
While this book is mainly filled with tables of values relating to life insurance policies based on any combination of two or three lives at risk — and is therefore designed for technical use exclusively — it may interest the readers of the Bulletin to have pointed out to them somewhat of its scientific basis, and incidentally to note the great expansion of the life insurance business when such works of reference become necessary.

Mortality tables have been developed from crude statistics in many ways — by simple collection of data, by grading these by various summation formulae, by arbitrary graphic interpolation and the like. Some of the tables thus obtained are incorporated in law, as the "Northampton" for valuing life interests, the "Actuaries" and the "American" for the valuation of life insurance policies. But the only scientific method which gives an algebraic expression for the law of mortality and offers great practical advantages in use has never till now been given legal recognition. This method — the Makeham Formula — gives a curve expressing the law of mortality which is continuous and adheres closely to the original data.

By former methods of graduating the crude data, the resulting tables required to complete the matter in these hundred odd pages would have filled several volumes the size of Webster's Dictionary and have been more than proportionately troublesome to use. This condensation is effected by using a curious property of Makeham's law — that of "uniform seniority" — by which instead of having to use a different table for each different combination of ages of the two lives involved in a compound risk, but one table is needed — with an auxiliary table to show the modified argument by which to enter for each varying combination of lives. In other words, under Makeham's law, for every product of the probabilities of two lives aged \( x \) and \( y \) each continuing for a year, may be substituted the square of a similar probability for one life \( z \), \( z \) being intermediate between \( x \) and \( y \).

Makeham's law was first established in 1860, but its practical value is just beginning to be appreciated, in this country at least.

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