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## CHICAGO PANEL DISCUSSION ON EDUCATION DRAWS COMMENTS

by John C. Angle

(This article is the substance of a talk at the Nebraska Actuaries Club, Dec. 14, 1967).

If the purpose of the panel at the Chicago meeting was to stimulate thought about the Society's educational system, then, in my case, this objective was attained. I wish to react, to record comments, and say what I would do given a free hand. There is recognition that the forces of change, both within and without the world of the actuary, may have somehow rendered less than perfect the educational procedures that have served us so well for many years.

Education is becoming recognized as a lifelong activity to enable us all to stay abreast of the developments of our day and age. Nowhere is the awareness of change greater than in the world of education — an awareness that evidently exists within our own Education and Examination Committee.

### Information or Principle?

Now as to some reflections of my own. The first would be to ask if we have not been misled in a quest for "comprehensiveness" into a set of Fellowship examinations that are overly concerned with information. Our associateship examinations deal largely with the mathematical techniques that James C. Hickman rightly calls the key element in the actuarial approach. But such topics as life insurance law, investment of life insurance funds, welfare plan disclosure laws, and social insurance often involve information rather than principle.

Alfred North Whitehead, writing on "The Aims of Education" in 1917, cautioned against "... 'inert ideas'—that is to say, ideas that are merely received

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## NEW 'FRINGE BENEFIT' — REJUVENATION

by Arthur Pedoe

It arose at a recent meeting of the Canadian Pension Conference.

A panel of officers in charge of staff benefits outlined their company practices regarding fringe benefits for employees, active and retired. In one company the benefits enjoyed by the retired seemed not only elaborate, but much was said of plans for the extension of these benefits in the future.

When questions were asked from the floor, the writer enquired as to the business carried on by this company which could be so profitable as to afford such elaborate and generous benefits for retired employees. As to future extensions he enquired whether they had considered the benefit to meet the needs of the aged mentioned in *The First Book of the Kings*, Chapter 1, Verses 1 and 2.

*"Now king David was old and stricken in years; and they covered him with clothes, but he gat no heat.*

*"Wherefore his servants said unto him, 'Let there be sought for my lord the king a young virgin; and let her stand before the king and let her cherish him, and let her lie in thy bosom, that my lord the king may get heat.'"*

### A Scientific Basis

It is often possible by a touch of derision to place an overstatement in proper perspective — and this was the writer's intention. However, it was a million to one chance that the writer, in the course of his reading, and within a short time after the meeting, should come across two references to King David's plight which indicated the remedy had a scientific basis, with a

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## SOCIAL SECURITY AMENDMENTS REVIEWED

by Robert J. Myers

After almost a year of extensive legislative consideration, significant amendments to the Old-Age, Survivors, and Disability Insurance and Medicare programs were enacted into law at the end of 1967. The following are the most important changes:

(1) Monthly benefits for all insured beneficiaries are increased by 13%, with a minimum primary insurance amount of \$55.

(2) Liberalized benefit protection is available for dependents and survivors of women workers. The same insured status requirements as for men would be applicable, instead of the stricter ones of previous law.

(3) Monthly benefits are provided for disabled widows and dependent widowers at ages 50-61. The scale of benefit is reduced from the 82½% of the primary insurance amount payable at age 62 and the smaller 71½% at age 60, according to age at entitlement, to 50% at age 50.

### Disabled Young Workers

(4) Insured status for disability benefits for young workers under age 31 is liberalized; essentially, it requires coverage in half the time since age 21 and for those disabled under age 24, coverage is required for half of the last 3 years.

(5) The definition of disability is made more detailed in order to clarify the concepts contained in the previous law.

(6) The retirement test is liberalized by raising the annual exempt amount to \$1,680.

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## Education Discussion

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into the mind without being utilized, or tested, or thrown into fresh combinations. In the history of education, the most striking phenomenon is that schools of learning, which at one epoch are alive with a ferment of genius, in a succeeding generation exhibit merely pedantry and routine. The reason is that they are overladen with inert ideas. Education with inert ideas is not only useless; it is, above all things, harmful."

The panel notes are a marvelous reference source for the practicing actuary. However, textbooks and panel notes are perhaps a less effective way of teaching "information" subjects than requiring reading and discussion of original material.

### "Core Knowledge"

We are not alone in confronting a syllabus that may have grown too large. Dr. Oliver Cope, Professor of Surgery at Harvard Medical School in the October, 1967, issue of *Harper's Magazine*, wrote on "The Future of Medical Education," and the need to improve the quality of such education, which has changed since 1910 only by the addition of years of specialty training to eight years of college and medical school. Dr. Cope wrote:

"The expression 'core knowledge' has recently become fashionable. In medicine it is applied to the information which every doctor should acquire in order to be competent in his own field and also aware of the outside fields impinging on his immediate concern. The 'core knowledge' idea is a hangover from the 1900 goal of educating the general practitioner to know almost everything. But in fact today 'core knowledge' for the surgeon is one thing and quite another for the dermatologist, neurologist, public health officer, or other specialist.

"The present curriculum and period of apprenticeship are too lengthy — and too sterile — to compete with more challenging fields for intellectually gifted students."

Dr. Cope's remarks can apply to us if we substitute "Canadian actuary, United States actuary, consulting actuary, group actuary, ordinary actuary, data processing executive, underwriting officer," and so forth for the medical

specialists he mentioned as each requiring "core knowledge."

Let me next suggest that the present structure of the examinations together with an insistence upon applying the same "standards" to each part leads to the fallacious conclusion that all subjects are of equal importance. Thus, we devote approximately the same number of examination hours to compound interest and finite differences as to the investment of life insurance funds.

It is possible to conceive of an actuarial educational system in which satisfactory attendance at a one week seminar on life insurance company Federal Income Taxation, or life insurance accounting, or social insurance, could be considered as satisfying a given requirement for Fellowship. I believe that there are many universities which might be interested in sponsoring such seminars, as well as members of the Society who might be interested in attending them from time to time as refreshers or in serving as course instructors.

### Continuing Education Needed

The life insurance business is becoming aware of the need for continued education of its staffs. As my company prepares to install a third generation computer, we find it necessary to send each programmer to another city for five weeks of intensive training.

In converting a year ago to a 62 CFO, we traced one operating difficulty to a common lack of knowledge of the elements of accounting. To remedy this situation we proposed a course in bookkeeping and accounting. Over a tenth of our home office staff was interested. Many also wanted to take the LOMA course in life insurance accounting. We were in the position of having a class without an instructor. The gap was filled with the help of Professor Robert H. Raymond, who will head the Department of Accounting at the University of Nebraska College of Business Administration.

Dr. Raymond's doctoral thesis was on life insurance accounting. He is the author of an article, "Life Insurance Company vs. Traditional Financial Statements," that appeared in the December, 1965, issue of *The Journal of Accounting*. While I do not agree with all of Dr. Raymond's opinions, I can recommend him as someone who understands

life insurance accounting systems. Dr. Raymond has been retained by LOM as an advisor on its examinations in accounting. Might not someone like Dr. Raymond be a resource useful to the Society and its students on the topic of life insurance accounting?

The actuarial profession is a great one. Nothing is as stimulating as attacking a problem by the effective steps of fact finding, search of the literature, analysis, conclusion and, finally, decision. This excitement is best experienced by becoming involved in the very real day-to-day work of an actuarial department. An educational system based upon the "listen to me" approach will do little to inspire students to observe, experiment, reason, and enjoy studies. Information is not synonymous with knowledge.

### Reactions and Comments

I would respectfully submit the following as my reactions to the panel discussion and developments mentioned.

- The first five examinations should be retained in their present form. Be A. Winter's suggestion for substituting of "computer-oriented numerical analysis" for parts of finite differences seems sound to me.
- I share Mr. Hickman's notion that actuarial science is concerned with mathematics. Our Associateship examinations in mathematical topics seem the best way of maintaining standards in a "pluralistic educational system."
- I would replace parts of the five Fellowship examinations by an educational process involving satisfactory attendance at on-campus seminars on many of the subjects constituting the Fellowship syllabus.
- We should place less emphasis on the transmittal of information and seek ways of stimulating the student to read widely and to undertake research projects.
- We need to recognize that education has become, more than ever, a lifelong process. We should offer students and members, in cooperation with university, opportunities for refresher training and instruction in new developments.

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**MY LADY NICOTINE (2nd Installment)**

by A. C. Webster

*The Health Consequence of Smoking, A Public Health Service Review: 1967, pp. x, 199, U. S. Department of Health, Education, and Welfare, Washington, 1967.*

This is the 1967 Surgeon General's report, a continuation of the "monumental" 1964 Report *Smoking and Health* (reviewed in *TSA XVI*, 113). Public Law 89-92, The Federal Cigarette Labeling and Advertising Act of 1965 requires the Secretary of Health, Education, and Welfare to submit regular reports to the Congress on the health consequences of smoking. The Secretary may make legislative recommendations based on these reports — these, if any, are not covered in this volume.

The furor started by the 1964 Report has not died down and, after the fashion of most furors, tends to produce more heat than light. Despite the recent comments, political and press, this report does not add greatly to our store of basic knowledge as to the effects of smoking on health. Research into the subject continues and the Report has reviewed more than 2,000 studies made since the publication of the 1964 Report. One of these studies, "Cigarette Smoking and Health Characteristics," was reviewed in the September, 1967, issue of *The Actuary*.

**About the Report**

The current report states, after the review of these research studies:

"... no evidence has been revealed which brings into question the 1964 Report. On the contrary, the research studies published since 1964 have strengthened these conclusions and have extended in some important respects

**Education Discussion***(Continued from page 6)*

- We should decide if it is sound to apply the same "standards" to all parts of the syllabus. Is a thorough knowledge of social insurance as important as a command of the mathematics of life contingencies?

Pursuit of "comprehensiveness" has produced an unwieldy syllabus with too much emphasis on that most perishable commodity — information. □

**ACTUARIAL CLUB MEETINGS**

Feb. 8, Baltimore Actuaries Club.

March 14, Junior Branch of the New York Actuaries Club.

our knowledge of the health consequences of smoking."

The new research has three parts (like all Gaul)—epidemiological studies, a health survey, and "a vast amount of experimental, clinical, pathological, and behavioral research which adds to the understanding of the precise ways in which smoking affects the body, plus other closely related or peripheral information."

Perhaps it is in this last research area that we will find the clue to the higher mortality and morbidity rates of smokers as compared to non-smokers. This reviewer must leave to more erudite commentators any discussion of the carcinogenic polynuclear aromatic hydrocarbons, etc.

**Follow-up Studies**

The new statistical evidence consists very largely of follow-ups from four of the major population studies in the 1964 Report. Such a continuation obviously extends our knowledge of mortality and morbidity rates of smokers (the actuary might wish that more information had been made available as to the incidence of mortality by duration).

These extended studies would seem to have adequate exposure — the total number of deaths in all forms was 93,540 — and the continuation of the higher death rates strengthens the case for the causal relationship between smoking and increased mortality. The extent of the excess mortality seems to be not much different from that previously reported and, again, is less for women than for men. A new table emphasizes that the age group 45-54 gives the greatest excess mortality for both sexes.

As to the cause of this excess mortality, there are sections of the Report dealing with smoking and various causes of death, particularly cardiovascular disease and cancer.

The chief contributor to the *excess number of deaths* of cigarette smokers over non-smokers is still coronary artery disease; lung cancer is in second place. The new study is somewhat more definite

on the question of the causative role of cigarette smoking in deaths from coronary heart disease, based partly upon the research findings on the biomechanism of smoking. The epidemiological studies support this evidence by showing higher death rates.

The case for the relationship between lung cancer and cigarette smoking seems to be increasingly well documented.

All the new information confirms the improvement in mortality upon stopping smoking, thereby destroying the theory that stress, which inclines an individual to the use of tobacco, is the real cause of the higher death rate.

The new Report is well worth reading even though, in the opinion of the reviewer, it does not give us any more help in the selection of risks for life and health insurance.

The Surgeon General has announced the formation of a national Task Force for Smoking and Health. There are 11 members drawn from the fields of education, business, and medicine. Dr. William H. Stewart, the Surgeon General, states the specific objectives of the Task Force: "to consider how to encourage young people not to start smoking, reduce the hazard among persons now smoking, and develop a climate of opinion so that if a less hazardous cigarette is developed smokers will turn to it." □

**SIAM MEETS JUNE 11-14**

The 1968 National Meeting of the Society for Industrial and Applied Mathematics will be held in Toronto June 11-14. There will be a Special Symposium on Optimization. Further information can be obtained from H. B. Hair, at the Society's office, 33 South 17th Street, Philadelphia, Pa. 19103. □

**WHO'S MOONLIGHTING?**

"They [The Steelers] come in here Sunday to play the Giants, who have troubles of their own. If you look at the won-lost record of the Pittsburghs, you could be sorely tempted to blow the whole Christmas Club in return for, say, six points from your friendly, neighborhood actuary." (Newark, N. J. *Star Ledger*, Nov. 16, 1967).