

NOTES ON OTHER ACTUARIAL JOURNALS

BY SIR WILLIAM ELDERTON, K.B.E., PH.D. (OSLO), F.I.A., F.F.A.,
AND H. L. SEAL, B.Sc., PH.D., F.F.A.

BELGIUM

Bulletin de l'Association royale des Actuaire Belges, No. 56, 1952

- RIJKERS, H. *Sur la Dette latente et les Droits individuels des assujettis à un régime obligatoire d'Assurances Sociales*, pp. 15-26. Gives formulae for benefits and reserves in social insurance on basis of individual insurance.
- LEFÈVRE, J. *Formules de calcul des fonctions d'Esscher en théorie collective du risque*, pp. 27-33. Gives a table of $A_n(u)$ for $n=0$ to 7 and $u=0$ to 3 by intervals of $\cdot 1$ found easily by a recurrence formula involving Hermite polynomials.
- DE MOOR, J. *La problème des Pensions dans son ensemble*, pp. 35-42. A short arithmetical study of the pensions given under Belgian law.
- ROYER, R. *Aspects économiques et techniques de la Gestion des Assurances Sociales*, pp. 43-48. Remarks made by author in September 1950 at 5th Congress of l'Institut International des Finances Publiques on Répartition or capitalization.
- MAURICE, H. *Sur le calcul du taux dans les opérations financières et viagères*, pp. 49-59. Good results are obtained by using $Aa^x + B$ as an interpolation function.
- FRANCKX, E. *La méthode de Jecklin pour le calcul des réserves*, pp. 61-68. Discusses algebraically Jecklin's method based on the hyperbola.

BRAZIL

Boletim do Instituto Brasileiro de Atudria, Vol. v, 1950

- MADEIRA, J. L. *Sôbre as retenções nos seguros dos ramos elementares*, pp. 3-36. An empirical analysis of the ratios of claim payments to sums insured in 831 fire insurance claims made in 1948. The claims are subdivided according to geographical location (4), type of business (5) and type of construction (5), and the aim is to provide a rating scale for the 100 resulting categories. Inspection suggests that a logarithmic transformation with an analysis of variance (see, for example, W. L. Stevens, 1948, *Biometrika*, xxxv, 346) might have been revealing.
- MÉDICIS, R. DE A. *Extensão das operações do I.R.B. no ramo transportes, aos seguros de viagens intercontinentais*, pp. 37-53. A discussion of Brazil's participation in international marine reinsurance.
- TRINIDADE, M. *Aspectos técnico-administrativos da estatística de seguros*, pp. 55-78. A description of the work of the Statistical Division of the Brazilian Reinsurance Institute (I.R.B.). In 1948 there were already 185 million Hollerith (punched and reproduced) cards in the files.

ORNSTEIN, E. *Mortalidade entre segurados brasileiros*, pp. 79-95. Analyses, by the census method, the mortality of a small, but rapidly expanding, Brazilian life office during the years 1937 to 1948 (?). There were 729 policy-claims. The ultimate (after 5 years) mortality is in close agreement with that of the 'unloaded' C.S.O. (T.A.S.A. XLIII, 81) which was based on the mortality of U.S. companies during 1930-40.

FRANCE

Bulletin Trimestriel de l'Institut des Actuaire Français, No. 201,
December 1952

HOCHART, M. *Bénéfices de mortalité dus à l'emploi de la table A.F.*, pp. 291-305. The mortality being considerably lighter than the A.F. the author examines the profits accruing to the assurer.

DE FINETTI, B. *Une méthode de représentation graphique pour les Grandeurs Actuarielles*, pp. 307-14. A graphical method of explaining the ideas of actuarial functions to students.

POUDEVIGNE, J. *Détermination des annuités certaines par un procédé optique*, pp. 315-24. A pleasing idea.

Bulletin de l'association des actuaires diplômés de l'institut de science financière et d'assurances, 1951

EYRAUD, H. *Sur la définition de la 'Probabilité'*, pp. 1-3. Considers that the frequency definition of probability should be freed of the restriction that the relative frequency should tend to a mathematical limit. This was considered in detail by Popper, *Logik der Forschung*, Vienna, 1935.

FRANÇOIS, J. L. *Essai d'ajustement d'une distribution de sinistres*, pp. 4-36. An interesting attempt to graduate the U-shaped distribution of percentage loss suffered by an aircraft in an accident. The behaviour of the curve at the extremities, 0% and 100%, is discussed and the theory is applied to the calculation of the net premium for an insurance limited to $p\%$ of the aircraft's value.

MASSONNAT, P. *L'erreur comptable*, pp. 37-47. Studies the effect of inflation on a trading company's balance sheet.

HOLLAND

Het Verzekerings-Archief, Vol. XXX, No. 1, Jan. 1953

The Journal is now divided into two parts, one of which deals with insurance and the other with actuarial papers which are written in English, French or German. We shall review the actuarial part.

CAMPAGNE, C. *Le principe d'équivalence des placements*, pp. 2-19. This work is connected with Redington's paper (*J.I.A.* LXXVIII, 286).

ITALY

Giornale dell' Istituto italiano degli Attuari, Vol. xv, 1952

GINI, C. *Estensione della teoria della dispersione e della connessione a serie di grandezze assolute*, pp. 4-24. An extension of the Lexis dispersion theory to include 'analysis of variance'. Consideration is limited to 'expected values'.

TRICOMI, F. G. *Un problema di statistica matematica sorto dalla batteriologia*, pp. 25-39. A familiar generalization of Poisson's law expresses the probability of n events as

$$e^{-\sum_{j=1}^k m_j} \sum_{j=1}^k \prod_{j=1}^k \frac{m_j^{r_j}}{r_j!},$$

the sum being extended over all non-negative solutions of $n = \sum_{j=1}^k j r_j$. A pair of approximate formulae is provided. No numerical examples.

FINETTI, B. DE. *Gli eventi equivalenti e il caso degenero*, pp. 40-64. n events are said to be 'equivalent' if the $\binom{n}{r}$ sequences in which r successes can occur ($r=0, 1, 2, \dots, n$) are equi-probable. The probability of a success following n events of which r have been successes is then given by

$$p_r^{(n)} = \int_0^1 x^{r+1} (1-x)^{n-r} dF(x) / \int_0^1 x^r (1-x)^{n-r} dF(x),$$

where $F(x)$ is a distribution function. The article discusses the degenerate case where at least one $p_r^{(n)}$ is zero or unity. A particular example is provided by $dF(x) = k \{x(1-x)\}^{-\frac{1}{2}} dx$ ($0 < x < 1$) the prior probability law discussed by Perks (*J.I.A.* LXXIII, 285).

OTTAVIANI, G. *Sul problema della riassicurazione*, pp. 65-84. There are n companies charging premiums with specified risk loadings and possessing given risk reserves. Each company reinsures a quota part of every sum insured with a reinsurance company. The problem considered is the calculation of the retention quota for the j th policy in the i th company ($i=1, 2, \dots, n$) on the assumption that all $n+1$ companies have the same probability of being 'ruined'.

MAZZONI, P. *Equazioni differenziali per le rendite continue*, pp. 85-92. Studies $\xi_{\frac{k}{n}}$ and its successive differential coefficients. The main result, namely, that $\xi_{\frac{k}{n}}^{(k-2)} \xi_{\frac{k}{n}}^{(k)} / \{\xi_{\frac{k}{n}}^{(k-1)}\}^2$ always lies between 1 and $k^2/(k^2-1)$, ($k=2, 3, 4, \dots$), is an extension of a well-known theorem on absolutely monotonic functions in a particular case.

VILLARI, G. *Formule asintotiche per gli zeri dei polinomi d'Hermite*, pp. 93-103.

TEDESCHI, B. *Teorica dei tre usuali sistemi di sconto e critiche relative*, pp. 104-45. A discursive treatment of the theory of commercial discount. Briefly, simple interest and simple discount imply different rules for the accumulation of capital, namely $1+it$ and $1+it/[1+(1-t)i]$, respectively.

TOSITTI, C. G. *Sul riordinamento delle pensioni dell' assicurazione obbligatoria invalidità vecchiaia e superstiti*, pp. 146-61. A review of the 1952 changes in the Italian social security (old-age and invalidity pensions) regulations to meet vastly increased rises in the cost of living.

SCANDINAVIA

Nordisk Försäkringstidskrift, Vol. XXXIII, Part 1, Jan. 1953

Includes

ÅKESSON, O. A., pp. 1-17, on Swedish insurance in retrospect.

COHN, E., pp. 35-46, on economic and social consequences of the rise of the average age of human beings especially in Denmark.

LANDBERG, A., pp. 58-86, on the co-ordination, proposed by a parliamentary committee, of Swedish accident and sickness insurance.

It is with great regret that we announce that this is the last occasion upon which the name of Sir William Elderton will appear at the head of these Notes. Sir William has asked to be relieved of a task which he has assiduously performed throughout the period of 23 years which has elapsed since this section of the *Journal* was started at his instigation. We record our deep appreciation of this service which Sir William has rendered to the profession through the medium of the *Journal*.—Eds. *J.I.A.*