

## NOTES ON OTHER ACTUARIAL JOURNALS

BY H. L. SEAL, B.Sc., Ph.D., F.F.A., J. HAMILTON-JONES, M.A., F.I.A.,  
AND B. P. PAIN, M.A., F.I.A.

## BELGIUM

*Bulletin: Association Royale des Actuaire Belges*, 58, 1956

- FRANCKX, E. *La théorie métamathématique du jury*, pp. 11-23. A review of the axiomatic development of the theory of social choice associated with the name of Arrow.
- MARCHANT, R. *Modalités pratiques d'application de la méthode des moindres carrés*, pp. 25-37. Reviews the mathematical basis of standard procedures in the method of least squares.
- VLEBERGH, R. *Sur le calcul du taux dans les opérations financières et viagères*, pp. 39-46. Investigates the conditions under which by using  $A_1 + B_1c_1^x$  and  $[A_2 + B_2c_2^x]^{-1}$  as interpolation functions at the abscissae  $x-h$ ,  $x$  and  $x+h$  one function will give too low, and the other too high, an estimate of the true value. The conditions are satisfied when interpolating for  $a_{\overline{n}}$ .
- LEFEVRE, J. *Un procédé d'établissement de tables de mortalité 'projetées'*, pp. 47-52. A short account of Swedish methods (see *J.I.A.* 81, 70).
- THYRION, P. *Considérations sur le bénéfice de mortalité dans les assurances du genre mixte*, pp. 53-76. A study of the emergence of mortality profit for an  $n$ -year pure endowment combined with various amounts of level  $n$ -year temporary assurance. 'Neutral' amounts are found such that the profit vanishes for suitably chosen forms of 'actual mortality'.
- GABRIEL, J. *L'évolution de la mortalité dans les pays à taux de mortalité bas*, pp. 77-88. A summary of papers presented to the World Population Congress, Rome, 1954.
- FRANCKX, E. *La méthode de Monte-Carlo*, pp. 89-101. A discussion of the application of the method of Monte-Carlo to the inversion of matrices (Compare A. D. Booth, *Numerical Methods*, pp. 107-9, London, 1955).

## HOLLAND

*Het Verzekerings-Archief (Actuariel Bijvoegsel)*, 33, 1956

- KANTERS, P. J. A. *Quelques théorèmes concernant le problème de renouvellement*, pp. 41-50. If  $H_N$  is the number of items in a collection at time  $N$ ,  $E_N$  is the number entering at time  $N$  and  $p_k$  is the probability of survival from entry for a period  $k$ , then

$$H_N = \sum_{k=0}^N p_k E_{N-k}.$$

The theorems established are concerned with the existence of  $\lim_{N \rightarrow \infty} E_N$  and  $\lim_{N \rightarrow \infty} E_N/H_N$ .

VAN OOSTERWIJK BRUYN, J. J. *Quelques observations sur le minimum des primes de l'assurance temporaire*, pp. 51-58. The premium

$$P_{\overline{an}|}^1 = \frac{\bar{A}_{\overline{an}|}^1 + \alpha + \gamma \bar{a}_{\overline{an}|}}{(1 - \beta) \bar{a}_{\overline{an}|}}$$

has, for fixed  $x$ , a minimum at some value  $n_0$  of  $n$ . The paper gives a method of determining  $n_0$  and shows that  $n_0$  increases with the rate of interest.

## UNITED STATES AND CANADA

*Transactions of the Society of Actuaries*, 8, 1956

MCCARTER, W. C. *A new annuity mortality table and a graded rate system for the life income settlement options*, pp. 127-65. The table is based on individual immediate annuity mortality of 1948-53 and is Makeham-graduated over age 60. Females are treated as males with a 5-year set-back in age and projected tables assume an age regression of one-tenth of a year for every calendar year elapsed since 1955. The table and its projection basis are proposed for general use with life income settlement options.

This number also contains a digest of informal discussions on Underwriting, Guaranteed Issue, Group Insurance, Investments, Individual Accident and Sickness Insurance, and General questions. There is also a Digest of Smaller Company Forum.

ANDERSON, W. A. *Presidential address*, pp. 241-8. Discusses actuaries' clubs, professional conduct, the examination syllabus and operations research.

STEARNS, J. L. *Mortality experience of the New England Life on policies issued in pension trusts for individuals normally uninsurable* (with discussion), pp. 249-57. The deaths are over five times those expected by the 1946-49 Select Basic table.

MAYERSON, A. L. *A new look at the New York expense limitation law* (with discussion), pp. 258-314. An excellent review by an ex-member of the New York Insurance Department.

GOLD, M. L. *Inflation and life insurance* (with discussion), pp. 315-43. A review of solutions suggested on the European continent.

BICKNELL, W. S. AND NESBITT, C. J. *Premiums and reserves in multiple decrement theory* (with discussion), pp. 344-89. A detailed analysis of the policy value of a generalized multiple-decrement assurance into its component parts. This decomposition is made in three separate ways.

FASSEL, E. G. *Premium rates varying by policy size* (with discussion), pp. 390-447. Reviews current methods of allowing for the diminishing proportion of the 'constant expense' in policies with large sums assured. British practice is thoroughly analysed.

MYERS, R. J. 1956 *amendments to the social security act* (with discussion), pp. 448-75. The most important change is the inclusion of a disability pension from age 50.

This number also contains a digest of discussions on the Need for a New Mortality Table, the Pre-authorized Check Plan, General Problems, Expenses, Social Security, and Topics of Interest: (a) to Younger Members, (b) to Consulting Actuaries, (c) to Government Actuaries, and (d) in Accident and Health Insurance.