusetts Insurance Department. Twenty years later (1895, the same year as the two events described above) she was given entire charge of the actuarial work of that Department, with the title of Actuary. This was shortly after William S. Smith, the previous holder of the post and the man credited with having taught Miss Cushman actuarial science, had left to become actuary of the John Hancock Mutual Life Insurance Company. By 1907 her salary had reached $2,000 per year, perhaps the equivalent of $30,000 today.

Miss Cushman stayed in that Insurance Department for a total of 42 years. Attainment of age 70, in 1917, dictated her retirement, but not the close of her actuarial career. In 1918—conceivably to fill a gap caused by absences for war service—she entered the actuarial department of John Hancock. Certainly this was not a favor conferred on her by her original mentor; Mr. Smith had died in 1909. Miss Cushman stayed with John Hancock until a few days before she died in February 1923, at the age of 76.

E.J.M.

ESTIMATING SOCIAL SECURITY BENEFITS FROM PRESENT EARNINGS

by Richard Carson

The 1977 introduction of Average Indexed Monthly Earnings (AIME) into the U.S. Social Security benefit formula makes it necessary to seek new ways to estimate the Primary Insurance Amount (PIA). I have found the following relationships useful and sufficiently accurate.

1979 *Monthly Earnings (E)*	*Approximate AIME*
Up to $1,025	0.955 E
$1,026 — 2,200	$(.0035E)^3 - (.0209E)^2 + 1.317E$
Over $2,200	$1,258

after which PIA comes directly from these formulas:

PIA (1979) = 90% of first $180 of AIME + 32% of next $905 + 15% of excess.
PIA (CYB + 65) = PIA (1979) $\times\ 1.07^{CYB-1914}$, where CYB is calendar year of birth.

The relationships hold if the progression of past earnings has matched the indices that were promulgated to calculate AIME's, and future earnings and average total earnings will increase at a constant 7% annually. The approximation was made by fitting a curve to the mean and the two extremes of calculated AIME's.

My approximation produces PIA's that are very close to those that an exact calculation (using the prescribed assumptions) would give, except when the period to retirement age is long. I would be interested to know what methods of estimation other actuaries are using. □

GEORGE RYRIE, F.S.A., F.S.A.

The discussion of unhallowed Fellowships (October 1979) has evoked the following revelation from Mr. Ryrie:

"I passed my Fellowship Part Two with the examinations of April 22, 1931, being then aged 23 years, 11 months, 19 days. In due course I received a Fellowship scroll signed by then President Wendell M. Strong showing that I had been admitted as Fellow on April 22, 1931. It was accompanied by a bill for the Fellowship fee of $25.

"I had been paying the Associateship fee of $15 and my Edinburgh blood rebelled at paying for a status that would be denied me till I had reached the magic age of 25. My protest was accepted.

"On June 1, 1932 I paid the regular Fellowship fee and was rewarded by another Fellowship scroll, signed by John S. Thompson, indicating that I had been admitted Fellow on May 3, 1932, my 25th birthday. This seems to place me in another category—a double Fellow.

"I am rather proud of the two Fellowship scrolls, suitably framed and hanging on my office wall.

"Another name for your list of those who completed Fellowship exams before age 25 is that of William M. Anderson; Bill was not quite 23 years old when he passed his final exam in 1928. A point of interest about him is that although he became President of the Society and was awarded an Honorary Fellowship by the Faculty of Actuaries, at no time in his career with his company did he ever hold an official position with the word 'actuary' in the title."

The extraordinary number of Canadians who now report having qualified when little more than children suggests a positive relationship between frostbite and actuarial concentration. □

CHINESE DELICACY

Thank you to John Angle for sending us a translation into English of a rejection letter to would-be contributors used, it is said, many years ago by a Mandarin Chinese Journal of Economics:

> We have read your manuscript with boundless delight. If we were to publish your paper it would be impossible for us to publish any work of lower standard. And as it is unthinkable that, within the next thousand years, we shall see its equal—we are, to our regret, compelled to return your divine composition, and to beg you a thousand times to overlook our short sight and timidity.

The erudite Mr. Angle picked this up from the October 1979 *Journal of Political Economy*, which credited it to N.B. Barrett, "Publish or Perish," in the August 1962 *Journal of Thoracic and Cardiovascular Surgery*. □