equations, the nine surrender values become known. We have here the familiar case of a whole-life assurance, all the premiums for which are comprised in ten equal annual payments, one at the commencement of each of the first ten years, but where no surrender values of given amounts form any part of the contract, and it is evident from what precedes that this is the only possible instance—for the same description of policy—in which a *uniform* premium will exactly provide (under any law of surrender) for a set of surrender values, the amounts of which *might* be specified beforehand or at the time the assurance was effected.

The actual amounts of the surrenders which might be thus held out to the assurer, without introducing any uncertainty or speculation into the transaction, are the values of V_9, V_8, &c., given by the last set of formulæ, and these are specified for ages 30, 40, and 50, at entry, in the following table. On comparing them with the results previously obtained for V_9, V_8, &c., on another hypothesis, it will be seen that the difference is only in the decimal in each case.

Age at Entry	ϖ.	V_2.	V_3.	V_4.	V_5.	V_6.	V_7.	V_8.	V_9.
30	4·674	8·152	12·445	16·891	21·498	26·273	31·223	36·357	41·684
40	5·636	9·812	14·986	20·345	25·894	31·641	37·594	43·768	50·176
50	7·002	11·600	17·683	23·974	30·494	37·262	44·304	51·653	59·342

The figures here given for ϖ are derived, of course, from $\varpi = \dfrac{M_x}{N_{x-1} - N_{x+9}}$.

Sufficient materials have now probably been given in this and my former letter to enable any one interested in the subject to form an opinion as to the merits of the American system of ten year nonforfeiture policies. Its simplicity of statement is its one recommendation, and no doubt a great and important one, but it is plain that if a Company issued a considerable number of such policies, some care would be necessary at each periodical valuation in determining the reserve required for the risks, in order to attain that degree of exactness and certainty in the results to which most English Actuaries are accustomed.

I am,
Sir,
Your most obedient Servant,
SAMUEL YOUNGER.

17, *Waterloo Place,*
Pall Mall, London,
31*st May,* 1869.

To the Editor of the Journal of the Institute of Actuaries.

SIR,—In Mr. Higham's paper on the value of "selection," in vol. i., in discussing the effect of taking the lives in quinquennial groups, he says in a foot-note, page 186, that if the numbers living at ages m, $m+1$, $m+2$, $m+3$, $m+4$, respectively, be represented by 10, 9, 8, 7, 6, then, if the probability of living a year diminish by second differences, the probability for the quinquennial combination is $=$1st term$+\frac{7}{4}d_1+\frac{52}{32}d_2$,

d_1, d_2, being the 1st and 2nd orders of differences of p_m.

This result is not quite self-evident, so I have ventured to send you a demonstration of it.

We have

$$\begin{array}{llll}
p_m = p_m & \therefore & 10p_m & = 10p_m \\
p_{m+1} = p_m + d_1 & \therefore & 9p_{m+1} = & 9p_m + 9d_1 \\
p_{m+2} = p_m + 2d_1 + d_2 & \therefore & 8p_{m+2} = & 8p_m + 16d_1 + 8d_2 \\
p_{m+3} = p_m + 3d_1 + 3d_2 & \therefore & 7p_{m+3} = & 7p_m + 21d_1 + 21d_2 \\
p_{m+4} = p_m + 4d_1 + 6d_2 & \therefore & 6p_{m+4} = & 6p_m + 24d_1 + 36d_2.
\end{array}$$

Adding together, and dividing by 40, $(=10+9+8+7+6)$, we get

$$\frac{10p_m + 9p_{m+1} + 8p_{m+2} + 7p_{m+3} + 6p_{m+4}}{40} = \frac{1}{40}(40p_m + 70d_1 + 65d_2)$$

or, probability of combination $= p_m + \frac{7}{4}d_1 + \frac{13}{8}d_2$

$$= p_m + \frac{7}{4}d_1 + \frac{52}{32}d_2,$$

which is the result given by Mr. Higham.

I am, Sir,

Your obedient servant,

June 3*rd*, 1869. W. SUTTON.

"EVILLY-DISPOSED."

To the Editor of the Assurance Magazine.

SIR,—Mr. Bunyon having misquoted the word to which I objected, has not unnaturally failed to understand the objection itself.

In his "Law of Fire Insurance," he wrote "evilly-disposed" as one word, with the hyphen; not as two words, "evilly disposed," as they stand in his letter to you of the 6th March. In the latter case, the word evilly is rightly used as an adverb, as it is in the quotations which Mr. Bunyon gives, and as it is also by Shakespeare in *Timon of Athens*, where there occurs the phrase, "Good deeds evilly bestowed." So used, I have no objection to it, archaic or other: my objection is to its being linked, though an adverb, to the neutral word "disposed," to be employed when so compounded as an adjective,—an "evilly-disposed" person. It will be noticed that the word disposed fails of itself to qualify "person," and needs an adjectival prefix as a sort of grammatical co-efficient to give it the force and meaning of a true adjective.

Mr. Bunyon's quotations wholly fail to justify his use of the word, nor can I find any that will justify it. There are, on the other hand, numerous examples among the old writers—the Fathers of our language—of the word "evil" forming part of a compound adjective. Thus, Sterling speaks of "evil-conquered states"; Shelton, of an "evil-favored countenance"; Spenser, of an "evil-gotten mass" and an "evil-ordered train"; Sir Philip Sidney, of "evil-wishing states"; and Lansdown, of an "evil-fated line." Daniel, in his "History of the Civil Wars," has a similar word—"evil-minded"—which is still in every day use. Without multiplying these