

CORRESPONDENCE.

SELECT NET PREMIUMS FOR ENDOWMENT ASSURANCES.

To the Editors of the Journal of the Institute of Actuaries.

SIRS,—I have recently had occasion to obtain a working equivalent to the select rates of mortality shown by the Institute Experience

of Endowment Assurances (Old and New combined). In default of a table of graduated rates, I have adopted one founded on simple percentages of the corresponding $O^{[M]}$ rates, which roughly reproduces the experience.

The premiums obtained from this table cannot differ materially from those which would be obtained from a "scientific" graduation, and so may be of interest. I therefore give specimens, comparing them with the corresponding $O^{[M]}$ and $O^{[NM]}$ values. It will be seen that the rates are, generally speaking, as much below those of the $O^{[M]}$ table as the latter are below those of the $O^{[NM]}$.

PURE ANNUAL PREMIUMS FOR ENDOWMENT ASSURANCES		$\frac{3}{2}$ PER-CENT.								$E^{[M]}$ approx. $O^{[M]}$ $O^{[NM]}$
Age at Entry	TERM									
	10	15	20	25	30	35	40	45	50	
20	8.42	5.24	3.68	2.78	2.21	1.83	1.57	1.39	1.27	
	8.47	5.30	3.76	2.86	2.30	1.93	1.67	1.50	1.39	
	8.55	5.38	3.83	2.94	2.38	2.01	1.76	1.59	1.48	
30	8.45	5.27	3.74	2.86	2.32	1.97	1.75	...	...
	8.52	5.36	3.84	2.98	2.44	2.11	1.90	..	..
	8.61	5.45	3.93	3.07	2.54	2.21	2.00	..	..
40	8.53	5.39	3.90	3.07	2.59	...	...	..	..
	8.63	5.52	4.05	3.25	2.79	...	...	..	..
	8.74	5.64	4.18	3.38	2.93	...	...	..	..
50	8.73	5.68	4.29	..	...	...	...	..	..
	8.90	5.90	4.57	...	...	...	...	...	..
	9.08	6.10	4.77	..	..	..	..	..	..

Of the rates of mortality used it will be sufficient to say that the percentage for the first eleven years of assurance for ages attained 28 and over is 75 of the corresponding $O^{[M]}$ rate, that the ultimate percentage after twenty years of assurance is 85 of the $O^{[M]}$ ultimate rate, that the expected deaths for the more solid part of the Experience are 5,550 as against 5,517 actual, and for the whole Experience, excluding the first twenty years of assurance, 626 as against 617.

I am, Sirs,

Yours faithfully,

W. E. NORTON.

48, Gracechurch Street, E.C.,
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