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NOTES ON OTHER ACTUARIAL JOURNALS

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AUSTRALASIA

Transactions of the Actuarial Society of Australasia, Vol. 7, 1950–52

Shotlander, L. *Presidential Address* (1950), pp. 1–7.

Ross, Frank. *Notes on Life Insurance*, pp. 9–18.

Gastineau-Hills, M. H. and Jackson, P. C. *Some aspects of assessments of liability under the Broken Hill Mines (Pneumoconiosis-tuberculosis) scheme*, pp. 21–32.

Bulletin, 1948–1949, pp. 33–52. Mainly of legal interest.

Bienvenu, R. L., Cohn, L. J. and McDonald, R. F. *Life Office records for superannuation business*, pp. 53–64.

Craig, R. M. *Group life and pension schemes in Australia*, pp. 65–76.

Oxby, L. G. *Presidential Address* (1951), pp. 77–87. Includes comment on the Australian Life Tables based on the 1947 Census.

Caffin, S. W. *The cost of social security in Australia*, pp. 89–104.

Sumner, E. F. W. *The mortality of Indian and Fijian lives in Fiji*, pp. 105–12.

Geddes, A. E. *Theories of the rate of interest*, pp. 113–23.

Chatten, S. J. R. and Wickens, P. C. *Life Tables for the Australian states*, pp. 125–36.

Wylie, A. K. *Some points involved in new female pension funds*, pp. 137–49.

Parker, A. M. *Presidential Address* (1952), pp. 151–70.

Rutherford, J. G. *The application of actuarial principles to hospital benefit schemes*, pp. 171–88.

Denby, L. B. *Provision for expenses and bonuses in the valuation of whole life limited payment assurances*, pp. 189–97.

Pollard, A. H. *Some remarks on Australian population trends and their social and economic effects*, pp. 199–209.

Dowd, W. J. *Life Office Investment principles*, pp. 210–21.

Gardner, W. F. *Address*, pp. 222–30.

Bulletin, 1950–1951, pp. 211–34 (*sic*).

FRANCE

Bulletin Trimestriel de l'Institut des Actuaires Français

Nos. 203–204, 1953

Barbot, J. *Étude mathématique généralisée du jeu de Nain Jaune*, pp. 95–348. An application of the theory of Markoff chains to card games of the 'Pope Joan' type.

No. 205, 1953

THEPAUT, A. *Essai de détermination pratique du plein de conservation*, pp. 371–472. In its basic form Lundberg's theory of risk assumes that claims occur independently of one another and that the distribution of sums at risk is temporally invariant (see *J.S.S.* **6**, 35 [1946]). A 'safe side' limit of retention which does not require the second assumption is

$$6\lambda v/(3+2\lambda)\,(-ln\delta)$$

where λ is the risk loading in the risk premium, v is the risk reserve available and δ is the probability of eventual ruin (say, 10^{-6}). The author extends this development to excess loss reinsurance and considers the relaxation of Lundberg's 'independence' assumption. Numerical examples.

HOLLAND

Het Verzekerings-Archief, Vol. **31**, 1954

SCHMIDT, F. J. *Valuation of the premium reserve without grouping by age*, pp. 1–5. The Makeham-graduated Dutch population table GBM 1921/1930 may be accurately regraduated by the formulas

$$\ddot{a}_x = a_1 + b_1(1+i)^x + c_1 s^x + d_1 t^x,$$

$$D_x^{-1} = a_2 + b_2(1+i)^x + c_2 s^x + d_2 t^x,$$

with $i = \cdot 025$ and $25 \leqslant x \leqslant 75$. A standard Karup valuation formula then reduces to a six-constant function of the number of years elapsed since 1 January 1950.

YNTEMA, L. *Demographic extensions of the simple birth- and death-process*, pp. 6–20. A study of the discrete stochastic processes characterized by age- and sex-independent birth-, marriage- and death-rates. Only the simpler cases lead to explicit expressions for the probability distribution of the population size at time t.

ITALY

Giornale dell'Istituto italiano degli Attuari, Vol. **16**, 1953

LÉVY, P. *La mesure de Hausdorff de la courbe du mouvement brownien*, pp. 1–37.

GULOTTA, B. *Sulla estensione della legge di probabilità di Cauchy*, pp. 38–50. There are two simple geometrical derivations of Cauchy's probability law. However, when they are generalized to n dimensions one only of them retains the well-known property of stability (reproductivity).

FINETTI, B. DE. *Trasformazioni di numeri aleatori atte a far coincidere distribuzioni diverse*, pp. 51–57. Given two random variables X and Y with different continuous distribution laws, it is always possible to find a function ϕ such that $\phi(X)$ and $\phi(Y)$ have the same distribution law.

DABONI, L. *Considerazioni geometriche sulla condizione di equivalenza per una classe di eventi*, pp. 58–65. Studies a geometrical interpretation suggested in Finetti's article in Vol. **15**, 1952 (vide *J.I.A.* **79**, 227).

CHIARO, A. DEL. *Sulle tavole aggregate di eliminazione*, pp. 66–71. Further consideration of the estimate of the probability of exit due to cause A during a given interval, several types of decrement being involved. (Cf. previous article reviewed in *J.I.A.* **79**, 338.)

TEDESCHI, B. *Le idee di George King e di Ralph Todhunter sullo sconto delle cambiali*, pp. 72–87. A discussion of the fundamental definitions of interest and discount, with special reference to the work of British actuaries.

GUMBEL, E. J. *La définition de l'age limite*, pp. 88–93. An analysis of the difficulties involved in establishing a satisfactory definition for ω, the limiting age in a mortality table. The author prefers to regard the age at death as an unlimited, continuous random variable.

FINETTI, B. DE. *Una legge riguardante l'estinzione nei processi di eliminazione*, pp. 94–99. A group of n individuals is subjected to a series of trials, each trial involving the elimination of any number of individuals from 1 to n. If q is the fixed chance of any one individual being eliminated in any trial, and $P_m^{(n)}$ is the chance that the last trial of the series eliminates m 'survivors',

$$P_m^{(n)} = \sum_{r=1}^{n-m} \binom{n}{r} q^r p^{n-r}(1-p^n)^{-1} P_m^{(n-r)} \doteqdot q^m/m \mid \ln p \mid.$$

OTTAVIANI, G. *A proposito della legge di estinzione nei processi di eliminazione*, pp. 100–14. Studies the above approximation for $n \to \infty$.

PORTUGAL

Boletim do Instituto dos Actuários Portugueses, Vol. **8**, 1953

LAH, I. *Die Vorteilhafteste Interpolation der Rentenbarwerte*, pp. 7–20. Considers linear interpolation between values of $\{a_{x(i)}\}^n$. The best choice for n is

$$1 - 2S_{x+1}^{(2)} N_{x+1}/(S_{x+1})^2.$$

The method is extended to quadratic and cubic interpolation.

COSTA, M. A. F. *On the graduation of discrete frequency distributions*, pp. 21–27. The family of differential equations which leads to Pearson's system of frequency curves has a discrete analogy (Carver, *Proc. Casualty Actuar. Soc. Amer.* **6**, 1920, 52). Carver's own method of fitting these distributions is improved upon.

YNTEMA, L. *The graduation of net fertility tables*, pp. 29–43. If $B(t)$ is the density of female births at time t and $\phi(y)$ the expected number of girls born at age y to a female born now,

$$B(t) = \int_0^\infty B(t-y)\,\phi(y)\,dy.$$

The author investigates the consequences of assuming that $\phi(y)$ is proportional to $y^{-\frac{3}{2}} \exp[by - a^2/y]$, and applies the results to Dutch population data.

COSTA, M. A. F. *Sobre o cálculo da distribuição de uma variável casual*, pp. 45–57. An expository account of transformations of random variables.

JEQUIER, C. *L'évolution de l'assurance sur la vie en Suisse*, pp. 59–69. Legislative control was introduced in 1885 owing to the existence of numerous mushroom companies. Foreign companies were eliminated between 1920 and 1930 through currency difficulties. To-day life insurance is growing rapidly.

CASTRO, G. DE. *Limites aleatórios e intervalos de cobertura para quantilhos*, pp. 71–76. An exposition of confidence intervals for Portuguese readers.

LUIZI, E. G. *Alguns elementos para estudo de seguros familiares*, pp. 77–95. The collective method is used to derive premiums for benefits payable on the death of the assured or the earlier death of his wife, or dependent sons and daughters. Portuguese friendly society experience is used to derive tabulated functions for a wide range of ages.